Simmons	Tauzin	Wamp
Simpson	Taylor (MS)	Waters
Skelton	Terry	Watson
Slaughter	Thompson (CA)	Watt
Smith (NJ)	Thompson (MS)	Waxman
Smith (TX)	Tierney	Weiner
Smith (WA)	Towns	Weldon (PA)
Snyder	Turner (OH)	Weller
Solis	Turner (TX)	Wexler
Spratt	Udall (CO)	Whitfield
Stark	Udall (NM)	Wicker
Stenholm	Upton	Wilson (NM)
Strickland	Van Hollen	Wolf
Stupak	Velazquez	Woolsey
Sullivan	Visclosky	Wu
Sweeney	Vitter	Wynn
Tanner	Walden (OR)	
Tauscher	Walsh	

NAYS—64

Baker	Garrett (NJ)	Radanovich
Bartlett (MD)	Goss	Rohrabacher
Barton (TX)	Hart	Sensenbrenner
Biggert	Hefley	Sessions
Blackburn	Hensarling	Shadegg
Bonner	Herger	Shimkus
Burgess	Hoekstra	Smith (MI)
Cannon	Hostettler	Souder
Cantor	Hunter	Stearns
Coble	Hyde	Tancredo
Collins	Johnson, Sam	Taylor (NC)
Crane	Jones (NC)	Thomas
Culberson	King (IA)	Thornberry
DeLay	Kingston	Tiahrt
Diaz-Balart, M.	Linder	Tiberi
Doolittle	Miller, Gary	Toomey
Dreier	Musgrave	Weldon (FL)
Duncan	Nunes	Wilson (SC)
Everett	Oxley	Young (AK)
Feeney	Paul	Young (FL)
Flake	Pence	
Franks (AZ)	Pitts	

NOT VOTING—10

Buyer	Davis (IL)	Pomeroy
Carson (OK)	DeMint	Sherman
Cubin	Fletcher	
Davis (FL)	Gephardt	

ANNOUNCEMENT BY THE SPEAKER PRO TEMPORE

The SPEAKER pro tempore (during the vote). Members are advised there are 2 minutes left in this vote.

□ 1430

Mr. TERRY changed his vote from ''nay'' to ''yea.''

So the motion to instruct was agreed to.

The result of the vote was announced as above recorded.

A motion to reconsider was laid on the table.

ANNOUNCEMENT BY THE SPEAKER PRO TEMPORE

The SPEAKER pro tempore (Mr. TERRY). Pursuant to clause 8 of rule XX, the Chair will postpone further proceedings today on motions to suspend the rules on which a recorded vote or the yeas and nays are ordered, or on which the vote is objected to under clause 6 of rule XX.

Record votes on postponed questions will be taken later.

21ST CENTURY NANOTECHNOLOGY RESEARCH AND DEVELOPMENT ACT

Mr. BOEHLERT. Mr. Speaker, I move to suspend the rules and pass the Senate bill (S. 189) to authorize appropriations for nanoscience, nanoengineering, and nanotechnology research, and for other purposes.

The Clerk read as follows:

S. 189

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 ''21st Century Nanotechnology Research and Development Act''.

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;

(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);

(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;

(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.

SEC. 5. TRIENNIAL EXTERNAL REVIEW OF THE NATIONAL NANOTECHNOLOGY PROGRAM.

(a) IN GENERAL.—The Director of the National Nanotechnology Coordination Office shall enter into an arrangement with the National Research Council of the National Academy of Sciences to conduct a triennial evaluation of the Program, including—

(1) an evaluation of the technical accomplishments of the Program, including a review of whether the Program has achieved the goals under the metrics established by the Council;

(2) a review of the Program's management and coordination across agencies and disciplines;

(3) a review of the funding levels at each agency for the Program's activities and the ability of each agency to achieve the Program's stated goals with that funding;

(4) an evaluation of the Program's success in transferring technology to the private sector;

(5) an evaluation of whether the Program has been successful in fostering interdisciplinary research and development;

(6) an evaluation of the extent to which the Program has adequately considered ethical, legal, environmental, and other appropriate societal concerns;

(7) recommendations for new or revised Program goals;

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

(9) recommendations on policy, program, and budget changes with respect to nanotechnology research and development activities;

(10) recommendations for improved metrics to evaluate the success of the Program in accomplishing its stated goals;

(11) a review of the performance of the National Nanotechnology Coordination Office and its efforts to 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;

(12) an analysis of the relative position of the United States compared to other nations with respect to nanotechnology research and development, including the identification of any critical research areas where the United States should be the world leader to best achieve the goals of the Program; and

(13) an analysis of the current impact of nanotechnology on the United States economy and recommendations for increasing its future impact.

