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108TH CONGRESS
1ST SESSION

H. R. 283

To establish the Nanoscience and Nanotechnology Advisory Board.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 8, 2003

Mr. HONDA (for himself, Ms. JACKSON-LEE of Texas, Mrs. TAUSCHER, Mr. HOLT, Ms. EDDIE BERNICE JOHNSON of Texas, Mr. HOEFFEL, Ms. NORTON, Ms. LOFGREN, and Mr. ETHERIDGE) introduced the following bill; which was referred to the Committee on Science

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A BILL

To establish the Nanoscience and Nanotechnology Advisory Board.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Nanoscience and Nanotechnology Advisory Board Act of 2003''.

SEC. 2. FINDINGS.

Congress makes the following findings:

(1) The emerging fields of nanoscience and nanoengineering (collectively, ''nanotechnology''), in which matter is manipulated at the atomic level in

order to build materials, machines, and devices with novel properties or functions, are leading to unprecedented scientific and technological opportunities that will benefit society by changing the way many things are designed and made.

(2) Long-term nanoscale research and development leading to potential breakthroughs in areas such as materials and manufacturing, electronics, medicine and health care, environment, energy, chemicals, biotechnology, agriculture, information technology, and national security could be as significant for the 21st century as the combined influences of microelectronics, biotechnology, and information technology were for the 20th century.

(3) Long-term, high-risk research is necessary to create breakthroughs in technology.

(4) Such research requires government funding since the benefits are too distant or uncertain for industry alone to support, and the Federal government can play an important role in the development of nanotechnology, as it will take many years of sustained investment for this field to achieve maturity.

(5) Advancements in nanotechnology stemming from Federal investments in fundamental research and subsequent private sector development likely will

create technologies that support the work and improve the efficiency of the Federal government, and contribute significantly to the efforts of the government's mission agencies.

(6) According to various estimates, including those of the National Science Foundation, the market for nanotechnology products and services in the United States alone could reach over $1 trillion later this century.

(7) Mastering nanotechnology will require a unique skill set for scientists and engineers that combine chemistry, physics, materials science, and information science.

(8) Funding in these critical areas has been flat for many years and as a result fewer young people are electing to go into these areas in graduate schools throughout the Nation, a trend which will have to reverse if we hope to develop the next generation of skilled workers with multidisciplinary perspectives necessary for the development of nanotechnology.

(9) Research on nanotechnology creates unprecedented capabilities to alter ourselves and our environment and will give rise to a host of novel social, ethical, philosophical, and legal issues, and address-

ing these issues will require wide reflection and guidance that is responsive to the realities of the science, as well as additional research to predict, understand, and alleviate anticipated problems.

(10) Achieving and maintaining international leadership in nanotechnology is an important national security issue for the Nation, and in addition to the plethora of devices that can be developed for use by the Defense Department, there are many other ways in which nanotechnology has national security implications.

(11) The Executive Branch has previously established a National Nanotechnology Initiative (NNI) to coordinate Federal nanotechnology research and development programs and this initiative has contributed significantly to the development of nanotechnology.

(12) Authorizing legislation can serve to establish new technology goals and research directions, improve agency coordination and oversight mechanisms, help ensure optimal returns on investments, and simplify reporting, budgeting, and planning processes for the Executive Branch and Congress.

SEC. 3. ESTABLISHMENT.

There is established the Nanoscience and Nanotechnology Advisory Board (in this Act referred to as the ''Advisory Board''). The Advisory Board shall operate in coordination with the White House Office of Science and Technology Policy, and shall provide advice to the President and the National Science and Technology Council on research investment policy, strategy, program goals, and management processes relating to nanoscience and nanotechnology.

SEC. 4. MEMBERSHIP.

(a) IN GENERAL.—The President, in consultation with the Director of the White House Office of Science and Technology Policy, shall establish procedures for the selection if individuals not employed by the Federal government who are qualified in the science of nanotechnology and other appropriate fields and shall, pursuant to such procedures, appoint up to 20 individuals to serve on the Advisory Board.

(b) MEMBERSHIP QUALIFICATIONS.—Members of the Advisory Board shall be appointed from among leaders from industry and academia having scientific, technical, social science, or research management credentials. Members shall hold a reasonable cross-section of views and expertise regarding societal, ethical, educational, legal, and workforce issues related to nanotechnology. In selecting

individuals to serve on the Advisory Board the President shall give due consideration to the recommendations of Congress, industry leaders, the scientific community (including the National Academy of Sciences), academia, the defense community, the education community, State and local governments, and other appropriate organizations.

(c) CHAIRPERSON.—The President shall designate a Chairperson who shall serve for a term of 3 years.

(d) TERMS.—Each member of the Advisory Board shall be appointed for a term of 1 to 3 years, as determined by the President upon appointment, and may be reappointed when their terms expire.

(e) VACANCIES.— A vacancy on the Advisory Board shall be filled in the same manner in which the original appointment was made.

