110TH CONGRESS
1st Session
HOUSE OF REPRESENTATIVES
REPORT
110–115

TECHNOLOGY INNOVATION AND MANUFACTURING STIMULATION ACT OF 2007

APRIL 30, 2007.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. GORDON of Tennessee, from the Committee on Science and Technology, submitted the following

R E P O R T

[To accompany H.R. 1868]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 1868) to authorize appropriations for the National Institute of Standards and Technology for fiscal years 2008, 2009, and 2010, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

C O N T E N T S

59–006

I. AMENDMENT

The amendment is as follows:
Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "Technology Innovation and Manufacturing Stimulation Act of 2007".

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

TITLE I—AUTHORIZATION OF APPROPRIATIONS

SEC. 101. SCIENTIFIC AND TECHNICAL RESEARCH AND SERVICES.

(a) LABORATORY ACTIVITIES.—There are authorized to be appropriated to the Secretary of Commerce for the scientific and technical research and services laboratory activities of the National Institute of Standards and Technology—

(1) $470,879,000 for fiscal year 2008;
(2) $497,750,000 for fiscal year 2009; and
(3) $537,569,000 for fiscal year 2010.

(b) MALCOLM BALDRIGE NATIONAL QUALITY AWARD PROGRAM.—There are authorized to be appropriated to the Secretary of Commerce for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a)—

(1) $7,860,000 for fiscal year 2008;
(2) $8,096,000 for fiscal year 2009; and
(3) $8,339,000 for fiscal year 2010.

(c) CONSTRUCTION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary of Commerce for construction and maintenance of facilities of the National Institute of Standards and Technology—

(1) $93,865,000 for fiscal year 2008;
(2) $86,371,000 for fiscal year 2009; and
(3) $49,719,000 for fiscal year 2010.

SEC. 102. INDUSTRIAL TECHNOLOGY SERVICES.

There are authorized to be appropriated to the Secretary of Commerce for Industrial Technology Services activities of the National Institute of Standards and Technology—

(1) $222,968,000 for fiscal year 2008, of which—
(A) $110,000,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and
(B) $112,968,000 shall be for the Manufacturing Extension Partnership program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $1,000,000 shall be for the competitive grant program under section 25(f) of such Act;
(2) $263,505,000 for fiscal year 2009, of which—
(A) $141,500,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and
(B) $122,005,000 shall be for the Manufacturing Extension Partnership Program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $4,000,000 shall be for the competitive grant program under section 25(f) of such Act; and
(3) $282,266,000 for fiscal year 2010, of which—
(A) $150,500,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and
(B) $131,766,000 shall be for the Manufacturing Extension Partnership Program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $4,000,000 shall be for the competitive grant program under section 25(f) of such Act.

TITLE II—INNOVATION AND TECHNOLOGY POLICY REFORMS

SEC. 201. INSTITUTE-WIDE PLANNING REPORT.

Section 23 of the National Institute of Standards and Technology Act (15 U.S.C. 278i) is amended by adding at the end the following new subsections:

"(c) Concurrent with the submission to Congress of the President's annual budget request in the first year after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall transmit to the Congress a 3-year programmatic planning document for the Institute, including programs under the Scientific and Technical Research and Services, Industrial Technology Services, and Construction of Research Facilities functions.

"(d) Concurrent with the submission to the Congress of the President's annual budget request in each year after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall transmit to the Congress an update to the 3-year programmatic planning document transmitted under subsection (c), revised to cover the first 3 fiscal years after the date of that update.".

SEC. 202. REPORT BY VISITING COMMITTEE.

Section 10(h)(1) of the National Institute of Standards and Technology Act (15 U.S.C. 278(h)(1)) is amended—

(1) by striking "on or before January 31 in each year" and inserting "within 30 days after the submission to Congress of the President's annual budget request in each year"; and

(2) by adding to the end the following: "Such report also shall comment on the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).".

SEC. 203. MANUFACTURING EXTENSION PARTNERSHIP.

(a) MEP ADVISORY BOARD.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k) is amended by adding at the end the following new subsection:

"(e) MEP ADVISORY BOARD.—(1) There is established within the Institute a Manufacturing Extension Partnership Advisory Board (in this Act referred to as the 'MEP Advisory Board'). The MEP Advisory Board shall consist of 10 members broadly representative of stakeholders, to be appointed by the Director. At least 2 members shall be employed by or on an advisory board for the Centers, and at least 5 other

members shall be from United States small businesses in the manufacturing sector. No member shall be an employee of the Federal Government.

"(2)(A) Except as provided in subparagraph (B) or (C), the term of office of each member of the MEP Advisory Board shall be 3 years.

"(B) The original members of the MEP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

"(C) Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

"(D) Any person who has completed two consecutive full terms of service on the MEP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

"(3) The MEP Advisory Board shall meet no less than 2 times annually, and provide to the Director—

"(A) advice on Manufacturing Extension Partnership programs, plans, and policies;

"(B) assessments of the soundness of Manufacturing Extension Partnership plans and strategies; and

"(C) assessments of current performance against Manufacturing Extension Partnership program plans.

"(4) In discharging its duties under this subsection, the MEP Advisory Board shall function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.

"(5) The MEP Advisory Board shall transmit an annual report to the Secretary for transmittal to the Congress within 30 days after the submission to the Congress of the President's annual budget request in each year. Such report shall address the status of the Manufacturing Extension Partnership program and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).".

(b) ACCEPTANCE OF FUNDS.—Section 25(d) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(d)) is amended to read as follows:

"(d) ACCEPTANCE OF FUNDS.—In addition to such sums as may be appropriated to the Secretary and Director to operate the Centers program, the Secretary and Director also may accept funds from other Federal departments and agencies and under section 2(c)(7) from the private sector for the purpose of strengthening United States manufacturing. Such funds, if allocated to a Center or Centers, shall not be considered in the calculation of the Federal share of capital and annual operating and maintenance costs under subsection (c).".

(c) MANUFACTURING EXTENSION CENTER COMPETITIVE GRANT PROGRAM.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k), as amended by subsection (a) of this section, is further amended by adding at the end the following new subsection:

"(f) COMPETITIVE GRANT PROGRAM.—

"(1) ESTABLISHMENT.—The Director shall establish, within the Manufacturing Extension Partnership program under this section and section 26 of this Act, a program of competitive awards among participants described in paragraph (2) for the purposes described in paragraph (3).

"(2) PARTICIPANTS.—Participants receiving awards under this subsection shall be the Centers, or a consortium of such Centers.

"(3) PURPOSE.—The purpose of the program under this subsection is to develop projects to solve new or emerging manufacturing problems as determined by the Director, in consultation with the Director of the Manufacturing Extension Partnership program, the Manufacturing Extension Partnership Advisory Board, and small and medium-sized manufacturers. One or more themes for the competition may be identified, which may vary from year to year, depending on the needs of manufacturers and the success of previous competitions. These themes shall be related to projects associated with manufacturing extension activities, including supply chain integration and quality management, and including the transfer of technology based on the technological needs of manufacturers and available technologies from institutions of higher education, laboratories, and other technology producing entities, or extend beyond these traditional areas.

"(4) APPLICATIONS.—Applications for awards under this subsection shall be submitted in such manner, at such time, and containing such information as the Director shall require, in consultation with the Manufacturing Extension Partnership Advisory Board.

"(5) SELECTION.—Awards under this subsection shall be peer reviewed and competitively awarded. The Director shall select proposals to receive awards—

"(A) that utilize innovative or collaborative approaches to solving the problem described in the competition;

"(B) that will improve the competitiveness of industries in the region in which the Center or Centers are located; and

"(C) that will contribute to the long-term economic stability of that region.

"(6) PROGRAM CONTRIBUTION.—Recipients of awards under this subsection shall not be required to provide a matching contribution.".

SEC. 204. TECHNOLOGY INNOVATION PROGRAM.

Section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n) is amended to read as follows:

"TECHNOLOGY INNOVATION PROGRAM

"SEC. 28. (a) ESTABLISHMENT.—There is established in the Institute a Technology Innovation Program for the purpose of assisting United States businesses and institutions of higher education or other organizations, such as national laboratories and nonprofit research institutes, to accelerate the development and application of challenging, high-risk technologies that promise widespread economic benefits for the Nation.

"(b) GRANTS.—

"(1) IN GENERAL.—The Director shall make grants under this section to eligible companies for research and development on high-risk, high-payoff emerging and enabling technologies that offer significant potential benefits to the United States economy and a wide breadth of potential application, and form an important technical basis for future innovations. Such grants shall be made to eligible companies that are—

"(A) small or medium-sized businesses that are substantially involved in the research and development, including having a leadership role in programmatically steering the project and defining the research agenda; or

"(B) joint ventures.

"(2) SINGLE COMPANY GRANTS.—No grant made under paragraph (1)(A) shall exceed $3,000,000 over 3 years. The Federal share of a project funded by such a grant shall not be more than 50 percent of total project costs. An award under paragraph (1)(A) may be extended beyond 3 years only if the Director transmits to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a full and complete explanation of such award, including reasons for exceeding 3 years. Federal funds granted under paragraph (1)(A) may be used only for direct costs and not for indirect costs, profits, or management fees of a contractor.

"(3) JOINT VENTURE GRANTS.—No grant made under paragraph (1)(B) shall exceed $9,000,000 over 5 years. The Federal share of a project funded by such a grant shall not be more than 50 percent of total project costs.

"(c) AWARD CRITERIA.—The Director shall award grants under this section only to an eligible company—

"(1) whose proposal has scientific and technological merit;

"(2) whose application establishes that the proposed technology has strong potential to generate substantial benefits to the Nation that extend significantly beyond the direct return to the applicant;

"(3) whose application establishes that the research has strong potential for advancing the state-of-the-art and contributing significantly to the United States scientific and technical knowledge base;

"(4) whose application establishes that the research is aimed at overcoming a scientific or technological barrier;

"(5) who has provided a technical plan that clearly identifies the core innovation, the technical approach, major technical hurdles, and the attendant risks, and that clearly establishes the feasibility of the technology through adequately detailed plans linked to major technical barriers;

"(6) whose application establishes that the team proposed to carry out the work has a high level of scientific and technical expertise to conduct research and development, has a high level of commitment to the project, and has access to appropriate research facilities;

"(7) whose proposal explains why Technology Innovation Program support is necessary;

"(8) whose application includes a plan for advancing the technology into commercial use; and

"(9) whose application assesses the project's organizational structure and management plan.