(b) STUDY ON MOLECULAR SELF-ASSEMBLY.—As part of the first triennial review conducted in accordance with subsection (a), the National Research Council shall conduct a one-time study to determine the technical feasibility of molecular self-assembly for the manufacture of materials and devices at the molecular scale.

(c) STUDY ON THE RESPONSIBLE DEVELOPMENT OF NANOTECHNOLOGY.—As part of the first triennial review conducted in accordance with subsection (a), the National Research Council shall conduct a one-time study to assess the need for standards, guidelines, or strategies for ensuring the responsible development of nanotechnolgy, including, but not limited to—

(1) self-replicating nanoscale machines or devices;

(2) the release of such machines in natural environments;

(3) encryption;

(4) the development of defensive technologies;

(5) the use of nanotechnology in the enhancement of human intelligence; and

(6) the use of nanotechnology in developing artificial intelligence.

(d) EVALUATION TO BE TRANSMITTED TO CONGRESS.—The Director of the National Nanotechnology Coordination Office shall transmit the results of any evaluation for which it made arrangements under subsection (a) to the Advisory Panel, the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science upon receipt. The first such evaluation shall be transmitted no later than June 10, 2005, with subsequent evaluations transmitted to the Committees every 3 years thereafter.

SEC. 6. AUTHORIZATION OF APPROPRIATIONS.

(a) NATIONAL SCIENCE FOUNDATION.—There are authorized to be appropriated to the Director of the National Science Foundation to carry out the Director's responsibilities under this Act—

(1) $385,000,000 for fiscal year 2005;

(2) $424,000,000 for fiscal year 2006;

(3) $449,000,000 for fiscal year 2007; and

(4) $476,000,000 for fiscal year 2008.

(b) DEPARTMENT OF ENERGY.—There are authorized to be appropriated to the Secretary of Energy to carry out the Secretary's responsibilities under this Act—

(1) $317,000,000 for fiscal year 2005;

(2) $347,000,000 for fiscal year 2006;

(3) $380,000,000 for fiscal year 2007; and

(4) $415,000,000 for fiscal year 2008.

(c) NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.—There are authorized to be appropriated to the Administrator of the National Aeronautics and Space Administration to carry out the Administrator's responsibilities under this Act—

(1) $34,100,000 for fiscal year 2005;

(2) $37,500,000 for fiscal year 2006;

(3) $40,000,000 for fiscal year 2007; and

(4) $42,300,000 for fiscal year 2008.

(d) NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.—There are authorized to be appropriated to the Director of the National Institute of Standards and Technology to carry out the Director's responsibilities under this Act—

(1) $68,200,000 for fiscal year 2005;

(2) $75,000,000 for fiscal year 2006;

(3) $80,000,000 for fiscal year 2007; and

(4) $84,000,000 for fiscal year 2008.

(e) ENVIRONMENTAL PROTECTION AGENCY.—There are authorized to be appropriated to the Administrator of the Environmental Protection Agency to carry out the Administrator's responsibilities under this Act—

(1) $5,500,000 for fiscal year 2005;

(2) $6,050,000 for fiscal year 2006;

(3) $6,413,000 for fiscal year 2007; and

(4) $6,800,000 for fiscal year 2008.

SEC. 7. DEPARTMENT OF COMMERCE PROGRAMS.

(a) NIST PROGRAMS.—The Director of the National Institute of Standards and Technology shall—

(1) as part of the Program activities under section 2(b)(7), establish a program to conduct basic research on issues related to the development and manufacture of nanotechnology, including metrology; reliability and quality assurance; processes control; and manufacturing best practices; and

(2) utilize the Manufacturing Extension Partnership program to the extent possible to ensure that the research conducted under paragraph (1) reaches small- and medium-sized manufacturing companies.

(b) CLEARINGHOUSE.—The Secretary of Commerce or his designee, in consultation with the National Nanotechnology Coordination Office and, to the extent possible, utilizing resources at the National Technical Information Service, shall establish a clearinghouse of information related to commercialization of nanotechnology research, including information relating to activities by regional, State, and local commercial nanotechnology initiatives; transition of research, technologies, and concepts from Federal nanotechnology research and development programs into commercial and military products; best practices by government, universities and private sector laboratories transitioning technology to commercial use; examples of ways to overcome barriers and challenges to technology deployment; and use of manufacturing infrastructure and workforce.

SEC. 8. DEPARTMENT OF ENERGY PROGRAMS.

