

NIH Nanotechnology Task Force

2008 Statement of Purpose

I. Overarching Goals of the Task Force

The trans-NIH Nanotechnology Task Force (TF) was established in April 2006 to develop an integrated NIH scientific and policy vision for nanotechnology. Nanotechnology is proving to be applicable to a multitude of medical applications ranging from disease prevention and diagnosis to novel methods of therapy. It also provides tools for improved understanding of molecular and cellular processes.

The NIH investment in basic and applied research has grown from \$40M in FY01 to over \$200M in FY08. The transformative value of this investment is emerging from new approaches and understanding from the areas of physics, material science and engineering to biomedical problems. This creates new challenges: learning new aspects of technology, understanding the language of this new multidisciplinary community, and establishing links between technology development and medicine. Nanotechnology offers promising solutions that are relevant to the mission of *all* NIH institutes because the knowledge and tools are applicable to any disease, organ, or cell type.

The unique characteristics of nanotechnology provide the foundation for the Nanotechnology Task Force and its mission. The widespread interest and relevance of nanotechnology requires frequent communication, coordination, and exchange of ideas among institutes at the NIH to develop an effective, creative, and synergistic research portfolio.

II. Plans and Activities

A. Communication and Knowledge Dissemination

a. Workshops, conferences, seminars

The TF includes extramural and several intramural participants from most ICs as well as representatives of the NIH OD (see below, III. Roster of Members). A major goal of the Nanotechnology Task Force is to *increase communication and knowledge about nanotechnology* across the NIH. This is implemented primarily by:

- Monthly Task Force Meetings
- Scientific Nanotechnology and Nanomedicine Seminars
- Brochures (in production)

Future planned activities include:

- Large 2-day symposium (i.e., similar to BECON 2000)
- NanoWeek 09 (to include)
 1. ½ day symposium: Introduction to Nanotechnology for NIH
 2. Nanomedicine Talks by Center directors from NCI, PEN and Roadmap Nanomedicine Initiative
 3. Joint IEEE/NIH symposium on Nanomedicine
- NIH Website for Nanotechnology

B. Focus Groups to address biomedical challenges using nanotechnology

The Task Force seeks to achieve coordination and development of activities across NIH in specifically targeted areas of high mutual interest. Focus areas are identified based on their potential strategic impact. Members of the focus groups will carry out in-depth analyses of targeted areas to identify and develop the highest impact funding opportunities, education efforts, and coordination strategies. Focus areas are expected to evolve over time; new groups will be formed as needs are identified. The current groups are:

- Multifunctional Platforms
 - for combining targeting, delivery and/or imaging
- Self-assembly and Molecular Recognition
 - including bio-inspired materials, processes, and structures; organ-tissue engineering
- Biotic-Abiotic Interfaces

C. Health and Safety Implications of Nanotechnology

Coordinate NIH activities (NIEHS) with other agencies to address developing concerns and needs

Current Activities:

- NEHI (Nanotechnology Environmental and Health Implications)
 - A working group of the NSET (Nanoscale Science, Engineering and Technology Subcommittee of the National Nanotechnology Initiative) devoted to addressing environmental, health, and safety issues related to nanotechnology; and coordination of agency activities related to understanding potential risks of nanotechnology
- Nano Health Enterprise
 - A public-private partnership including other Federal agencies and members of private sector businesses with a stake in nanotechnology development and standards development.

D. Interaction with other federal agencies and trans-NIH activities

The TF will work with other federal agencies and NIH groups to coordinate efforts across the government through:

- NSET Representation
- Interaction with NSF, DOE Nanotechnology Centers
- Interaction with the NIH Nanomedicine RM initiative

III. Roster of Members (as of 11/08)

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