"(d) EXTERNAL REVIEW OF PROPOSALS.—In order to analyze the need for or the value of any proposal made by a joint venture or company requesting the Director's assistance under this section, or to monitor the progress of any project which receives funds under this section, the Director shall consult with industry or other expert sources that do not have a proprietary or financial interest in the proposal or project.

"(e) INTELLECTUAL PROPERTY RIGHTS OWNERSHIP.—

"(1) IN GENERAL.—Title to any intellectual property developed by a joint venture from assistance provided under this section may vest in any participant in the joint venture, as agreed by the members of the joint venture, notwithstanding section 202(a) and (b) of title 35, United States Code. The United States may reserve a nonexclusive, nontransferable, irrevocable paid-up license, to have practiced for or on behalf of the United States in connection with any such intellectual property, but shall not in the exercise of such license publicly disclose proprietary information related to the license. Title to any such intellectual property shall not be transferred or passed, except to a participant in the joint venture, until the expiration of the first patent obtained in connection with such intellectual property.

"(2) LICENSING.—Nothing in this subsection shall be construed to prohibit the licensing to any company of intellectual property rights arising from assistance provided under this section.

"(3) DEFINITION.—For purposes of this subsection, the term 'intellectual property' means an invention patentable under title 35, United States Code, or any patent on such an invention, or any work for which copyright protection is available under title 17, United States Code.

"(f) PROGRAM OPERATION.—Not later than 9 months after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall issue regulations—

"(1) establishing criteria for the selection of recipients of assistance under this section;

"(2) establishing procedures regarding financial reporting and auditing to ensure that contracts and awards are used for the purposes specified in this section, are in accordance with sound accounting practices, and are not funding existing or planned research programs that would be conducted in the same time period in the absence of financial assistance under this section; and

"(3) providing for appropriate dissemination of Technology Innovation Program research results.

"(g) CONTINUATION OF ATP GRANTS.—The Director shall, through the Technology Innovation Program, continue to provide support originally awarded under the Advanced Technology Program, in accordance with the terms of the original award.

"(h) COORDINATION WITH OTHER FEDERAL TECHNOLOGY PROGRAMS.—In carrying out this section, the Director shall, as appropriate, coordinate with other senior Federal officials to ensure cooperation and coordination in Federal technology programs and to avoid unnecessary duplication of efforts.

"(i) ACCEPTANCE OF FUNDS FROM OTHER FEDERAL AGENCIES.—In addition to amounts appropriated to carry out this section, the Secretary and the Director may accept funds from other Federal agencies to support awards under the Technology Innovation Program. Any award under this section which is supported with funds from other Federal agencies shall be selected and carried out according to the provisions of this section.

"(j) TIP ADVISORY BOARD.—

"(1) ESTABLISHMENT.—There is established within the Institute a Technology Innovation Program Advisory Board. The TIP Advisory Board shall consist of 10 members appointed by the Director, at least 7 of which shall be from United States industry, chosen to reflect the wide diversity of technical disciplines and industrial sectors represented in Technology Innovation Program projects. No member shall be an employee of the Federal Government.

"(2) TERMS OF OFFICE.—(A) Except as provided in subparagraph (B) or (C), the term of office of each member of the TIP Advisory Board shall be 3 years.

"(B) The original members of the TIP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

"(C) Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

"(D) Any person who has completed two consecutive full terms of service on the TIP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

"(3) PURPOSE.—The TIP Advisory Board shall meet no less than 2 times annually, and provide to the Director—

"(A) advice on programs, plans, and policies of the Technology Innovation Program;

"(B) reviews of the Technology Innovation Program's efforts to assess its economic impact;

"(C) reports on the general health of the program and its effectiveness in achieving its legislatively mandated mission;

"(D) guidance on areas of technology that are appropriate for Technology Innovation Program funding; and

"(E) recommendations as to whether, in order to better assess whether specific innovations to be pursued are being adequately supported by the private sector, the Director could benefit from advice and information from additional industry and other expert sources without a proprietary or financial interest in proposals being evaluated.

"(4) ADVISORY CAPACITY.—In discharging its duties under this subsection, the TIP Advisory Board shall function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.

"(5) ANNUAL REPORT.—The TIP Advisory Board shall transmit an annual report to the Secretary for transmittal to the Congress within 30 days after the submission to Congress of the President's annual budget request in each year. Such report shall address the status of the Technology Innovation Program and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).

"(k) DEFINITIONS.—For purposes of this section—

"(1) the term 'eligible company' means a company that is incorporated in the United States and does a majority of its business in the United States, and that either—

"(A) is majority owned by citizens of the United States; or

"(B) is owned by a parent company incorporated in another country and the Director finds that—

"(i) the company's participation in the Technology Innovation Program would be in the economic interest of the United States, as evidenced by—

"(I) investments in the United States in research and manufacturing (including the manufacture of major components or subassemblies in the United States);

"(II) significant contributions to employment in the United States; and

"(III) agreement with respect to any technology arising from assistance provided under this section to promote the manufacture within the United States of products resulting from that technology (taking into account the goals of promoting the competitiveness of United States industry); and

"(ii) the company is incorporated in a country which—

"(I) affords to United States-owned companies opportunities, comparable to those afforded to any other company, to participate in any joint venture similar to those receiving funding under this section;

"(II) affords to United States-owned companies local investment opportunities comparable to those afforded any other company; and

"(III) affords adequate and effective protection for the intellectual property rights of United States-owned companies;

"(2) the term 'institution of higher education' has the meaning given that term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001);

"(3) the term 'joint venture' means a joint venture that—

"(A) includes either—

"(i) at least 2 separately owned for-profit companies that are both substantially involved in the project and both of which are contributing to the cost-sharing required under this section, with the lead entity of the joint venture being one of those companies that is a small or medium-sized business; or

"(ii) at least one small or medium-sized business and one institution of higher education or other organization, such as a national laboratory or nonprofit research institute, that are both substantially involved in

the project and both of which are contributing to the cost-sharing required under this section, with the lead entity of the joint venture being either that small or medium-sized business or that institution of higher education; and

"(B) may include additional for-profit companies, institutions of higher education, and other organizations, such as national laboratories and nonprofit research institutes, that may or may not contribute non-Federal funds to the project; and

"(4) the term 'TIP Advisory Board' means the advisory board established under subsection (j).".

SEC. 205. RESEARCH FELLOWSHIPS.

Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–l) is amended by striking "up to 1 per centum of the" and inserting "up to 1.5 percent of the".

SEC. 206. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.

The National Institute of Standards and Technology Act is amended—

(1) by redesignating the first section 32 (15 U.S.C. 271 note) as section 34 and moving it to the end of the Act; and

(2) by inserting before the section moved by paragraph (1) the following new section:

"SEC. 33. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.

"(a) AUTHORITY.—

"(1) ESTABLISHMENT.—The Director shall establish a pilot program of awards to partnerships among participants described in paragraph (2) for the purposes described in paragraph (3). Awards shall be made on a peer-reviewed, competitive basis.

"(2) PARTICIPANTS.—Such partnerships shall include at least—

"(A) 1 manufacturing industry partner; and

"(B) 1 nonindustry partner.

"(3) PURPOSE.—The purpose of the program under this section is to foster cost-shared collaborations among firms, educational institutions, research institutions, State agencies, and nonprofit organizations to encourage the development of innovative, multidisciplinary manufacturing technologies. Partnerships receiving awards under this section shall conduct applied research to develop new manufacturing processes, techniques, or materials that would contribute to improved performance, productivity, and competitiveness of United States manufacturing, and build lasting alliances among collaborators.

"(b) PROGRAM CONTRIBUTION.—Awards under this section shall provide for not more than one-third of the costs of a partnership. Not more than an additional one-third of such costs may be obtained directly or indirectly from other Federal sources.

"(c) APPLICATIONS.—Applications for awards under this section shall be submitted in such manner, at such time, and containing such information as the Director shall require. Such applications shall describe at a minimum—

"(1) how each partner will participate in developing and carrying out the research agenda of the partnership;

"(2) the research that the grant would fund; and

"(3) how the research to be funded with the award would contribute to improved performance, productivity, and competitiveness of the United States manufacturing industry.

"(d) SELECTION CRITERIA.—In selecting applications for awards under this section, the Director shall consider at a minimum—

"(1) the degree to which projects will have a broad impact on manufacturing;

"(2) the novelty and scientific and technical merit of the proposed projects; and

"(3) the demonstrated capabilities of the applicants to successfully carry out the proposed research.

"(e) DISTRIBUTION.—In selecting applications under this section the Director shall ensure, to the extent practicable, a distribution of overall awards among a variety of manufacturing industry sectors and a range of firm sizes.

"(f) DURATION.—In carrying out this section, the Director shall run a single pilot competition to solicit and make awards. Each award shall be for a 3-year period.".

SEC. 207. MANUFACTURING FELLOWSHIP PROGRAM.

Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–1) is amended—

(1) by inserting "(a) IN GENERAL.—" before "The Director is authorized"; and

(2) by adding at the end the following new subsection:

"(b) MANUFACTURING FELLOWSHIP PROGRAM.—

"(1) ESTABLISHMENT.—To promote the development of a robust research community working at the leading edge of manufacturing sciences, the Director shall establish a program to award—

"(A) postdoctoral research fellowships at the Institute for research activities related to manufacturing sciences; and

"(B) senior research fellowships to established researchers in industry or at institutions of higher education who wish to pursue studies related to the manufacturing sciences at the Institute.

"(2) APPLICATIONS.—To be eligible for an award under this subsection, an individual shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require.