(a) RESEARCH CONSORTIA.—

(1) DEPARTMENT OF ENERGY PROGRAM.—The Secretary of Energy shall establish a program to support, on a merit-reviewed and competitive basis, consortia to conduct interdisciplinary nanotechnology research and development designed to integrate newly developed nanotechnology and microfluidic tools with systems biology and molecular imaging.

(2) AUTHORIZATION OF APPROPRIATIONS.—Of the sums authorized for the Department of Energy under section 6(b), $25,000,000 shall be used for each fiscal year 2005 through 2008 to carry out this section. Of these amounts, not less than $10,000,000 shall be provided to at least 1 consortium for each fiscal year.

(b) RESEARCH CENTERS AND MAJOR INSTRUMENTATION.—The Secretary of Energy shall carry out projects to develop, plan, construct, acquire, operate, or support special equipment, instrumentation, or facilities for investigators conducting research and development in nanotechnology.

SEC. 9. ADDITIONAL CENTERS.

(a) AMERICAN NANOTECHNOLOGY PREPAREDNESS CENTER.—The Program shall provide for the establishment, on a merit-reviewed and competitive basis, of an American Nanotechnology Preparedness Center which shall—

(1) conduct, coordinate, collect, and disseminate studies on the societal, ethical, environmental, educational, legal, and workforce implications of nanotechnology; and

(2) identify anticipated issues related to the responsible research, development, and application of nanotechnology, as well as provide recommendations for preventing or addressing such issues.

(b) CENTER FOR NANOMATERIALS MANUFACTURING.—The Program shall provide for the establishment, on a merit reviewed and competitive basis, of a center to—

(1) encourage, conduct, coordinate, commission, collect, and disseminate research on new manufacturing technologies for materials, devices, and systems with new combinations of characteristics, such as, but not limited to, strength, toughness, density, conductivity, flame resistance, and membrane separation characteristics; and

(2) develop mechanisms to transfer such manufacturing technologies to United States industries.

(c) REPORTS.—The Council, through the Director of the National Nanotechnology Coordination Office, shall submit to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science—

(1) within 6 months after the date of enactment of this Act, a report identifying which agency shall be the lead agency and which other agencies, if any, will be responsible for establishing the Centers described in this section; and

(2) within 18 months after the date of enactment of this Act, a report describing how the Centers described in this section have been established.

SEC. 10. DEFINITIONS.

In this Act:

(1) ADVISORY PANEL.—The term ''Advisory Panel'' means the President's National Nanotechnology Advisory Panel established or designated under section 4.

(2) NANOTECHNOLOGY.—The term ''nanotechnology'' means the science and technology that will enable one to understand, measure, manipulate, and manufacture at the atomic, molecular, and supramolecular levels, aimed at creating materials, devices, and systems with fundamentally new molecular organization, properties, and functions.

(3) PROGRAM.—The term ''Program'' means the National Nanotechnology Program established under section 2.

(4) COUNCIL.—The term ''Council'' means the National Science and Technology Council or an appropriate subgroup designated by the Council under section 2(c).

(5) ADVANCED TECHNOLOGY USER FACILITY.—The term ''advanced technology user facility'' means a nanotechnology research and development facility supported, in whole or in part, by Federal funds that is open to all United States researchers on a competitive, merit-reviewed basis.

(6) PROGRAM COMPONENT AREA.—The term ''program component area'' means a major subject area established under section 2(c)(2) under which is grouped related individual projects and activities carried out under the Program.

The SPEAKER pro tempore. Pursuant to the rule, the gentleman from New York (Mr. BOEHLERT) and the gentleman from Texas (Mr. HALL) each will control 20 minutes.

The Chair recognizes the gentleman from New York (Mr. BOEHLERT).

GENERAL LEAVE

Mr. BOEHLERT. Mr. Speaker, I ask unanimous consent that all Members may have 5 legislative days within which to revise and extend their remarks and include extraneous material on S. 189.

The SPEAKER pro tempore. Is there objection to the request of the gentleman from New York?

There was no objection.

Mr. BOEHLERT. Mr. Speaker, I yield myself such time as I may consume.

Mr. Speaker, I rise in support of S.189, the Nanotechnology and Research Development Act. This bill began its life in the House as H.R. 766, which I introduced with my colleague, the gentleman from California (Mr. HONDA) and which the House passed back in May by the overwhelming margin of 405 to 19.

The text before us today reflects 2 months of negotiations with the Senate to come up with a final version of the bill. The Senate amended S. 189 with the text of that agreement, and it is that compromise we will be sending on to the President today.

This bill is endorsed by a wide variety of high technology and academic organizations including the National Association of Manufacturers, the Semiconductor Industry Association,

Intel, IBM, Hewlett-Packard, and the Association of American Universities.

