



CHARTER  
of the  
SUBCOMMITTEE ON NANOSCALE SCIENCE, ENGINEERING, AND TECHNOLOGY,  
COMMITTEE ON TECHNOLOGY,  
NATIONAL SCIENCE AND TECHNOLOGY COUNCIL

**A. Official Designation**

The Subcommittee on Nanoscale Science, Engineering, and Technology (NSET) is hereby re-established by action of the National Science and Technology Council (NSTC), Committee on Technology.<sup>1</sup>

**B. Purpose and Scope**

The NSET serves as an interagency forum for developing consensus and resolving issues associated with nanotechnology<sup>2</sup> research and development (R&D) policy, programs, and budget guidance. The purpose of the NSET is to coordinate the multi-agency nanoscale science, engineering, and technology R&D effort known as the National Nanotechnology Initiative (NNI) through interagency activities directed broadly towards the following four goals:

1. advance a world-class nanotechnology research and development program;
2. foster the transfer of new technologies into products for commercial and public benefit;
3. develop and sustain educational resources, a skilled workforce, and the supporting infrastructure and tools to advance nanotechnology; and
4. support responsible development of nanotechnology.

Through its activities, the NSET shall seek to maintain the U.S. position as a world leader in nanotechnology; enhance national security; improve U.S. productivity and competitiveness and promote long-term economic growth; protect the environment; improve education, training, and life-long learning; and improve the health and quality of life of the U.S. citizenry.

It is also a purpose of the NSET to implement relevant provisions of the 21<sup>st</sup> Century Nanotechnology Research and Development Act of 2003 (Public Law 108-153),<sup>†</sup> hereafter referred to as the Act, and any other Federal statute relating to nanoscale science, engineering, and technology R&D.

The scope of the activities under the NSET includes:

- i. Coordinating planning, budgeting, implementation, and reviews of the NNI across Federal agencies.

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<sup>1</sup> The NSET subcommittee was last re-chartered on July 10, 2013.

<sup>2</sup> For the purposes of this document, the term nanotechnology is used broadly to include nanoscale science, engineering, and technology, and R&D includes fundamental and applied research, technology development and engineering, demonstrations, and education and training.

- ii. Coordinating and maintaining appropriate interactions of the participating agencies with the Office of Science and Technology Policy (OSTP); the Office of Management and Budget (OMB); other organizations in the Executive Office of the President; Congress; State and local government organizations; academia, industry, and other non-governmental organizations; international organizations and counterparts; and the public.
- iii. Where appropriate, developing multi-agency approaches for achieving the goals of the NNI.
- iv. Coordinating responses to and implementation of recommendations from the National Nanotechnology Advisory Panel (NNAP) and other appropriate advisory bodies for strengthening the NNI.<sup>3</sup>
- v. Facilitating interaction among the Federal agencies that support R&D on nanotechnology and those agencies that have regulatory authorities for protecting public and worker health and safety and the environment.
- vi. Facilitating interaction with Federal agencies that are not members of the NSET and that need nanotechnology to accomplish their missions, and identifying R&D that will address those needs.

### **C. Functions**

Core functions of the NSET include the following functions:

1. Develop long-range plans aimed at achieving the goals and priorities for Federal nanoscale science, engineering, and technology R&D.
2. In consultation with OSTP, report to Congress as called for by the Act and interface with Congress as needed on issues relevant to the NNI and on NSET activities.
3. Pursuant to the Act:
  - 3.1. Establish goals and priorities for Federal nanoscale science, engineering, and technology R&D.
  - 3.2. Establish "Program Component Areas," defined as major subject areas under which are grouped related individual projects and activities.
  - 3.3. Coordinate Federal nanoscale science, engineering, and technology R&D, including programs, budgets, and implementation. In particular, where appropriate, initiate and coordinate the development of multi-agency approaches to achieving the goals of the NNI.
  - 3.4. Every three years, prepare an updated strategic plan to guide the activities under the NNI.
  - 3.5. Facilitate the transition of the results of NNI R&D to applications for government and commercial use and for public benefit.
  - 3.6. Identify nanoscale science, engineering, and technology research areas that are not being adequately addressed by the agencies' current research programs and develop coordinated strategies to address such research areas.
  - 3.7. Exchange information with academia, industry, State and local governments, and other appropriate groups conducting research on and using nanotechnology.
  - 3.8. Oversee and collaborate with the National Nanotechnology Coordination Office (NNCO), established by the Act in order to provide technical and administrative support to the NSTC body responsible for the NNI and to the NNAP.
  - 3.9. Prepare annual reports on the NNI (as Supplements to the President's Budget or in

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<sup>3</sup> The President's Council of Advisors on Science and Technology (PCAST) has been designated by Executive Order 13539 of April 21, 2010 to serve as the NNAP.

some other form) and other documents, as appropriate.