"(3) STIPEND LEVELS.—Under this subsection, the Director shall provide stipends for postdoctoral research fellowships at a level consistent with the National Institute of Standards and Technology Postdoctoral Research Fellowship Program, and senior research fellowships at levels consistent with support for a faculty member in a sabbatical position.".

SEC. 208. MEETINGS OF VISITING COMMITTEE ON ADVANCED TECHNOLOGY.

Section 10(d) of the National Institute of Standards and Technology Act (15 U.S.C. 278(d)) is amended by striking "quarterly" and inserting "twice each year".

TITLE III—MISCELLANEOUS

SEC. 301. POST-DOCTORAL FELLOWS.

Section 19 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–2) is amended by striking "nor more than 60 new fellows" and inserting "nor more than 120 new fellows".

SEC. 302. FINANCIAL AGREEMENTS CLARIFICATION.

Section 2(b)(4) of the National Institute of Standards and Technology Act (15 U.S.C. 272(b)(4)) is amended by inserting "and grants and cooperative agreements," after "arrangements,".

SEC. 303. WORKING CAPITAL FUND TRANSFERS.

Section 12 of the National Institute of Standards and Technology Act (15 U.S.C. 278b) is amended by adding at the end the following:

"(g) AMOUNT AND SOURCE OF TRANSFERS.—Not more than one-quarter of one percent of the amounts appropriated to the Institute for any fiscal year may be transferred to the fund, in addition to any other transfer authority. In addition, funds provided to the Institute from other Federal agencies for the purpose of production of Standard Reference Materials may be transferred to the fund.".

SEC. 304. RETENTION OF DEPRECIATION SURCHARGE.

Section 14 of the National Institute of Standards and Technology Act (15 U.S.C. 278d) is amended—

(1) by inserting "(a) IN GENERAL.—" before "Within"; and

(2) by adding at the end the following:

"(b) RETENTION OF FEES.—The Director is authorized to retain all building use and depreciation surcharge fees collected pursuant to OMB Circular A–25. Such fees shall be collected and credited to the Construction of Research Facilities Appropriation Account for use in maintenance and repair of the Institute's existing facilities.".

SEC. 305. NON-ENERGY INVENTIONS PROGRAM.

Section 27 of the National Institute of Standards and Technology Act (15 U.S.C. 278m) is repealed.

SEC. 306. REDEFINITION OF THE METRIC SYSTEM.

Section 3570 of the Revised Statues of the United States (derived from section 2 of the Act of July 28, 1866, entitled "An Act to authorize the Use of the Metric System of Weights and Measures" (15 U.S.C. 205; 14 Stat. 339)) is amended to read as follows:

"SEC. 3570. METRIC SYSTEM DEFINED.

"The metric system of measurement shall be defined as the International System of Units as established in 1960, and subsequently maintained, by the General Conference of Weights and Measures, and as interpreted or modified for the United States by the Secretary of Commerce.".

SEC. 307. REPEAL OF REDUNDANT AND OBSOLETE AUTHORITY.

The Act of July 21, 1950, entitled "An Act To redefine the units and establish the standards of electrical and photometric measurements" (15 U.S.C. 223 and 224) is repealed.

SEC. 308. CLARIFICATION OF STANDARD TIME AND TIME ZONES.

(a) Section 1 of the Act of March 19, 1918, (commonly known as the "Calder Act") (15 U.S.C. 261) is amended—

(1) by striking the second sentence and the extra period after it and inserting "Except as provided in section 3(a) of the Uniform Time Act of 1966 (15 U.S.C. 260a), the standard time of the first zone shall be Coordinated Universal Time retarded by 4 hours; that of the second zone retarded by 5 hours; that of the third zone retarded by 6 hours; that of the four zone retarded by 7 hours; that of the fifth zone retarded by 8 hours; that of the sixth zone retarded by 9 hours; that of the seventh zone retarded by 10 hours; that of the eighth zone retarded by 11 hours; and that of the ninth zone shall be Coordinated Universal Time advanced by 10 hours."; and

(2) by adding at the end the following: "In this section, the term 'Coordinated Universal Time' means the time scale maintained through the General Conference of Weights and Measures and interpreted or modified for the United States by the Secretary of Commerce in coordination with the Secretary of the Navy."

(b) Section 3 of the Act of March 19, 1918, (commonly known as the "Calder Act") (15 U.S.C. 264) is amended by striking "third zone" and inserting "fourth zone".

SEC. 309. PROCUREMENT OF TEMPORARY AND INTERMITTENT SERVICES.

(a) IN GENERAL.—The Director of the National Institute of Standards and Technology may procure the temporary or intermittent services of experts or consultants (or organizations thereof) in accordance with section 3109(b) of title 5, United States Code to assist on urgent or short-term research projects.

(b) EXTENT OF AUTHORITY.—A procurement under this section may not exceed 1 year in duration, and the Director shall procure no more than 200 experts and consultants per year.

(c) SUNSET.—This section shall cease to be effective after September 30, 2010.

(d) REPORT TO CONGRESS.—Not later than 2 years after the date of enactment of this Act, the Comptroller General shall report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on whether additional safeguards would be needed with respect to the use of authorities granted under this section if such authorities were to be made permanent.

SEC. 310. MALCOLM BALDRIGE AWARDS.

Section 17(c)(3) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a(c)(3)) is amended to read as follows:

"(3) In any year, not more than 18 awards may be made under this section to recipients who have not previously received an award under this section, and no award shall be made within any category described in paragraph (1) if there are no qualifying enterprises in that category.".

II. PURPOSE OF THE BILL

The purpose of this bill is to authorize appropriations for fiscal years 2008, 2009, and 2010 for the National Institute of Standards and Technology (NIST) and to require a triennial planning document for the Institute; to establish advisory boards for the Institute's two industrial technology programs; to create manufacturing science grant programs and research fellowships; to create a new technology innovation program; and to make technical corrections to the NIST statute.

III. BACKGROUND AND NEED FOR LEGISLATION

Founded in 1901, the National Institute of Standards and Technology (NIST) has developed and promoted measurement, standards, and technology to enhance productivity, facilitate trade, and improve quality of life. NIST is a non-regulatory agency of the U.S. Commerce Department's Technology Administration.

NIST operates in two primary locations: Gaithersburg, MD and Boulder, CO. It also operates two institutes jointly with other organizations: the Center for Advanced Research in Biotechnology in Rockville, MD (with the University of Maryland) and JILA in Boulder, CO (with the University of Colorado).

NIST's staff includes approximately 2,700 scientist, engineers, technicians, and support personnel. In addition, 1,800 associates complement the staff, and NIST partners with about 1,500 manufacturing specialists and staff at affiliated centers around the country. Three NIST scientists have earned the Nobel Prize in the last 10 years.

NIST carries out its mission through four cooperative programs:

• The NIST laboratories conduct research supporting U.S. technology infrastructure by developing tools to measure, evaluate, and standardize, enabling U.S. companies to innovate and remain competitive.

• The Baldrige National Quality Program promotes excellence among U.S manufacturers, service companies, educational institutions, and health care providers; conducts outreach programs; and manages the annual Malcolm Baldrige National Quality Award recognizing performance excellence and quality among businesses, and education, health care and nonprofit organizations.

• The Manufacturing Extension Partnership (MEP) offers technical and business assistance services to improve the productivity and competitiveness of small manufacturers through a nationwide network of local centers. The centers are funded by a one-third equal match from Federal funds, State funds, and fees charged for services.

• The Advanced Technology Program (ATP) accelerates the development of high-risk, innovative technologies that promise broad benefits for the nation by co-funding R&D partnerships with the private sector, including universities.

In addition, NIST operates two national research facilities:

• The NIST Center for Neutron Research (NCNR) provides an intense source of neutrons used to probe the molecular and atomic structure and dynamics of a wide range of materials. This facility is used heavily by industry. In 2006, researchers from over 40 national labs, 140 U.S. universities, and 60 U.S. companies conducted research at the facility in collaboration with NIST scientists.

• The Center for Nanoscale Science and Technology (CNST) leverages the unique capabilities of the NIST Advanced Measurement Laboratory complex, providing state-of-the-art facilities for nanomanufacturing and nanometrology where industry, universities and other Federal laboratories can collaborate in solving critical measurement and fabrication issues necessary to convert nanoscale discoveries into products.

The Administration's American Competitiveness Initiative (ACI) calls for a 10-year doubling of the funding of the NIST laboratories, in recognition of the contribution basic measurement and standardization science makes to American innovation. However, in recent years the budget requests for both ATP and MEP have recommended significant funding cuts to both programs, with Congress generally restoring the funding.

NIST's last comprehensive authorization was by the American Technology Preeminence Act of 1991 (P.L. 102–245, enacted in

1992) which authorized all of NIST's programs for fiscal years 1992 and 1993. A portion of NIST was most recently authorized by the Technology Administration Act of 1998 (P.L. 105–309, enacted in 1998), which authorized only the laboratory programs of the Institute for fiscal years 1998 and 1999. Since those bills, NIST has submitted legislative authorization requests to the Congress (most recently in 2002) and completed a major laboratory upgrade at its Gaithersburg, MD campus (the Advanced Metrology Laboratory). It has also embarked on laboratory upgrades to its Boulder, CO campus and requested funds for upgrades to the Center for Neutron Research. In addition, starting in FY07 the NIST budget request has included significant increases for its laboratory activities.

IV. Hearing Summary

On Thursday, February 15, 2007, the Technology and Innovation Subcommittee of the House Committee on Science and Technology held a hearing to consider the President's fiscal year 2008 (FY08) budget request for the National Institute of Standards and Technology (NIST).

The Subcommittee heard testimony from: (1) Dr. William Jeffrey, Director of NIST; (2) Dr. Stan Williams, Senior HP Fellow in Quantum Science Research for the Hewlett-Packard Corporation, testifying on behalf of the Alliance for Science and Technology Research in America (ASTRA); (3) Mr. Michael Borrus, General Partner in X/Seed Capital; (4) Mr. Peter Murray, Vice President of Welch Allyn, Inc.; (5) Mr. Michael Ryan, President and CEO of TUG Technologies Corporation.