The idea behind this bill is simple yet powerful. The American economy will grow bigger if America's scientists and engineers focus on things that are smaller. The U.S. is the leader in nanotechnology and New York under Governor Pataki is in the front ranks of that world leadership. We must remain in the front as this new field starts remaking the marketplace.

This bill has four salient aspects designed to help ensure continued U.S. leadership: It authorizes the President's National Nanotechnology Initiative; it emphasizes the need for broad interagency participation and stronger interagency coordination, especially in the presentation of program budgets; it underscores the need for interdisciplinary research and for shepherding research from the laboratory to the marketplace; and it ensures that research and public discussion on the societal and ethical consequences of nanotechnology will go on concurrent with, and as part of technology research and development.

The nanotechnology program will be a model of government, industry, university, cooperation, coordination and interdisciplinary research with public involvement.

I wanted to thank the many Members who helped contribute to this bill but particularly to my cosponsor, the gentleman from California (Mr. HONDA) and my partner, the ranking member, the gentleman from Texas (Mr. HALL), as well as the chairman of our Subcommittee on Research, the gentleman from Michigan (Mr. SMITH) and his ranking member, the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON).

Last but not least, I want to thank my staff who labored so long and hard on this bill and on the many hearings on the subject. Peter Rooney, Dan Byers and Elizabeth Grossman deserve special recognition, but the entire staff of the committee minority and majority has been actively engaged.

Mr. Speaker, I reserve the balance of my time.

Mr. HALL. Mr. Speaker, I yield myself such time as I may consume.

Mr. Speaker, I, of course, rise in support of the Nanotechnology Research and Development Act, Senate 189, which as the chairman has so ably set forth, authorizes the National Nanotechnology Initiative as part of the President's budget request. This interagency research program is going to have enormous consequences for the future of our entire Nation.

S. 189 is a compromise measure worked out with the other body. It is largely based on H.R. 766 which passed the House in May by a vote of 405 to 19. The bipartisan House bill was introduced by Committee on Science chairman, the gentleman from New York (Mr. BOEHLERT) and the gentleman from California (Mr. HONDA) and cosponsored by Members from both sides of the aisle.

I want to acknowledge the leadership of the chairman, the gentleman from New York (Mr. BOEHLERT) and the gentleman from California (Mr. HONDA) in crafting the original version of the legislation. I want to thank the gentleman from New York (Mr. BOEHLERT) for working cooperatively day in and day with Democratic Members in developing the bill and arriving at the final bicameral compromise.

I also want to thank my colleague, the gentleman from California (Mr. HONDA) for his hard work on the bill. His efforts have led to a strengthening of the outside advisory mechanism for this research and also led to a process to help facilitate the transfer of research innovations to commercial applications.

The potential reach and impact of nanotechnology argues for careful attention to how it might affect society, and in particular, attention to potential downsides of the technology.

I believe it is important for the successful development of nanotechnology that problems be addressed from the beginning in a straightforward and open way.

Consequently, I am pleased that the bill imposes requirements to provide understanding of potential problems arising from the nanotechnology applications. I particularly want to compliment my colleague, the gentleman from California (Mr. SHERMAN) and my colleague, the gentleman from Texas (Mr. BELL) for championing provisions to address this issue, including annual reporting requirements to allow Congress to track the agencies' activities that are related to societal and ethical concerns.

This annual report will include a description of the nature of the activities being supported and how the activities relate to the overall objectives of the research initiative. An important goal of the bill is to integrate research on societal and ethical concerns with research and development efforts to advance nanotechnology.

The bill also addresses the need to open lines of communication between the research community and the public to make clear that potential safety risks of nanotechnology are being explored and not ignored.

I want to especially acknowledge the efforts of my colleague, the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON) who introduced provisions that will provide for input from and outreach to the public from such mechanisms as citizen panels and consensus conferences.

Senate 189 authorizes appropriations over 4 years for nanotechnology research and development at five agencies: The National Science Foundation, the Department of Energy, NASA, National Institute of Standards and Technology, and EPA. In addition to setting funding goals, the bill puts in place mechanisms for planning and coordinating and implementation of the interagency research program.

The bill also includes provisions for outside, expert advice to help guide the research program and ensure its relevance to emerging technological opportunities and to the industry. The advisory committee required by the bill is charged to review the goals, content, implementation and administration of the nanotechnology initiative.

Mr. Speaker, we now stand at the threshold of an age in which materials and devices can be fashioned atom by atom. The capability will have enormous consequences for the information industry, for manufacturing, and for medicine and health. Indeed, the scope of this technology is so broad as to leave virtually no product untouched.