4. Hold meetings not less than six times per year, including planning meetings and budget/technical reviews as needed.
5. Coordinate with other NSTC and interagency groups on issues of common interest.
6. Report to the CoT and to the Director of OSTP, in accordance with prescribed NSTC processes, to summarize the activities of the NSET and to set forth recommendations regarding the establishment of Federal nanotechnology R&D priorities, specific agency activities, expected outcomes to address those priorities, and other major policy and R&D issues.

In support of these functions, the NSET may further establish and oversee Interagency Working Groups (WGs), Task Forces, and/or Fast-Track Action Committees (FTACs) as needed to facilitate focused interagency R&D activities, coordinate planning activities with OSTP and budget activities with OMB, task Federal agencies to gather required information and data, and coordinate with other NSTC groups.

#### **D. Membership**

The following NSTC departments and agencies are represented on the NSET:

Department of Agriculture;  
Department of Commerce;  
Department of Defense;  
Department of Education;  
Department of Energy;  
Department of Health and Human Services;  
Department of Homeland Security;  
Department of the Interior;  
Department of Justice;  
Department of Labor;  
Department of State;  
Department of the Treasury;  
Department of Transportation;  
Consumer Product Safety Commission (ex officio);  
Environmental Protection Agency;  
Intelligence Community;  
International Trade Commission (ex officio);  
National Aeronautics and Space Administration;  
National Science Foundation; and  
Nuclear Regulatory Commission (ex officio).

The following components of the Executive Office of the President shall also be represented on the NSET:

Office of Management and Budget; and  
Office of Science and Technology Policy (Co-chair).

Cooperating departments and agencies shall include such other Executive organizations, departments, and agencies as the CoT Chair and/or NSET Co-Chairs may designate, as

appropriate. The NSET will also strive to enhance the Federal research and development enterprise by embracing diversity, recognizing that inclusion of a broad range of backgrounds and perspectives is critical to achieving robust intellectual dialogue.

#### **E. Structure and Operation of the NSET**

1. Each member agency shall have one principal representative and may have one or more additional representatives on the NSET.
2. Principal representatives are expected to have authority to represent the department or agency as a whole, and may designate alternate principal representatives as needed.
3. The NSET operates on a consensus basis.<sup>4</sup>
4. The NSET is jointly led by an Agency Co-chair and an OSTP Co-chair. The Chair or Co-Chairs of the CoT select and appoint the Agency Co-chair from among the agency representatives. The Agency Co-chair serves for a two-year term, which may be renewed. The OSTP liaison serves as the OSTP Co-chair.
5. The NSET Co-chairs select and appoint an Executive Secretary who keeps the official records of the NSET, including an up-to-date roster of member agencies and their representatives as well as meeting records including minutes. The Executive Secretary may be an agency or EOP representative or may be a designated member of the NNCO staff.

As needed and at the discretion of the NSET Co-chairs, the NSET may convene a Senior Steering Group composed of the NSET Co-chairs, the OMB liaison, the Director of the NNCO, and the principal representatives (or designated alternates) of each member agency that is a part of the NNI budget crosscut that is referenced in the Analytical Perspectives of the most recent annual President's Budget and reflected in the corresponding NNI Supplement to the President's Budget. The Senior Steering Group is responsible for developing approaches to address NSET functions related to research budget prioritization and coordination, and is expected to convene at least once each year.