Dr. Jeffrey began his testimony by highlighting some of NIST's achievements, noting that research at the Institute's laboratories offer a benefit-to-cost ratio of 44 to 1 for taxpayer investment, and that in the past decade three NIST researchers have won the Noble Prize. He also stated that:

- NIST is working with industry to identify technical barriers to innovation and to stimulate knowledge transfer from the labs to industry.
- The budget request for FY08 is $640.7 million. Under this budget, $594.4 million would go to NIST core activities, including capacity and capability improvements for the Boulder labs and the NIST Center for Neutron Research (NCNR) in Gaithersburg. $46.3 million would go to the Manufacturing Extension Partnership (MEP).
- NIST will continue to execute MEP as effectively as possible, regardless of funding. (Dr. Jeffrey did state at the hearing that because of the reduced funding for the program, NIST would open a re-competition for the MEP Centers. However, in a February 26, 2007 follow-up memo inserted in the hearing record, NIST announced that it would not re-compete the Centers.)
- The Advanced Technology Program (ATP) was scheduled to be phased out after FY06, but because funding for the program is in the FY07 Joint Budget Resolution, NIST will instead continue the program, including making new awards in FY07.

- Though both MEP and ATP have produced results for the Nation's manufacturing community and the economy as a whole, the Administration does not believe that their function is a proper role for the Federal government. However, the Federal government does have three important roles to play in MEP: (1) propagating new ideas, like the principles of lean manufacturing, throughout the Nation's industrial network; (2) ensuring the MEP Centers maintain a high level of quality; and (3) ensuring the MEP Centers stay focused on small manufacturers.
- The Administration does not have a plan for how MEP would operate under the proposed budget request.

Dr. Williams, testifying on behalf of the Alliance for Science and Technology Research in America (ASTRA), stressed that one of NIST's most vital roles is providing verified, technical data to the scientific community, acting as a check on the conflicting and confusing results that can emerge from research labs. He also emphasized that today's scientific advancements, more than ever, rely on exquisite measurements for discovery and innovation, and thus NIST must continue to play a leading role in this area. Dr. Williams noted in particular that:

- NIST staff is currently stretched too thin. Mission creep at the labs is burdening researchers with too many projects, resulting in an overall slowing, and potential loss of relevance, of technical information to rapidly evolving scientific fields. NIST should refrain from new responsibilities until all of its present programs and projects are adequately funded and staffed.
- Continuing to overtax NIST's research staff could deter talented scientists from choosing to pursue careers at NIST which would be tremendous loss for the NIST enterprise.

Dr. Williams noted further that "ASTRA strongly recommends that all current NIST missions and programs, including the newly-created NIST Center for Nanoscale Science and Technology, the ATP and the MEP should be adequately funded and supported by Congress and the Administration under the doubling initiative. These programs are sound investments with high potential returns for American taxpayers."

Mr. Borrus stated that his view points on NIST and innovation have developed from his significant experience in studying, developing, and investing in high-risk, early-stage technological innovations. He made three major points:

- U.S. capital markets have seen significant changes in the past 15 years. Their reluctance to invest seed money in new technologies makes it difficult for these potential innovations to cross the "valley of death" and take products from the lab to the market-place. This creates an "urgent need" for the ATP to be substantially funded so that it can run new competitions.
- The ATP is likely the most intensively studied and scrutinized U.S. technology program of the last 50 years, and its peer-reviewed, pork-free, merit-based competitions

set the standard to which other federal technology programs ought to aspire.

- The U.S. faces a series of major challenges to which innovation is the necessary response, and the right program to produce significant innovation is ATP.

Mr. Borrus concluded: "I recommend that Congress should reauthorize the ATP program, provide sufficient funding for ATP to run several competitions, both general and specific competitions focused in areas of acute need and . . . the Committee should consider ways that ATP might be stably and predictably funded over a long enough timeframe, perhaps a decade, to have a significant impact over time."

Mr. Murray, speaking as a client of the Oregon MEP, testified that the program was very successful at giving its clients customized, strategic results. He stated that the MEP consultants raised the capacity of the Welch-Allyn workforce. He also stated that the Oregon MEP Center would experience a "drastic reduction" in the services it could offer to small manufacturers under the funding level proposed for MEP in the FY08 budget, and that this would have a direct impact on industry. He concluded: "I firmly believe that the funding levels [for MEP] should be restored, and hopefully, with reason, expanded."

Mr. Ryan also spoke very enthusiastically about MEP, noting that he had had an opportunity to work with MEP Centers in five states. He noted that MEP Centers provide the synergy between innovative ideas and small manufacturers that allow them to be competitive in the global market. He concluded: "I have found the MEP five times in five states. They are the solution. We should expand, not retract, our support of the MEP."

V. Committee Actions

As summarized in Section IV, the Subcommittee on Technology and Innovation heard testimony in the 100th Congress relevant to the provisions in H.R. 1868 on February 15, 2007.

On April 19, 2007, the Subcommittee on Technology and Innovation met to consider H.R. 1868 and the following amendments to the bill:

1. Mr. Wu and Mr. Gingrey offered an amendment to make technical corrections to the bill.

2. Mr. Matheson offered an amendment to emphasize the need for technology transfer projects to be included in the Manufacturing Extension Center competitive grant program created in Section 203(c) of the bill.

By unanimous consent, the amendments were considered en bloc, and were agreed to by voice vote. The bill as amended was then adopted by voice vote. Subcommittee Ranking Member Gingrey moved that the Subcommittee favorably report H.R. 1868 as amended to the full Committee, and the motion was agreed to by voice vote.

On April 25, 2007, the full Science and Technology Committee met to consider H.R. 1868 as reported from the Subcommittee on Technology and Innovation. The Committee considered three amendments to the bill:

1. Ms. Biggert offered an amendment to clarify that National Laboratories and nonprofit research institutes were eligible to participate as non-lead members of joint ventures under the Technology Innovation Program created in Section 204 of the bill. Agreed to by voice vote.

2. Dr. Gingrey offered an amendment to authorize NIST to enter into personal services contracts to obtain scientific and technical experts on a consulting basis. The authority would be capped at 200 contracts per year and would expire after 3 years. Agreed to by voice vote.

3. Ms. Johnson and Dr. Gingrey offered an amendment to raise the maximum number of annual awards under the Malcolm Baldrige National Quality Award Program to 18 and remove the category restrictions on awards. Agreed to by voice vote.

The bill as amended was then adopted by voice vote. Ranking Member Hall moved that the Committee favorably report H.R. 1868 as amended to the House, and the motion was agreed to by voice vote.

VI. Summary of Major Provisions of the Bill

Title I of H.R. 1868 authorizes $2.5 billion for the National Institute of Standards and Technology for fiscal years 2008–2010, including $1.5 billion for scientific and technical research and services (STRS), $24 million for the Malcolm Baldrige National Quality Award Program; $230 million for construction and maintenance; $367 million for the Manufacturing Extension Partnership (MEP); and $402 million for the Technology Innovation Program (TIP), which is established in Section 204 of the bill to replace the Advanced Technology Program (ATP). Title II requires the Director to submit a 3-year programmatic planning document and updates concurrent with the annual budget request, and requires the Visiting Committee on Advanced Technology (VCAT) to comment on this document; creates Advisory Boards for the MEP and TIP, which have significant industry representation and are required to comment on relevant sections of the programmatic planning document and updates; establishes a competitive grant program within MEP for MEP Centers or consortia of Centers to research manufacturing technologies; repeals the Advanced Technology Program and establishes the Technology Innovation Program, which will award cost-shared grants to small- and medium-sized businesses and joint ventures including universities and other organizations to pursue high-risk technologies with potential significant broad benefits to the Nation; and establishes a program of research fellowships at NIST in manufacturing sciences, and a program of collaborative manufacturing grants for industry and non-industry partnerships to pursue innovative, multidisciplinary manufacturing technologies. Title III makes a number of technical changes to the NIST statute.

VII. Section-by-Section Analysis

Section 1. Short title

The Technology Innovation and Manufacturing Stimulation Act of 2007.

TITLE I—AUTHORIZATION OF APPROPRIATIONS

Section 101. Scientific and technical research and services

Authorizes $470.9 million in FY08, $497.8 million in FY09, and $537.6 million in FY10 for the NIST lab activities. Authorizes $7.9 million in FY08, $8.1 million in FY09, and $8.3 million in FY10 for the Baldrige National Quality Award Program. Authorizes $93.9 million in FY08, $86.4 million in FY09, and $49.7 million for construction and maintenance of facilities.

Section 102. Industrial technology services

Authorizes $110 million in FY08, $141.5 million in FY09, and $150.5 million in FY10 for the Technology Innovation Program (TIP), which replaces the existing Advanced Technology Program (ATP) (see Section 204). Requires that at least $45 million in each year be for new TIP awards. Authorizes $113.0 million in FY08, $122.0 million in FY09, and $131.8 million in FY10 for the Manufacturing Extension Partnership (MEP). Sets aside up to $1 million in FY08 and $4 million in FY09 and FY10 from the MEP funds for a competitive grant program established in Section 203(c).

TITLE II—INNOVATION AND TECHNOLOGY POLICY REFORMS

Section 201. Institute-wide planning report

Requires the Director of NIST to submit a 3-year programmatic planning document for NIST to the Congress concurrent with the budget submission the first year after enactment, and then to submit yearly updates with each new budget submission.

Section 202. Report by Visiting Committee

Changes the reporting requirement for the Visiting Committee on Advanced Technology (VCAT) to be due 30 days after the submission of the President's budget to Congress, and requires the VCAT to comment on the NIST Director's 3-year planning document.