The measure before us will help ensure that the Nation maintains a vigorous research effort in a technology area that is emerging as increasingly important for the economy and also for national security. It enjoys widespread support from the research community and industry. I urge my colleagues to support its final passage.

Mr. Speaker, I reserve the balance of my time.

Mr. BOEHLERT. Mr. Speaker, I yield 3 minutes to the gentlewoman from Illinois (Mrs. BIGGERT), the distinguished chair of the Subcommittee on Energy.

Mrs. BIGGERT. Mr. Speaker, I thank the gentleman for yielding me time.

Mr. Speaker, as an original cosponsor of H.R. 766, the Nanotechnology Research and Development Act that was approved by the House last May, I rise to express my strong support for this compromise legislation negotiated by the House Committee on Science.

I want to commend the chairman of the Committee on Science, the gentleman from New York (Mr. BOEHLERT) for working with the Senate to develop such a comprehensive and forward-looking piece of legislation as S. 189, the 21st Century Nanotechnology Research and Development Act.

Unlike so many other complex scientific concepts, nanotechnology is actually something that we should all be able to grasp. Most Americans learn in grade school and high school that atoms are the building blocks of nature. In the years since I have been in school, incredible machines have allowed to us see every one of those atoms.

The challenge now is to develop the tools, equipment and expertise to manipulate those atoms, and build new materials and new machines, one molecule at a time.

This bill takes up that challenge, ensuring coordination and collaboration among the many Federal agencies engaged in nanotech research. Unlike other research efforts, some of which are undertaken for the sake of science and our understanding of it, the broad and practical applications of nanotechnology, and its benefits, can be described in layman's terms.

Here are just a few benefits: Sensing the presence of unwanted pathogens in blood; improving the efficiency of electricity distribution; dispensing medications; cleaning polluted soil and water,

or building the next generation of space craft.

I do not think I am being overly optimistic. Just consider how far we have come since the creation of the first microchip. Sixty percent of Americans now own a personal computer or a laptop, and 90 percent of them use the Internet. The public, private, and nonprofit sectors invested in research that reduced the size of the microchip while increasing its speeds exponentially.

This investment was made because the applications were many and the possibilities endless. After all, microchips are now found in cars, pacemakers, watches, sewing machines, and just about every household appliance.

With all its potential applications, nanotechnology could have an equal, if not greater, impact than the microchip on our lives, our wealth, our health and safety, our environment, and our security at home and abroad.

All levels of government, academia, and the industry recognize the potential of nanotechnology, as well as the benefits of collaborating to realize that potential. Nanotechnology could very well be the catalyst for national competitiveness for the next 50 years. In countless ways, our lives will be better as a result of coordinated investment in nanoscience R&D.

I urge my colleagues to join me in supporting this nanotechnology research and development legislation.

Mr. HALL. Mr. Speaker, I yield 3 minutes to the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON), the ranking member on Subcommittee on Research.

Ms. EDDIE BERNICE JOHNSON of Texas. Mr. Speaker, I thank the leadership of the committee and the subcommittee. I want to express my appreciation for the camaraderie of which we work together on the committee. I rise together in support of S. 189, the Nanotechnology Research and Development Act.

The emerging fields of nanoscale science, engineering and technology are leading to unprecedented understanding and control over the basic building blocks of properties of all natural and man-made things.

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Nanotechnology has the potential for enormous consequences, both technological and societal. This technology could result in new materials with prescribed properties not otherwise possible, information processing that far exceeds our current capabilities, and medical devices that could provide revolutionary advances in health care and dramatically increase our lifespan.

Nanotechnology has a great potential for America's leadership around the world. As America enters the 21st century, it is important that we lead the world in developing and commercializing new technologies and perhaps restore many of the jobs that we have lost.

I am very pleased that this bill includes an amendment that I introduced when we voted on H.R. 766 back in May. This amendment, under program ''activities on societal and ethical concerns,'' requires public input and outreach to the public to be integrated into the program through regular and ongoing public discussions, including citizens panels, consensus conferences, and educational events.

The views of the general public, who will bear the brunt of the consequences, both good and bad, should have input in the planning and execution of the research program. Taxpayers are paying for development of this technology. They have a right to have a voice in the research agenda.

I agree with that assessment that nanotechnology is one of the most promising and exciting fields of science today.

I am proud to be a cosponsor of this legislation and proud to say that I believe that the area which I represent will have some leading research in this area, with Nobel laureates. As I vote for its approval, I would urge my colleagues to do the same.

Mr. BOEHLERT. Mr. Speaker, I yield 3 minutes to the distinguished gentleman from Michigan (Mr. SMITH), the chairman of the Subcommittee on Research.