#### **F. Resources**

The National Nanotechnology Coordination Office (NNCO) provides day-to-day technical and administrative support to the NSET, and selected support to any subgroups of the NSET. The NNCO is supported by agency cash and in-kind contributions in accordance with the Act and with Sec. 631 of Public Law 108-7. Agency shares of NNCO support will be at a minimum 1% of the approved NNCO budget for those agencies represented in the NNI budget crosscut described above in Section E, with the remainder based on each agency's percentage of all nanotechnology R&D funding reported (previous fiscal year estimate with any earmarks deducted, based on OMB data). The NNCO will be staffed by Government detailees and contract employees, and through the Intergovernmental Personnel Act (IPA) Mobility Program.

#### **G. Private-Sector Interface**

The NSET may consult the President's Council of Advisors on Science and Technology (PCAST) to secure appropriate private sector advice and will recommend to the CoT and/or the Assistant to

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<sup>4</sup> In this context, consensus is taken to mean that the position of each member shall be considered and, to the extent possible, the NSET shall proceed without objection. It does not mean that all decisions must be unanimous.

the President for Science and Technology the nature of additional private-sector<sup>5</sup> advice needed to accomplish its mission. PCAST has been designated by Executive Order 13539 as the National Nanotechnology Advisory Panel (NNAP) called for by the Act. Pursuant to that Act, the NNAP is to provide an independent assessment of Federal nanotechnology R&D. This assessment includes a periodic review of the activities of the NSET and any sub-groups. Also pursuant to the Act, the findings and recommendations of this assessment are presented to the President and a copy forwarded to Congress. The NSET may also interact with and receive *ad hoc* advice from various private-sector groups consistent with the Federal Advisory Committee Act.

**H. Termination Date**

Unless renewed by the Chair(s) of the CoT or the Assistant to the President for Science and Technology prior to its expiration, the NSET shall terminate no later than June 30, 2017.

**I. Determination**

I hereby determine that the establishment of the NSET is in the public interest in connection with the performance of duties imposed on the Executive Branch by law, and that such duties can best be performed through the advice and counsel of such a group.

Approved:



Thomas Kalil  
Chair, Committee on Technology and  
Deputy Director for Technology and Innovation  
Office of Science and Technology Policy  
Executive Office of the President

12/07/16  
Date

<sup>5</sup> The Federal Advisory Committee Act, 5 U.S.C. App., as amended, does not explicitly define “private sector,” but the phrase is generally understood to include individuals or entities outside the Federal government such as, but not limited to, the following: non-Federal sources, academia, State, local or Tribal governments, individual citizens, the public, non-governmental organizations, industry associations, and international bodies.

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† Excerpts of 21st Century Nanotechnology Research and Development Act of 2003 (Public Law 108-153):

SEC. 2. NATIONAL NANOTECHNOLOGY PROGRAM.

(a) NATIONAL NANOTECHNOLOGY PROGRAM.—The President shall implement a National Nanotechnology Program. Through appropriate agencies, councils, and the National Nanotechnology Coordination Office established in section 3, the Program shall—

- (1) establish the goals, priorities, and metrics for evaluation for Federal nanotechnology research, development, and other activities;
- (2) invest in Federal research and development programs in nanotechnology and related sciences to achieve those goals; and
- (3) provide for interagency coordination of Federal nanotechnology research, development, and other activities undertaken pursuant to the Program.

(b) PROGRAM ACTIVITIES.—The activities of the Program shall include—

- (1) developing a fundamental understanding of matter that enables control and manipulation at the nanoscale;
- (2) providing grants to individual investigators and interdisciplinary teams of investigators;
- (3) establishing a network of advanced technology user facilities and centers;
- (4) establishing, on a merit-reviewed and competitive basis, interdisciplinary nanotechnology research centers, which shall—
  - (A) interact and collaborate to foster the exchange of technical information and best practices;
  - (B) involve academic institutions or national laboratories and other partners, which may include States and industry;
  - (C) make use of existing expertise in nanotechnology in their regions and nationally;
  - (D) make use of ongoing research and development at the micrometer scale to support their work in nanotechnology; and
  - (E) to the greatest extent possible, be established in geographically diverse locations, encourage the participation of Historically Black Colleges and Universities that are part B institutions as defined in section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2)) and minority institutions (as defined in section 365(3) of that Act (20 U.S.C. 1067k(3))), and include institutions located in States participating in the Experimental Program to Stimulate Competitive Research (EPSCoR);
- (5) ensuring United States global leadership in the development and application of nanotechnology;
- (6) advancing the United States productivity and industrial competitiveness through stable, consistent, and coordinated investments in long-term scientific and engineering research in nanotechnology;
- (7) accelerating the deployment and application of nanotechnology research and development in the private sector, including startup companies;
- (8) encouraging interdisciplinary research, and ensuring that processes for solicitation and evaluation of proposals under the Program encourage interdisciplinary projects and collaborations;
- (9) providing effective education and training for researchers and professionals skilled in the interdisciplinary perspectives necessary for nanotechnology so that a true interdisciplinary research culture for nanoscale science, engineering, and technology can emerge;
- (10) ensuring that ethical, legal, environmental, and other appropriate societal concerns, including the potential use of nanotechnology in enhancing human intelligence and in developing artificial intelligence which exceeds human capacity, are considered during the development of nanotechnology by—
  - (A) establishing a research program to identify ethical, legal, environmental, and other appropriate societal concerns related to nanotechnology, and ensuring that the results of such research are widely disseminated;