Section 203. Manufacturing Extension Partnership

Establishes the MEP Advisory Board, which consists of 10 members appointed by the NIST Director, serving 3-year terms. 2 members must be employed by or on advisory boards of the MEP Centers, and 5 others must be from small manufacturers. None can be Federal employees. The board meets no less than twice a year, and provides the NIST Director with advice on and assessments of MEP. It also comments on the relevant sections of the NIST Director's 3-year planning document at the same time as the VCAT. The Board is governed by the Federal Advisory Committee Act (FACA). Allows MEP to accept funds from other Federal agencies and from the private sector. Establishes the MEP competitive grants program for MEP Centers or consortia of Centers. The grants are peer reviewed and competitively awarded for Center(s) to conduct projects to solve new or emerging manufacturing problems. Awardees are not required to provide matching funds.

Section 204. Technology Innovation Program

Repeals the existing Advanced Technology Program (ATP) statute and creates the Technology Innovation Program (TIP).

• *Establishment*—Creates the "Technology Innovation Program" with the purpose of assisting businesses and universities to accelerate the development of high-risk technologies that will have a broadly-based economic impact.

• *Grants*—Provides the Director of NIST with the authority to make grants under this program to either small or medium-sized businesses or joint ventures. For applicants that are single companies, they must be small or medium-sized businesses. Grants are for no more than $3 million over three years, but can be extended at no additional cost provided there is congressional notice. The funding may only be used for direct costs, and can not be more than 50 percent of total costs. Grants may also be made to joint ventures, which must be led by a small or medium business or a university and may include other organizations as non-lead partners. A joint venture grant may not exceed $9 million over five years and the federal share of the project must be no more than 50 percent.

• *Award Criteria*—Provides criteria for the selection of grants based upon scientific and technological merit, the project's potential for benefits that extend beyond direct return to the applicant, the inclusion of a technical planning document, the technical competence of the project team and the organizational structure and management plan, and an explanation of why TIP support is necessary.

• *External Review of Proposals*—Requires the Director to consult with industry or other expert sources with no proprietary or financial interest in the project to review the need for or value of any proposal.

• *Intellectual Property Rights Ownership*—Addresses allocation of intellectual property developed by a joint venture. Allows IP to vest to any participant as agreed to by the joint venture participants. In accordance with current law allows the Federal government to retain a license for any IP for U.S. government use only. Makes clear that joint venture participants can license their IP.

• *Program Operation*—Requires the Director to issue regulations within nine months of enactment for the operation of the program, including selection criteria, financial and audit procedures and dissemination of results.

• *Continuation of ATP Grants*—Requires the TIP to continue funding for awards made under the prior Advanced Technology Program.

• *Coordination with Other Federal Technology Programs*—Requires the Director to coordinate with other federal agencies to ensure there is no duplication of effort.

• *Acceptance of Funds From Other Federal Agencies*—Allows NIST to accept funds from other Federal agencies to fund TIP awards. Any awards so funded must be selected and carried out as all other TIP awards.

• *TIP Advisory Board*—Establishes the TIP Advisory Board, which consists of 10 members appointed by the NIST Director, serving three-year terms. Seven members must be from U.S. industry, and none can be Federal employees. The board meets no less

than twice a year, and provides the NIST Director with advice on and assessments of TIP. It also comments on the relevant sections of the NIST Director's three-year planning document at the same time as the VCAT. The Board is governed by the Federal Advisory Committee Act (FACA).

- *Definitions—*
  - *Eligible Company*—is majority owned by U.S. citizens or is owned by a parent company incorporated in another country provided that the company's participation is in U.S. economic interests, including R&D investment in the U.S. and increasing U.S. employment. Also, the country of incorporation must afford similar opportunities for U.S. companies, and provide for effective protection of IP rights.
  - *Joint Venture*—includes either two separately owned for-profit companies and the lead must be a small or medium business or at least one small or medium business and one institution of higher education where either can be the lead. Joint ventures may include additional for-profit companies, institutions of higher education or other organizations such as National Laboratories and nonprofit research organizations.

Section 205. Research fellowships

Raises the amount NIST can spend on research fellowships from 1 percent to 1.5 percent of the total appropriations. This will also allow for additional manufacturing research fellowships as established in Section 207.

Section 206. Collaborative manufacturing research pilot grants

Establishes a collaborative manufacturing research pilot grant program for partnerships between at least one industry and one non-industry partner, with the purpose of fostering collaboration and conducting applied research on manufacturing. The award can be no more than ⅓ of the cost of the partnership, with no more than an additional ⅓ coming from other Federal sources. Selection criteria for the awards are based on the breadth of impact of the project, the novelty and scientific merit of the proposal, and the demonstrated capability of the participants. Awards must be distributed among a range of industry sectors and firm sizes. NIST will run one pilot competition and awards will be for three years.

Section 207. Manufacturing fellowship program

Establishes a program of postdoctoral and senior research fellowships at NIST in manufacturing sciences.

Section 208. Meetings of Visiting Committee on Advanced Technology

Reduces the frequency of meetings for the Visiting Committee on Advanced Technology (VCAT) from quarterly to twice annually.

TITLE III—MISCELLANEOUS

Section 301. Post-doctoral fellows

Raises the cap on the number of post-doctoral fellows that NIST can accept each year from 60 to 120.

Section 302. Financial agreements clarification

Authorizes NIST to enter into grants and cooperative agreements, in addition to its current authority to enter into contracts and cooperative research and development agreements (CRADAs).

Section 303. Working Capital Fund transfers

Authorizes NIST to transfer up to 0.25 percent of its total appropriations, and any funds from other agencies given to NIST to produce Standard Reference Materials, into the Working Capital Fund.

Section 304. Retention of depreciation surcharge

Allows NIST to retain the building use and depreciation surcharge fees that are charged by the General Services Administration.

Section 305. Non-energy inventions program

Repeals an outdated statute requiring the NIST Director to establish a program to evaluate inventions.

Section 306. Redefinition of the metric system

Clarifies in statute that the metric system used in the U.S. is the modern system of metric measurement units.

Section 307. Repeal of redundant and obsolete authority

Eliminates archaic, special-case language related to the definition of units of electrical and light measurement.

Section 308. Clarification of standard time and time zones

Specifies that standard time in the U.S. is Coordinated Universal Time, and fixes technical problems in statute with the time zone definitions.

Section 309. Procurement of temporary and intermittent services

Authorizes NIST to issue up to 200 personal services contracts per year to procure the temporary or intermittent services of scientific and technical experts and consultants. The authority expires in 2010, and the Comptroller General is required to report to the Congress on NIST's use of this authorization.

Section 310. Malcolm Baldrige Awards

Raises to 18 the cap on the number of annual awards under the Malcolm Baldrige National Quality Award Program and removes category restrictions.

VIII. COMMITTEE VIEWS

In 1901, Congress created an agency with the instruction to address "the solution of problems which arise in connection with standards." Today, we know this agency as the National Institute of Standards and Technology (NIST). Since its creation more than 100 years ago, NIST has worked at the cutting edge in the development of new technologies. From developing standards for fire hydrants in the early 1900s; to making the world's fastest computer, and the first one to rely upon solid state electronics, in 1950; to its

groundbreaking work on the collapse of the World Trade Center Building in the wake of 9/11, NIST has improved the safety and quality of life for all Americans and enabled many of the more important break-through technologies of the past 100 years.

The Science and Technology Committee has always been a strong supporter of NIST and has been active in strengthening and expanding NIST's mission. NIST is a key component of the Nation's innovation agenda and future economic growth. H.R. 1868 puts NIST's overall budget on a path to doubling over the next 10 years. This will allow for robust programs at NIST that support U.S. industry and improve quality of life.

H.R. 1868 increases the NIST STRS account 8% each year. This will provide funding for research and metrology work in key areas such as biologics, healthcare IT, security of computer infrastructure and nanotechnologies. The Committee believes that in order to do first-class research, world-class engineers and scientists need first-class research facilities. Therefore, H.R. 1868 provides the funding to complete renovation and construction of facilities, including the Building 1 Extension construction at the Boulder, Colorado campus and upgrades to the NIST Center for Neutron Research at the Gaithersburg, Maryland campus.

The Committee is concerned that NIST lacks a plan for its future research activities, even though it has requested significant funding increases in recent years. NIST issued a strategic plan, NIST 2010, in 2002. However, this plan has not been updated and NIST's budget requests have not always been consistent with this strategic plan. H.R. 1868 requires NIST to develop a three-year planning document, updated yearly, for all its programmatic activities—Scientific and Technical Research and Services (STRS), Industrial Technology Services (ITS), and Construction of Research Facilities. The Committee also requires NIST's industry-based advisory committee, the Visiting Committee on Advanced Technology, to publicly report on this planning document. NIST's primary mission is to support U.S. industry and competitiveness, so it is appropriate for the Visiting Committee to offer a private-sector perspective. The Committee believes this will be a useful document, not only to NIST, but to industry and Congress as well.

The Science and Technology Committee has long been concerned about the health of the American manufacturing sector. This Committee created the Manufacturing Extension Partnership (MEP) in 1988 (P.L. 104–418). H.R. 1868 fully funds the MEP and also authorizes a yearly increase of 8%. MEP is a proven and highly successful public/private partnership that has supported our small- and medium-sized manufacturers. H.R. 1868 establishes a competitive grant program to assist MEP Centers in developing new programs to help small and medium-sized manufacturers facing new challenges.

The Committee has been concerned about fluctuating budget requests for the MEP in recent years. We have been particularly concerned by the lack of Federal consultation with state MEP partners. H.R. 1868 requires the MEP Advisory Board to comment on the MEP component of NIST's planning document. Manufacturing has long been a major source of high-skill, high-paying jobs in the U.S. and we believe implementation of these provisions will go far in supporting our manufacturing sector.

In addition to the MEP, H.R. 1868 establishes two other important manufacturing-related programs. The Collaborative Manufacturing Research Grants provide an opportunity to evaluate how innovation can be stimulated by supporting relationships among Federal Agencies, State agencies, community colleges, universities, non-profit organizations and companies. H.R. 1868 also establishes a manufacturing fellowship program at NIST. NIST, with its excellent track record in manufacturing science and relationship with industry, provides unique educational opportunities to candidates who wish to gain greater expertise in manufacturing education.