Mr. SMITH of Michigan. Mr. Speaker, first, let me compliment the gentleman from California (Mr. HONDA) and the chairman for introducing this legislation. Nanotechnology is the science of the very small, and I thought I might use a visual aid today. So if my colleagues would take a hair out of their heads and pretend that it is hollow, they could fit 100,000 strands of nano-technology inside that hollow hair. It is amazing technology.

Nanotechnology is exciting to me because it has so much potential for the future. Already today, computers and disk drives contain nanotechnology. Soon, most computers and telecommunications hardware will be based on it. In the not-too-distant future, nanotechnology will begin to transform biology, medicine, military systems, energy systems.

Nanotechnology is poised to become the next great vehicle of growth for the American economy; and like biotechnology was 10, 12, 15 years ago, nanotechnology has reached a critical growth stage. The 21st Century Research and Development Act intensifies Federal support for nanoresearch and experimentation and will prove, I think, critical to unlocking the tremendous potential that nanotechnology presents.

In conclusion, let me just say that nanotechnology holds incredible promise in a wide range of scientific disciplines; and while there are some nanotechnology products on the market today, the industry is very close to achieving several important breakthroughs that include revolutionary new applications in materials science, in manufacturing. So if we are going to stay competitive in the world market, and that means having our standard of living above everybody else, then we are going to have to take advantage of this kind of technology that can improve the way we produce products, but also improve those products that we are selling and allow us to be competitive on a world market.

In conclusion, I would hope everybody would unanimously not only support this bill but the kind of funding that is necessary to make sure that the United States stays on top in nanoresearch.

I thank the chairman for yielding me the time.

Mr. HALL. Mr. Speaker, I yield 4 minutes to the gentleman from California (Mr. HONDA), who is an original Democratic cosponsor of the House bill.

(Mr. HONDA asked and was given permission to revise and extend his remarks.)

Mr. HONDA. Mr. Speaker, I rise in support of S. 189, the 21st Century Nanotechnology Research and Development Act. I thank the distinguished leaders of the Committee on Science, the gentleman from New York (Chairman BOEHLERT) and the gentleman from Texas (Ranking Member HALL) for working with me on the House version of this bipartisan bill, as well as Senators ALLEN and WYDEN for their leadership on the Senate version of this legislation.

I would also like to thank my personal staff and the committee staff for all their hard work in ironing out the differences with the other body that has allowed us to get to where we are today on this important legislation.

Nanotechnology, which is the ability of scientists and engineers to manipulate matter at the level of single atoms and molecules, can be revolutionary because it is an enabling technology and fundamentally changes the way many items are designed and manufactured. Most Members of this body had probably never heard of the word ''nanotechnology'' before we first considered legislation in May, but their support for the bill then and in the following months suggests that they have come to appreciate the impact this field will have.

The long-term, sometimes high-risk nature of the research that will be needed to bring nanotechnology to maturity requires the support of, and significant investment by, the Federal Government. This bill provides three things. It puts the National Technology Initiative into law and authorizes $3.7 billion in spending over the next 4 years for the program.

This investment in the future is critical because experts agree that investing in innovation is the key to a vibrant U.S. manufacturing base and continued generation of new jobs. Nanotechnology is one of the areas of innovation most worthy of investment, as it has the potential to create entirely new industries and radically transform the basis of competition in others.

The bill also contains a number of other provisions to make improvements in our national technology initiative. It requires the creation of research centers, education training efforts, research into the societal and ethical consequence of nanotechnology, and efforts to transfer technology into the marketplace. Importantly, the bill includes a series of coordination offices, advisory committees and regular programming to ensure that taxpayer money is being spent wisely and efficiently.

This is an excellent bill that I am proud to have had the chance to work on, and I urge my colleagues to support it.

Once again, let me again repeat my gratitude and thanks to the leadership of the gentleman from New York (Mr. BOEHLERT), our chairman, and the gentleman from Texas (Mr. HALL), our ranking member.

Mr. BOEHLERT. Mr. Speaker, let me say I want to thank the gentleman from California (Mr. HONDA) for his partnership, and it has been a cooperative effort; and all of the efforts on the Committee on Science reflect that cooperation.

Mr. Speaker, it is my pleasure to yield 3 minutes to the distinguished gentleman from Texas (Mr. BURGESS), who has been a real leader for our side on this issue of nanotechnology.

Mr. BURGESS. Mr. Speaker, I thank my chairman for yielding me time.

It is indeed a pleasure to be here this afternoon to support Senate bill 189, the 21st Century National Nanotechnology Research and Development Act.