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(B) requiring that interdisciplinary nanotechnology research centers established under paragraph (4) include activities that address societal, ethical, and environmental concerns;

(C) insofar as possible, integrating research on societal, ethical, and environmental concerns with nanotechnology research and development, and ensuring that advances in nanotechnology bring about improvements in quality of life for all Americans; and

(D) providing, through the National Nanotechnology Coordination Office established in section 3, for public input and outreach to be integrated into the Program by the convening of regular and ongoing public discussions, through mechanisms such as citizens' panels, consensus conferences, and educational events, as appropriate; and

(11) encouraging research on nanotechnology advances that utilize existing processes and technologies.

(c) PROGRAM MANAGEMENT.—The National Science and Technology Council shall oversee the planning, management, and coordination of the Program. The Council, itself or through an appropriate subgroup it designates or establishes, shall—

(1) establish goals and priorities for the Program, based on national needs for a set of broad applications of nanotechnology;

(2) establish program component areas, with specific priorities and technical goals, that reflect the goals and priorities established for the Program;

(3) oversee interagency coordination of the Program, including with the activities of the Defense Nanotechnology Research and Development Program established under section 246 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (Public Law 107–314) and the National Institutes of Health;

(4) develop, within 12 months after the date of enactment of this Act, and update every 3 years thereafter, a strategic plan to guide the activities described under subsection (b), meet the goals, priorities, and anticipated outcomes of the participating agencies, and describe—

(A) how the Program will move results out of the laboratory and into application for the benefit of society;

(B) the Program's support for long-term funding for interdisciplinary research and development in nanotechnology; and

(C) the allocation of funding for interagency nanotechnology projects;

(5) propose a coordinated interagency budget for the Program to the Office of Management and Budget to ensure the maintenance of a balanced nanotechnology research portfolio and an appropriate level of research effort;

(6) exchange information with academic, industry, State and local government (including State and regional nanotechnology programs), and other appropriate groups conducting research on and using nanotechnology;

(7) develop a plan to utilize Federal programs, such as the Small Business Innovation Research Program and the Small Business Technology Transfer Research Program, in support of the activity stated in subsection (b)(7);

(8) identify research areas that are not being adequately addressed by the agencies' current research programs and address such research areas;

(9) encourage progress on Program activities through the utilization of existing manufacturing facilities and industrial infrastructures such as, but not limited to, the employment of underutilized manufacturing facilities in areas of high unemployment as production engineering and research testbeds; and

(10) in carrying out its responsibilities under paragraphs (1) through (9), take into consideration the recommendations of the Advisory Panel, suggestions or recommendations developed pursuant to subsection (b)(10)(D), and the views of academic, State, industry, and other appropriate groups conducting research on and using nanotechnology.