The Science and Technology Committee is at the forefront of innovation policy in the United States. In 1988, the Science and Technology Committee created the Advanced Technology Program (ATP) (P.L. 104–418). Although the ATP has been a highly successful program, the global innovation environment has changed. Therefore, H.R. 1868 replaces the ATP with the Technology Innovation Program (TIP). Building upon lessons learned from the ATP, TIP responds to global innovation competition by funding high-risk, high-reward, pre-competitive technology development with high potential for public benefit, focusing on small- and medium-sized firms. TIP also acknowledges the important role universities play in the innovation cycle by allowing universities to fully participate in the program.

IX. Cost Estimate

A cost estimate and comparison prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act of 1974 has been timely submitted to the Committee on Science and Technology prior to the filing of this report and is included in Section X of this report pursuant to House Rule XIII, clause 3(c)(3).

H.R. 1868 does not contain new budget authority, credit authority, or changes in revenues or tax expenditures. Assuming that the sums authorized under the bill are appropriated, H.R. 1868 does authorize additional discretionary spending, as described in the Congressional Budget Office report on the bill, which is contained in Section X of this report.

X. Congressional Budget Office Cost Estimate

April 27, 2007.

Hon. Bart Gordon,
Chairman, Committee on Science and Technology,
House of Representatives, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 1868, the Technology Innovation and Manufacturing Stimulation Act of 2007.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Susan Willie.

Sincerely,

Peter R. Orszag.

Enclosure.

H.R. 1868—Technology Innovation and Manufacturing Stimulation Act of 2007

Summary: H.R. 1868 would authorize appropriations for programs administered by the National Institute of Standards and Technology (NIST) for fiscal years 2008 through 2010. The bill also would establish a new fellowship program and authorize several new grant programs.

Assuming appropriation of the authorized amounts, CBO estimates that implementing H.R. 1868 would cost $417 million in 2008 and $2.5 billion over the 2008–2012 period. The bill would allow NIST to accept and spend funds from private industries to support certain programs. Such collections would be recorded on the budget as revenues; CBO estimates the effect on federal revenues and direct spending would be insignificant.

H.R. 1868 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA); the bill could benefit public institutions of higher education.

Estimated cost to the Federal Government: The estimated budgetary impact of H.R. 1868 is shown in the following table. The costs of this legislation fall within budget function 370 (commerce and housing credit).

	By fiscal year, in millions of dollars—					
	2007	2008	2009	2010	2011	2012
SPENDING SUBJECT TO APPROPRIATION						
NIST Spending Under Current Law:						
Budget Authority[a]	604	0	0	0	0	0
Estimated Outlays	361	154	41	30	11	6
Proposed Changes:						
Scientific and Technical Research and Services:						
Authorization Level	0	573	592	596	0	0
Estimated Outlays	0	380	514	569	176	62
Industrial Technology Services:						
Authorization Level	0	223	264	282	0	0
Estimated Outlays	0	36	137	219	217	115
Other Provisions:						
Estimated Authorization Level	0	7	10	12	2	2
Estimated Outlays	0	1	4	8	9	7
Total Proposed Changes:						
Estimated Authorization Level	0	803	866	891	2	2
Estimated Outlays	0	417	655	796	402	183
Total Spending NIST Under H.R. 1868:						
Estimated Authorization Level[a]	604	803	866	890	2	2
Estimated Outlays	361	571	696	826	413	189

[a] The 2007 level is the amount appropriated for that year for programs administered by the National Institute of Standards and Technology.

Basis of estimate: For this estimate, CBO assumes that the bill will be enacted in 2007 and that the authorized amounts will be appropriated for each year. Estimated outlays are based on historical spending patterns for NIST.

H.R. 1868 would specifically authorize the appropriation of $2.6 billion for fiscal years 2008 through 2010 for programs related to manufacturing technology. In addition, CBO estimates that implementing other provisions of the bill would require appropriations of $7 million in 2008 and $33 million over the 2008–2012 period. Estimated outlays from these amounts would total about $2.5 billion over the 2008–2012 period.

Scientific and Technological Research and Services

Section 101 would authorize the appropriation of $471 million for 2008, $498 million for 2009, and $538 for 2009 for Scientific and Technical Research and Services. This program supports NIST's laboratories and technical programs as well as national research facilities, including the Center for Neutron Research and the Center for Nanoscale Science and Technology. Assuming appropriation of the specified amounts, CBO estimates that implementing this provision would cost $1.5 billion over the 2008–2012 period.

Section 101 also would authorize appropriations for the Malcolm Baldridge National Quality Award Program, which recognizes US businesses for their achievements in both performance and quality. The bill would authorize the appropriation of $8 million in each year over the 2008–2010 period. Assuming appropriation of the specified amounts, CBO estimates that implementing this provision would cost $24 million over the 2008–2012 period.

Finally, section 101 would authorize appropriations for construction and maintenance of NIST facilities—$94 million in 2008, $86 million in 2009, and $50 million in 2010. Assuming appropriation of the specified amounts, CBO estimates that implementing this provision would cost $169 million over the 2008–2012 period.

Industrial Technology Services

Under current law, two NIST programs operate under the Industrial Technology Services (ITS) account. The Manufacturing Extension Partnership (MEP) combines federal funds with funding from state and local governments and private industry to provide technical assistance and training to small manufacturers. Section 102 of the bill would authorize appropriations of $113 million in 2008, $122 million in 2009, and $132 million in 2010 for the MEP. Assuming appropriation of these amounts, CBO estimates that implementing this provision would cost $348 million over the 2008–2012 period.

The second program operating under ITS is the Advanced Technology Program (ATP). H.R. 1868 would replace the ATP with the Technology Innovation Program (TIP), which would make grants to small- and medium-sized businesses or joint ventures between universities or other research institutes and small- or medium-sized businesses to support research and development on emerging technologies. The bill would authorize appropriations of $110 million in 2008, $142 million in 2009, and $151 million in 2010. Of these amounts, $45 million would be reserved for new grant awards each year. Assuming appropriation of the specified amounts, CBO estimates that implementing this provision would cost $375 million over the 2008–2012 period.

Other provisions

Section 206 would create a pilot program that would make grants to promote partnerships between manufacturers and nonmanufacturing organizations (universities, research institutions, state agencies, or nonprofit organizations) to develop new manufacturing technologies. The bill would authorize a single grant competition to make awards for a three-year period. CBO estimates that implementing the pilot grant program would cost $1 million in 2008 and $21 million over the 2008–2012 period.

Section 207 would authorize a new fellowship program to support research related to manufacturing. CBO estimates this provision would cost $7 million over the 2008–2012 period.

Intergovernmental and private-sector impact: H.R. 1868 contains no intergovernmental or private-sector mandates as defined in UMRA. The bill would authorize grant funds that could benefit public institutions of higher education. Any costs they might incur would result from complying with conditions of federal assistance.

Estimate prepared by: Federal Costs: Susan Willie

Impact on State, Local, and Tribal Governments: Elizabeth Cove

Impact on the Private Sector: Craig Cammarata

Estimate approved by: Peter H. Fontaine, Deputy Assistant Director for Budget Analysis.

XI. Compliance With Public Law 104–4

H.R. 1868 contains no unfunded mandates.

XII. Committee Oversight Findings and Recommendations

The oversight findings and recommendations of the Committee on Science and Technology are reflected in the body of this report.

XIII. Statement on General Performance Goals and Objectives

Pursuant to clause (3)(c) of House rule XIII, the goals of H.R. 1868 are to authorize appropriations for the National Institute of Standards and Technology for fiscal years 2008, 2009, and 2010.

XIV. Constitutional Authority Statement

Article I, section 8 of the Constitution of the United States grants Congress the authority to enact H.R. 1868.

XV. Federal Advisory Committee Statement

The functions of the advisory committees required by H.R. 1868 could not be performed by one or more agencies or by enlarging the mandate of another existing advisory committee.

XVI. Congressional Accountability Act

The Committee finds that H.R. 1868 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

XVII. Earmark Identification

H.R. 1868 does not contain any congressional earmarks, limited tax benefits, or limited tariff benefits as defined in clause 9(d), 9(e), or 9(f) of Rule XXI.

XVIII. Statement on Preemption of State, Local, or Tribal Law

This bill is not intended to preempt any state, local, or tribal law.

XIX. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

CHANGES IN EXISTING LAW MADE BY THE BILL, as REPORTED

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ACT

* * * * * * *

ESTABLISHMENT, FUNCTIONS, AND ACTIVITIES

SEC. 2. (a) * * *

(b) The Secretary of Commerce (hereafter in this Act referred to as the "Secretary") acting through the Director of the Institute (hereafter in this Act referred to as the "Director") and, if appropriate, through other officials, is authorized to take all actions necessary and appropriate to accomplish the purposes of this Act, including the following functions of the Institute—

(1) * * *

* * * * * * *

(4) to enter into contracts, including cooperative research and development arrangements, *and grants and cooperative agreements,* in furtherance of the purposes of this Act;

* * * * * * *

VISITING COMMITTEE ON ADVANCED TECHNOLOGY

SEC. 10. (a) * * *

* * * * * * *

(d) The Committee shall meet at least [quarterly] *twice each year* at the call of the Chairman or whenever one-third of the members so request in writing. A majority of the members of the Committee not having a conflict of interest in the matter being considered by the Committee shall constitute a quorum. Each member shall be given appropriate notice, whenever possible, not less than 15 days prior to any meeting, of the call of such meeting.

* * * * * * *

(h)(1) The Committee shall render an annual report to the Secretary for submission to the Congress [on or before January 31 in each year] *within 30 days after the submission to Congress of the President's annual budget request in each year*. Such report shall deal essentially, though not necessarily exclusively, with policy issues or matters which affect the Institute, including the Program established under section 28, or with which the Committee in its official role as the private sector policy advisor of the Institute is concerned. Each such report shall identify areas of research and research techniques of the Institute of potential importance to the long-term competitiveness of United States industry, in which the Institute possesses special competence, which could be used to assist United States enterprises and United States industrial joint re-

search and development ventures. *Such report also shall comment on the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).*

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SEC. 12. (a) * * *

* * * * * * *

(g) AMOUNT AND SOURCE OF TRANSFERS.—Not more than one-quarter of one percent of the amounts appropriated to the Institute for any fiscal year may be transferred to the fund, in addition to any other transfer authority. In addition, funds provided to the Institute from other Federal agencies for the purpose of production of Standard Reference Materials may be transferred to the fund.