Nanotechnology is a very promising future technology. From materials to computers, medicine, defense, energy, the possibilities are limitless. We are moving from an age of miniaturization to an age of self-replication.

The House overwhelmingly approved this bill's companion, H.R. 766, and I am hopeful that the House will once again make a bipartisan commitment to increasing resources for nanotechnology research and development. The development of nanotechnology is not only important to my corner of the country but for every human on the planet.

The National Science Foundation estimates that in a little over a decade nanotechnology will positively impact the global market by approximately $1 trillion. This bill will ensure that the United States continues to be a leader in nanotechnology research.

This bill is especially important to my academic institutions in my district, especially the University of North Texas. Mr. Speaker, as the ranking member knows, everything is bigger in Texas unless it is better to be smaller, in which case everything is smaller in Texas.

Beginning last fall, the University of North Texas began laboratory renovation and equipment purchases for the Department of Material Science, including research space for their Laboratory for Electronic Materials and Devices and the establishment of a nanometrology laboratory, the first in the Nation.

This center, the Center for Advanced Research and Technology, is a unique collaboration between academic and corporate partners in the north Texas area, designed to develop new nanotechnology applications. The development of the nanometrology laboratory will provide remote access by researchers throughout the United States through state-of-the-art materials characterization.

These facility and research capabilities are important to the future competitiveness and the value of American materials worldwide, and this bill will help further those developments.

This comprehensive approach taken by Senate bill 189 to raise the profile of nanometrology and nanotechnology among the general public and increased resources for academic institutions will ensure that our country, America, is the leader in this field for years to come.

Mr. HALL. Mr. Speaker, I yield 3 minutes to the gentlewoman from California (Ms. LOFGREN), a long-time leader in high-tech issues from the Silicon Valley.

Ms. LOFGREN. Mr. Speaker, I am happy to strongly support S. 189, the 21st Century Nanotechnology Research and Development Act.

I represent, as the gentleman from Texas (Mr. HALL) just said, an area, Silicon Valley, that often leads this Nation in fostering cutting-edge research in technology and in manufacturing. Indeed, a great deal of much important research involving nanotechnology is being done right now at NASA Ames Research Park in California.

Mr. Speaker, I would like to take this opportunity to remind us all of the importance of supporting scientific research and its interaction with our society and our economy. With that in mind, Mr. Speaker, S. 189 is an important first step that will ensure that the United States will continue to play a pioneering role in the area of nanotechnology and its revolutionary potential to transform the manufacturing sector in our Nation, not to mention energy, health care, and areas that we can only dream of today.

I congratulate the gentleman from New York (Mr. BOEHLERT) and my Bay Area colleague, the gentleman from California (Mr. HONDA), for their bipartisan efforts in drafting and perfecting and passing H.R. 766 in the House which in large part forms the basis of this bill that we are about to pass.

The future benefits of research in nanotechnology, fusion energy, and other types of research depend on us acting with great foresight. S. 189 represents a great first step on that path; and as my colleague, the gentleman from California (Mr. HONDA), said recently at a nanotechnology conference that he helped organize at NASA Ames Research Park, nanotechnology is the next big thing.

Mr. HALL. Mr. Speaker, I have no further requests for time, and I yield back the balance of my time.

Mr. BOEHLERT. Mr. Speaker, I have no further requests for time; but before I yield back, I urge everyone to take the enlightened approach and support this very important initiative. I yield back the balance of my time.

The SPEAKER pro tempore (Mr. TERRY). The question is on the motion offered by the gentleman from New York (Mr. BOEHLERT) that the House suspend the rules and pass the Senate bill, S. 189.

The question was taken; and (two-thirds having voted in favor thereof) the rules were suspended and the Senate bill was passed.

A motion to reconsider was laid on the table.

NOTICE

Incomplete record of House proceedings. Except for concluding business which follows, today's House proceedings will be continued in the next issue of the Record.

CONFERENCE REPORT ON H.R. 1904, HEALTHY FORESTS RESTORATION ACT OF 2003

Mr. GOODLATTE (during debate on the Inslee motion to instruct conferees on H.R. 1) submitted the following conference report and statement on the bill (H.R. 1904) to improve the capacity of the Secretary of Agriculture and the Secretary of the Interior to plan and conduct hazardous fuels reduction projects on National Forest System lands and Bureau of Land Management lands aimed at protecting communities, watersheds, and certain other at-risk lands from catastrophic wildfire, to enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape, and for other purposes:

CONFERENCE REPORT (H. REPT. 108–386)

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 1904), to improve the capacity of the Secretary of Agriculture and the Secretary of the Interior to plan and conduct hazardous fuels reduction projects on National Forest System lands and Bureau of Land Management lands aimed at protecting communities, watersheds, and certain other at-risk lands from catastrophic wildfire, to enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate to the text of the bill and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment, insert the following:

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''Healthy Forests Restoration Act of 2003''.