(f) COMPENSATION.—Members shall serve without pay but shall receive travel expenses, including per diem in lieu of subsistence, in accordance with applicable provisions under subchapter I of chapter 57 of title 5, United States Code.

(g) MEETINGS.—The Advisory Board shall meet not less than 2 times per year, at the call of the Chairperson in consultation with the National Nanotechnology Coordination Office established under section 5 of this Act.

SEC. 5. NATIONAL NANOTECHNOLOGY COORDINATION OFFICE.

(a) STAFF TO ASSIST ADVISORY BOARD.—The President shall establish a National Nanotechnology Coordination Office to provide necessary technical and administrative support to the Advisory Board and to coordinate Federal nanotechnology activities between Federal agencies, private sector industry, and academia.

(b) APPLICABILITY OF CERTAIN CIVIL SERVICE LAWS.—The staff of the National Nanotechnology Coordination Office established under subsection (a) shall be appointed subject to the provisions of title 5, United States Code, governing appointments in the competitive service, and shall be paid in accordance with the provisions of chapter 51 and subchapter III of chapter 53 of that title relating to classification and General Schedule pay rates.

SEC. 6. DUTIES.

The Advisory Board shall—

(1) advise the President and the National Science and Technology Council, and inform the Congress, on matters relating to the National Nanotechnology Program, including—

(A) the articulation of short-term (1 to 5 years), medium-range (6 to 10 years), and long-range (beyond 10 years) goals and objectives within the program;

(B) the need for emphasis on the long-range goals that move results out of the laboratory and into the service of society;

(C) the capabilities and research needs of the nanotechnology program;

(D) methods or approaches for achieving major program objectives;

(E) establishing and measuring performance goals using appropriate metrics;

(F) approaches to increase multi-agency investments in research at the intersection between nanoscale technology and biology;

(G) creation of programs for the invention and development of new instruments for nanoscience and the establishment of centers of excellence where these instruments can be used by a number of scientists, faculty, and students;

(H) approaches to stimulate and nurture industrial partnerships, both domestically and internationally, to help accelerate the commercialization of nanotechnology developments;

(I) approaches to addressing workforce issues through training grants, internships, fellowships, professional development, and retraining; and

(J) the need to coordinate the nanoscale research and development activities and strategies of the civilian Federal agencies and the Department of Defense to maintain a balanced, integrated, and fully-coordinated Federal nanotechnology research effort;

(2) consult with academic industrial entities, State and local governments and agencies, and other appropriate entities conducting research on and using nanotechnology; and

(3) ensure that the Federal nanotechnology program considers fully the societal implications of nanoscale science and technology.

SEC. 7. REPORTS.

The Advisory Board shall transmit an annual report to the President, the heads of each agency involved in the nanotechnology program, the Committee on Science of the House of Representatives, and the Committee on Commerce, Science, and Transportation of the Senate. The annual report shall include—

(1) a review of the program's technical success in achieving the stated goals and grand challenges according to the metrics established by the program and Advisory Panel;

(2) a review of the program's management and coordination among civilian Federal agencies; between these agencies and the Department of Defense; and between state, local, international, and private sector efforts in nanotechnology research and development; as well as how this coordination supports the goals and the mission needs of the entities involved;

(3) a review of the funding levels by each agency for the program's activities and their ability to achieve the program's stated goals and grand challenges;

(4) a review of the balance in the program's portfolio and components across agencies and disciplines;

(5) an assessment of the degree of participation in the program by minority serving institutions and institutions located in States participating in National Science Foundation's Experimental Program to Stimulate Competitive Research (EPSCoR);

(6) a review of policy issues resulting from advancements in nanotechnology and its effects on the scientific enterprise, commerce, workforce, competitiveness, national security, medicine, and government operations;

(7) recommendations for new program goals and grand challenges;

(8) recommendations for new research areas, partnerships, coordination and management mechanisms, or programs to be established to achieve the program's stated goals and grand challenges;

(9) recommendations for new investments by each participating agency in each program funding area for the 5–year period following the delivery of the report;

(10) reviews and recommendations regarding other issues deemed pertinent or specified by the panel; and

(11) a technology transition study which includes an evaluation of the Federal nanotechnology research and development program's success in transitioning its research, technologies, and concepts into commercial and military products, including—

(A) examples of successful transition of research, technologies, and concepts from the Federal nanotechnology research and development program into commercial and military products;

(B) best practices of universities, government, and industry in promoting efficient and

rapid technology transition in the nanotechnology sector;

(C) barriers to efficient technology transition in the nanotechnology sector, including, but not limited to, standards, pace of technological change, qualification and testing of research products, intellectual property issues, and Federal funding; and

(D) recommendations for government sponsored activities to promote rapid technology transition in the nanotechnology sector.

SEC. 9. TERMINATION.

Section 14(a)(2)(B) of the Federal Advisory Committee Act (5 U.S.C. App.; relating to the termination of advisory committees) shall not apply to this Act.

SEC. 10. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated such sums as may be necessary to carry out this Act.

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