* * * * * * *

SEC. 14. *(a) IN GENERAL.*—Within the limits of funds which are appropriated for the Institute, the Secretary of Commerce is authorized to undertake such construction of buildings and other facilities and to make sure improvements to existing buildings, grounds, and other facilities occupied or used by the Institute as are necessary for the proper and efficient conduct of the activities authorized herein.

(b) RETENTION OF FEES.—The Director is authorized to retain all building use and depreciation surcharge fees collected pursuant to OMB Circular A—25. Such fees shall be collected and credited to the Construction of Research Facilities Appropriation Account for use in maintenance and repair of the Institute's existing facilities.

* * * * * * *

SEC. 18. *(a) IN GENERAL.*—The Director is authorized to expend [up to 1 per centum of the] *up to 1.5 percent of the* funds appropriated for activities of the Institute in any fiscal year, as the Director may deem desirable, for awards of research fellowships and other forms of financial assistance to students at institutions of higher learning within the United States who show promise as present or future contributors to the mission of the Institute, and to United States citizens for research and technical activities on Institute programs. The selection of persons to receive such fellowships and assistance shall be made on the basis of ability and of the relevance of the proposed work to the mission and programs of the Institute.

(b) MANUFACTURING FELLOWSHIP PROGRAM.—

(1) ESTABLISHMENT.—To promote the development of a robust research community working at the leading edge of manufacturing sciences, the Director shall establish a program to award—

(A) postdoctoral research fellowships at the Institute for research activities related to manufacturing sciences; and

(B) senior research fellowships to established researchers in industry or at institutions of higher education who wish to pursue studies related to the manufacturing sciences at the Institute.

(2) APPLICATIONS.—To be eligible for an award under this subsection, an individual shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require.

(3) STIPEND LEVELS.—Under this subsection, the Director shall provide stipends for postdoctoral research fellowships at a level consistent with the National Institute of Standards and Technology Postdoctoral Research Fellowship Program, and senior research fellowships at levels consistent with support for a faculty member in a sabbatical position.

SEC. 19. The Institute in conjunction with the National Academy of Sciences, shall establish and conduct a post-doctoral fellowship program, subject to the availability of appropriations, which shall be organized and carried out in substantially the same manner as the National Academy of Sciences/National Research Council Post-Doctoral Research Associate Program that was in effect prior to 1986, and which shall include not less than twenty **[**nor more than 60 new fellows**]** *nor more than 120 new fellows* per fiscal year.

* * * * * * *

REPORTS TO CONGRESS

SEC. 23. (a) * * *

* * * * * * *

(c) Concurrent with the submission to Congress of the President's annual budget request in the first year after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall transmit to the Congress a 3-year programmatic planning document for the Institute, including programs under the Scientific and Technical Research and Services, Industrial Technology Services, and Construction of Research Facilities functions.

(d) Concurrent with the submission to the Congress of the President's annual budget request in each year after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall transmit to the Congress an update to the 3-year programmatic planning document transmitted under subsection (c), revised to cover the first 3 fiscal years after the date of that update.

* * * * * * *

REGIONAL CENTERS FOR THE TRANSFER OF MANUFACTURING TECHNOLOGY

SEC. 25. (a) * * *

* * * * * * *

[(d) In addition to such sums as may be authorized and appropriated to the Secretary and Director to operate the Centers program, the Secretary and Director also may accept funds from other Federal departments and agencies for the purpose of providing Federal funds to support Centers. Any Center which is supported with funds which originally came from other Federal departments and agencies shall be selected and operated according to the provisions of this section.**]**

(d) ACCEPTANCE OF FUNDS.—In addition to such sums as may be appropriated to the Secretary and Director to operate the Centers program, the Secretary and Director also may accept funds from other Federal departments and agencies and under section 2(c)(7)

from the private sector for the purpose of strengthening United States manufacturing. Such funds, if allocated to a Center or Centers, shall not be considered in the calculation of the Federal share of capital and annual operating and maintenance costs under subsection (c).

(e) MEP ADVISORY BOARD.—(1) There is established within the Institute a Manufacturing Extension Partnership Advisory Board (in this Act referred to as the "MEP Advisory Board"). The MEP Advisory Board shall consist of 10 members broadly representative of stakeholders, to be appointed by the Director. At least 2 members shall be employed by or on an advisory board for the Centers, and at least 5 other members shall be from United States small businesses in the manufacturing sector. No member shall be an employee of the Federal Government.

(2)(A) Except as provided in subparagraph (B) or (C), the term of office of each member of the MEP Advisory Board shall be 3 years.

(B) The original members of the MEP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

(C) Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

(D) Any person who has completed two consecutive full terms of service on the MEP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

(3) The MEP Advisory Board shall meet no less than 2 times annually, and provide to the Director—

(A) advice on Manufacturing Extension Partnership programs, plans, and policies;

(B) assessments of the soundness of Manufacturing Extension Partnership plans and strategies; and

(C) assessments of current performance against Manufacturing Extension Partnership program plans.

(4) In discharging its duties under this subsection, the MEP Advisory Board shall function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.

(5) The MEP Advisory Board shall transmit an annual report to the Secretary for transmittal to the Congress within 30 days after the submission to the Congress of the President's annual budget request in each year. Such report shall address the status of the Manufacturing Extension Partnership program and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).

(f) COMPETITIVE GRANT PROGRAM.—

(1) ESTABLISHMENT.—The Director shall establish, within the Manufacturing Extension Partnership program under this section and section 26 of this Act, a program of competitive awards among participants described in paragraph (2) for the purposes described in paragraph (3).

(2) PARTICIPANTS.—Participants receiving awards under this subsection shall be the Centers, or a consortium of such Centers.

(3) PURPOSE.—The purpose of the program under this subsection is to develop projects to solve new or emerging manufacturing problems as determined by the Director, in consultation with the Director of the Manufacturing Extension Partnership program, the Manufacturing Extension Partnership Advisory Board, and small and medium-sized manufacturers. One or more themes for the competition may be identified, which may vary from year to year, depending on the needs of manufacturers and the success of previous competitions. These themes shall be related to projects associated with manufacturing extension activities, including supply chain integration and quality management, and including the transfer of technology based on the technological needs of manufacturers and available technologies from institutions of higher education, laboratories, and other technology producing entities, or extend beyond these traditional areas.

(4) APPLICATIONS.—Applications for awards under this subsection shall be submitted in such manner, at such time, and containing such information as the Director shall require, in consultation with the Manufacturing Extension Partnership Advisory Board.

(5) SELECTION.—Awards under this subsection shall be peer reviewed and competitively awarded. The Director shall select proposals to receive awards—

(A) that utilize innovative or collaborative approaches to solving the problem described in the competition;

(B) that will improve the competitiveness of industries in the region in which the Center or Centers are located; and

(C) that will contribute to the long-term economic stability of that region.

(6) PROGRAM CONTRIBUTION.—Recipients of awards under this subsection shall not be required to provide a matching contribution.

[NON-ENERGY INVENTIONS PROGRAM

[SEC. 27. In conjunction with the initial organization of the Institute, the Director shall establish a program for the evaluation of inventions that are not energy-related to complement but not replace the Energy-Related Inventions Program established under section 14 of the Federal Nonnuclear Energy Research and Development Act of 1974 (Public Law 93–577). The Director shall submit an initial implementation plan for this program to accompany the organization plan for the Institute. The implementation plan shall include specific cost estimates, implementation schedules, and mechanisms to help finance the development of technologies the program has determined to have potential. In the preparation of the plan, the Director shall consult with appropriate Federal agencies, including the Small Business Administration and the Department of Energy, State and local government organizations, university officials, and private sector organizations in order to obtain advice on how those agencies and organizations might cooperate with the expansion of this program of the Institute.

[ADVANCED TECHNOLOGY PROGRAM

[SEC. 28. (a) There is established in the Institute an Advanced Technology Program (hereafter in this Act referred to as the "Program") for the purpose of assisting United States businesses in creating and applying the generic technology and research results necessary to—

[(1) commercialize significant new scientific discoveries and technologies rapidly; and

[(2) refine manufacturing technologies.

The Secretary, acting through the Director, shall assure that the Program focuses on improving the competitive position of the United States and its businesses, gives preference to discoveries and to technologies that have great economic potential, and avoids providing undue advantage to specific companies. In operating the Program, the Secretary and Director shall, as appropriate, be guided by the findings and recommendations of the Biennial National Critical Technology Reports prepared pursuant to section 603 of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6683).

[(b) Under the Program established in subsection (a), and consistent with the mission and policies of the Institute, the Secretary, acting through the Director, and subject to subsections (c) and (d), may—

[(1) aid industry-led United States joint research and development ventures (hereafter in this section referred to as "joint ventures") (which may also include universities and independent research organizations), including those involving collaborative technology demonstration projects which develop and test prototype equipment and processes, through—

[(A) provision of organizational and technical advice; and

[(B) participation in such joint ventures by means of grants, cooperative agreements, or contracts, if the Secretary, acting through the Director, determines participation to be appropriate, which may include (i) partial start-up funding, (ii) provision of a minority share of the cost of such joint ventures for up to 5 years, and (iii) making available equipment, facilities, and personnel,

provided that emphasis is placed on areas where the Institute has scientific or technological expertise, on solving generic problems of specific industries, and on making those industries more competitive in world markets;

[(2) provide grants to and enter into contracts and cooperative agreements with United States businesses (especially small businesses), provided that emphasis is placed on applying the Institute's research, research techniques, and expertise to those organizations' research programs;

[(3) involve the Federal laboratories in the Program, where appropriate, using among other authorities the cooperative research and development agreements provided for under section 12 of the Stevenson-Wydler Technology Innovation Act of 1980; and

[(4) carry out, in a manner consistent with the provisions of this section, such other cooperative research activities with

joint ventures as may be authorized by law or assigned to the Program by the Secretary.