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

SEC. 2. PURPOSES.

The purposes of this Act are—

(1) to reduce wildfire risk to communities, municipal water supplies, and other at-risk Federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects;

(2) to authorize grant programs to improve the commercial value of forest biomass (that otherwise contributes to the risk of catastrophic fire or insect or disease infestation) for producing electric energy, useful heat, transportation fuel, and petroleum-based product substitutes, and for other commercial purposes;

(3) to enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape;

(4) to promote systematic gathering of information to address the impact of insect and disease infestations and other damaging agents on forest and rangeland health;

(5) to improve the capacity to detect insect and disease infestations at an early stage, particularly with respect to hardwood forests; and

(6) to protect, restore, and enhance forest ecosystem components—

(A) to promote the recovery of threatened and endangered species;

(B) to improve biological diversity; and

(C) to enhance productivity and carbon sequestration.

SEC. 3. DEFINITIONS.

In this Act:

(1) FEDERAL LAND.—The term ''Federal land'' means—

(A) land of the National Forest System (as defined in section 11(a) of the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C 1609(a))) administered by the Secretary of Agriculture, acting through the Chief of the Forest Service; and

(B) public lands (as defined in section 103 of the Federal Land Policy and Management Act of 1976 (43 U.S.C 1702)), the surface of which is administered by the Secretary of the Interior, acting through the Director of the Bureau of Land Management.

(2) INDIAN TRIBE.—The term ''Indian tribe'' has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b).

TITLE I—HAZARDOUS FUEL REDUCTION ON FEDERAL LAND

SEC. 101. DEFINITIONS.

In this title:

(1) AT-RISK COMMUNITY.—The term ''at-risk community'' means an area—

(A) that is comprised of—

(i) an interface community as defined in the notice entitled ''Wildland Urban Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire'' issued by the Secretary of Agriculture and the Secretary of the Interior in accordance with title IV of the Department of the Interior and Related Agencies Appropriations Act, 2001 (114 Stat. 1009) (66 Fed. Reg. 753, January 4, 2001); or

(ii) a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal land;

(B) in which conditions are conducive to a large-scale wildland fire disturbance event; and

(C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event.

(2) AUTHORIZED HAZARDOUS FUEL REDUCTION PROJECT.—The term ''authorized hazardous fuel reduction project'' means the measures and methods described in the definition of ''appropriate tools'' contained in the glossary of the Implementation Plan, on Federal land described in section 102(a) and conducted under sections 103 and 104.

(3) COMMUNITY WILDFIRE PROTECTION PLAN.—The term ''community wildfire protection plan'' means a plan for an at-risk community that—

(A) is developed within the context of the collaborative agreements and the guidance established by the Wildland Fire Leadership Council and agreed to by the applicable local government, local fire department, and State agency responsible for forest management, in consultation with interested parties and the Federal land management agencies managing land in the vicinity of the at-risk community;

(B) identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment on Federal and non-Federal land that will protect 1 or more at-risk communities and essential infrastructure; and

(C) recommends measures to reduce structural ignitability throughout the at-risk community.

(4) CONDITION CLASS 2.—The term ''condition class 2'', with respect to an area of Federal land, means the condition class description developed by the Forest Service Rocky Mountain Research Station in the general technical report entitled ''Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management'' (RMRS–87), dated April 2000 (including any subsequent revision to the report), under which—

(A) fire regimes on the land have been moderately altered from historical ranges;

(B) there exists a moderate risk of losing key ecosystem components from fire;

(C) fire frequencies have increased or decreased from historical frequencies by 1 or more return intervals, resulting in moderate changes to—

(i) the size, frequency, intensity, or severity of fires; or

(ii) landscape patterns; and

(D) vegetation attributes have been moderately altered from the historical range of the attributes.

(5) CONDITION CLASS 3.—The term ''condition class 3'', with respect to an area of Federal land, means the condition class description developed by the Rocky Mountain Research Station in the general technical report referred to in paragraph (4) (including any subsequent revision to the report), under which—

(A) fire regimes on land have been significantly altered from historical ranges;

(B) there exists a high risk of losing key ecosystem components from fire;

(C) fire frequencies have departed from historical frequencies by multiple return intervals, resulting in dramatic changes to—

(i) the size, frequency, intensity, or severity of fires; or

(ii) landscape patterns; and

(D) vegetation attributes have been significantly altered from the historical range of the attributes.