(d) ANNUAL REPORT.—The Council shall prepare an annual report, to be submitted to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science, and other appropriate committees, at the time of the President's budget request to Congress, that includes—

(1) the Program budget, for the current fiscal year, for each agency that participates in the Program, including a breakout of spending for the development and acquisition of research facilities and instrumentation, for each program component area, and for all activities pursuant to subsection (b)(10);

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- (2) the proposed Program budget for the next fiscal year, for each agency that participates in the Program, including a breakout of spending for the development and acquisition of research facilities and instrumentation, for each program component area, and for all activities pursuant to subsection (b)(10);
  - (3) an analysis of the progress made toward achieving the goals and priorities established for the Program;
  - (4) an analysis of the extent to which the Program has incorporated the recommendations of the Advisory Panel; and
  - (5) an assessment of how Federal agencies are implementing the plan described in subsection (c)(7), and a description of the amount of Small Business Innovative Research and Small Business Technology Transfer Research funds supporting the plan.

### SEC. 3. PROGRAM COORDINATION.

(a) IN GENERAL.—The President shall establish a National Nanotechnology Coordination Office, with a Director and full-time staff, which shall—

- (1) provide technical and administrative support to the Council and the Advisory Panel;
- (2) serve as the point of contact on Federal nanotechnology activities for government organizations, academia, industry, professional societies, State nanotechnology programs, interested citizen groups, and others to exchange technical and programmatic information;
- (3) conduct public outreach, including dissemination of findings and recommendations of the Advisory Panel, as appropriate; and
- (4) promote access to and early application of the technologies, innovations, and expertise derived from Program activities to agency missions and systems across the Federal Government, and to United States industry, including startup companies.

(b) FUNDING.—The National Nanotechnology Coordination Office shall be funded through interagency funding in accordance with section 631 of Public Law 108–7.

(c) REPORT.—Within 90 days after the date of enactment of this Act, the Director of the Office of Science and Technology Policy shall report to the Senate Committee on Commerce, Science, and Transportation, and the House of Representatives Committee on Science on the funding of the National Nanotechnology Coordination Office. The report shall include—

- (1) the amount of funding required to adequately fund the Office;
- (2) the adequacy of existing mechanisms to fund this Office; and
- (3) the actions taken by the Director to ensure stable funding of this Office.

### SEC. 4. ADVISORY PANEL.

(a) IN GENERAL.—The President shall establish or designate a National Nanotechnology Advisory Panel.

(b) QUALIFICATIONS.—The Advisory Panel established or designated by the President under subsection (a) shall consist primarily of members from academic institutions and industry. Members of the Advisory Panel shall be qualified to provide advice and information on nanotechnology research, development, demonstrations, education, technology transfer, commercial application, or societal and ethical concerns. In selecting or designating an Advisory Panel, the President may also seek and give consideration to recommendations from the Congress, industry, the scientific community (including the National Academy of Sciences, scientific professional societies, and academia), the defense community, State and local governments, regional nanotechnology programs, and other appropriate organizations.

(c) DUTIES.—The Advisory Panel shall advise the President and the Council on matters relating to the Program, including assessing—

- (1) trends and developments in nanotechnology science and engineering;
- (2) progress made in implementing the Program;
- (3) the need to revise the Program;

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(4) the balance among the components of the Program, including funding levels for the program component areas;

(5) whether the program component areas, priorities, and technical goals developed by the Council are helping to maintain United States leadership in nanotechnology;

(6) the management, coordination, implementation, and activities of the Program; and

(7) whether societal, ethical, legal, environmental, and workforce concerns are adequately addressed by the Program.

(d) **REPORTS.**—The Advisory Panel shall report, not less frequently than once every 2 fiscal years, to the President on its assessments under subsection (c) and its recommendations for ways to improve the Program. The first report under this subsection shall be submitted within 1 year after the date of enactment of this Act. The Director of the Office of Science and Technology Policy shall transmit a copy of each report under this subsection to the Senate Committee on Commerce, Science, and Technology, the House of Representatives Committee on Science, and other appropriate committees of the Congress.

(e) **TRAVEL EXPENSES OF NON-FEDERAL MEMBERS.**—Non-Federal members of the Advisory Panel, while attending meetings of the Advisory Panel or while otherwise serving at the request of the head of the Advisory Panel away from their homes or regular places of business, may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for individuals in the government serving without pay. Nothing in this subsection shall be construed to prohibit members of the Advisory Panel who are officers or employees of the United States from being allowed travel expenses, including per diem in lieu of subsistence, in accordance with existing law.

(f) **EXEMPTION FROM SUNSET.**—Section 14 of the Federal Advisory Committee Act shall not apply to the Advisory Panel.