[(c) The Secretary, acting through the Director, is authorized to take all actions necessary and appropriate to establish and operate the Program, including—

[(1) publishing in the Federal Register draft criteria and, no later than six months after the date of the enactment of this section, following a public comment period, final criteria, for the selection of recipients of assistance under subsection (b) (1) and (2);

[(2) monitoring how technologies developed in its research program are used, and reporting annually to the Congress on the extent of any overseas transfer of these technologies;

[(3) establishing procedures regarding financial reporting and auditing to ensure that contracts and awards are used for the purposes specified in this section, are in accordance with sound accounting practices, and are not funding existing or planned research programs that would be conducted in the same time period in the absence of financial assistance under the Program;

[(4) assuring that the advice of the Committee established under section 10 is considered routinely in carrying out the responsibilities of the Institute; and

[(5) providing for appropriate dissemination of Program research results.

[(d) When entering into contracts or making awards under subsection (b), the following shall apply:

[(1) No contract or award may be made until the research project in question has been subject to a merit review, and has, in the opinion of the reviewers appointed by the Director and the Secretary, acting through the Director, been shown to have scientific and technical merit.

[(2) In the case of joint ventures, the Program shall not make an award unless the award will facilitate the formation of a joint venture or the initiation of a new research and development project by an existing joint venture.

[(3) No Federal contract or cooperative agreement under subsection (b)(2) shall exceed $2,000,000 over 3 years, or be for more than 3 years unless a full and complete explanation of such proposed award, including reasons for exceeding these limits, is submitted in writing by the Secretary to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives. The proposed contract or cooperative agreement may be executed only after 30 calendar days on which both Houses of Congress are in session have elapsed since such submission. Federal funds made available under subsection (b)(2) shall be used only for direct costs and not for indirect costs, profits, or management fees of the contractor.

[(4) In determining whether to make an award to a particular joint venture, the Program shall consider whether the members of the joint venture have made provisions for the appropriate participation of small United States businesses in such joint venture.

[(5) Section 552 of title 5, United States Code, shall not apply to the following information obtained by the Federal Government on a confidential basis in connection with the activities of any business or any joint venture receiving funding under the Program—

[(A) information on the business operation of any member of the business or joint venture; and

[(B) trade secrets possessed by any business or any member of the joint venture.

[(6) Intellectual property owned and developed by any business or joint venture receiving funding or by any member of such a joint venture may not be disclosed by any officer or employee of the Federal Government except in accordance with a written agreement between the owner or developer and the Program.

[(7) If a business or joint venture fails before the completion of the period for which a contract or award has been made, after all allowable costs have been paid and appropriate audits conducted, the unspent balance of the Federal funds shall be returned by the recipient to the Program.

[(8) Upon dissolution of any joint venture or at the time otherwise agreed upon, the Federal Government shall be entitled to a share of the residual assets of the joint venture proportional to the Federal share of the costs of the joint venture as determined by independent audit.

[(9) A company shall be eligible to receive financial assistance under this section only if—

[(A) the Secretary finds that the company's participation in the Program would be in the economic interest of the United States, as evidenced by investments in the United States in research, development, and manufacturing (including, for example, the manufacture of major components or subassemblies in the United States); significant contributions to employment in the United States; and agreement with respect to any technology arising from assistance provided under this section to promote the manufacture within the United States of products resulting from that technology (taking into account the goals of promoting the competitiveness of United States industry), and to procure parts and materials from competitive suppliers; and

[(B) either—

[(i) the company is a United States-owned company; or

[(ii) the Secretary finds that the company is incorporated in the United States and has a parent company which is incorporated in a country which affords to United States-owned companies opportunities, comparable to those afforded to any other company, to participate in any joint venture similar to those authorized under this Act; affords to United States-owned companies local investment opportunities comparable to those afforded to any other company; and affords adequate and effective protection for the intellectual property rights of United States-owned companies.

[(10) Grants, contracts, and cooperative assignments under this section shall be designed to support projects which are high risk and which have the potential for eventual substantial widespread commercial application. In order to receive a grant, contract, or cooperative agreement under this section, a research and development entity shall demonstrate to the Secretary the requisite ability in research and technology development and management in the project area in which the grant, contract, or cooperative agreement is being sought.

[(11)(A) Title to any intellectual property arising from assistance provided under this section shall vest in a company or companies incorporated in the United States. The United States may reserve a nonexclusive, nontransferable, irrevocable paid-up license, to have practiced for or on behalf of the United States, in connection with any such intellectual property, but shall not, in the exercise of such license, publicly disclose proprietary information related to the license. Title to any such intellectual property shall not be transferred or passed, except to a company incorporated in the United States, until the expiration of the first patent obtained in connection with such intellectual property.

[(B) For purposes of this paragraph, the term "intellectual property" means an invention patentable under title 35, United States Code, or any patent on such an invention.

[(C) Nothing in this paragraph shall be construed to prohibit the licensing to any company of intellectual property rights arising from assistance provided under this section.

[(e) The Secretary may, within 30 days after notice to Congress, suspend a company or joint venture from continued assistance under this section if the Secretary determines that the company, the country of incorporation of the company or a parent company, or the joint venture has failed to satisfy any of the criteria set forth in subsection (d)(9), and that it is in the national interest of the United States to do so.

[(f) When reviewing private sector requests for awards under the Program, and when monitoring the progress of assisted research projects, the Secretary and the Director shall, as appropriate, coordinate with the Secretary of Defense and other senior Federal officials to ensure cooperation and coordination in Federal technology programs and to avoid unnecessary duplication of effort. The Secretary and the Director are authorized to work with the Director of the Office of Science and Technology Policy, the Secretary of Defense, and other appropriate Federal officials to form interagency working groups or special project offices to coordinate Federal technology activities.

[(g) In order to analyze the need for the value of joint ventures and other research projects in specific technical fields, to evaluate any proposal made by a joint venture or company requesting the Secretary's assistance, or to monitor the progress of any joint venture or any company research project which receives Federal funds under the Program, the Secretary, the Under Secretary of Commerce for Technology, and the Director may, notwithstanding any other provision of law, meet with such industry sources as they consider useful and appropriate.

[(h) Up to 10 percent of the funds appropriated for carrying out this section may be used for standards development and technical activities by the Institute in support of the purposes of this section.

[(i) In addition to such sums as may be authorized and appropriated to the Secretary and Director to operate the Program, the Secretary and Director also may accept funds from other Federal departments and agencies for the purpose of providing Federal funds to support awards under the Program. Any Program award which is supported with funds which originally came from other Federal departments and agencies shall be selected and carried out according to the provisions of this section.

[(j) As used in this section—

[(1) the term "joint venture" means any group of activities, including attempting to make, making, or performing a contract, by two or more persons for the purpose of—

[(A) theoretical analysis, experimentation, or systematic study of phenomena or observable facts;

[(B) the development or testing of basic engineering techniques;

[(C) the extension of investigative finding or theory of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, prototypes, equipment, materials, and processes;

[(D) the collection, exchange, and analysis of research information;

[(E) the production of any product, process, or service; or

[(F) any combination of the purposes specified in subparagraphs (A), (B), (C), (D), and (E),

and may include the establishment and operation of facilities for the conducting of research, the conducting of such venture on a protected and proprietary basis, and the prosecuting of applications for patents and the granting of licenses for the results of such venture; and

[(2) the term "United States-owned company" means a company that has majority ownership or control by individuals who are citizens of the United States.]

TECHNOLOGY INNOVATION PROGRAM

SEC. 28. (a) ESTABLISHMENT.—There is established in the Institute a Technology Innovation Program for the purpose of assisting United States businesses and institutions of higher education or other organizations, such as national laboratories and nonprofit research institutes, to accelerate the development and application of challenging, high-risk technologies that promise widespread economic benefits for the Nation.

(b) GRANTS.—

(1) IN GENERAL.—The Director shall make grants under this section to eligible companies for research and development on high-risk, high-payoff emerging and enabling technologies that offer significant potential benefits to the United States economy and a wide breadth of potential application, and form an important technical basis for future innovations. Such grants shall be made to eligible companies that are—

(A) small or medium-sized businesses that are substantially involved in the research and development, including having a leadership role in programmatically steering the project and defining the research agenda; or

(B) joint ventures.

(2) SINGLE COMPANY GRANTS.—No grant made under paragraph (1)(A) shall exceed $3,000,000 over 3 years. The Federal share of a project funded by such a grant shall not be more than 50 percent of total project costs. An award under paragraph (1)(A) may be extended beyond 3 years only if the Director transmits to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a full and complete explanation of such award, including reasons for exceeding 3 years. Federal funds granted under paragraph (1)(A) may be used only for direct costs and not for indirect costs, profits, or management fees of a contractor.

(3) JOINT VENTURE GRANTS.—No grant made under paragraph (1)(B) shall exceed $9,000,000 over 5 years. The Federal share of a project funded by such a grant shall not be more than 50 percent of total project costs.

(c) AWARD CRITERIA.—The Director shall award grants under this section only to an eligible company—

(1) whose proposal has scientific and technological merit;

(2) whose application establishes that the proposed technology has strong potential to generate substantial benefits to the Nation that extend significantly beyond the direct return to the applicant;

(3) whose application establishes that the research has strong potential for advancing the state-of-the-art and contributing significantly to the United States scientific and technical knowledge base;

(4) whose application establishes that the research is aimed at overcoming a scientific or technological barrier;

(5) who has provided a technical plan that clearly identifies the core innovation, the technical approach, major technical hurdles, and the attendant risks, and that clearly establishes the feasibility of the technology through adequately detailed plans linked to major technical barriers;

(6) whose application establishes that the team proposed to carry out the work has a high level of scientific and technical expertise to conduct research and development, has a high level of commitment to the project, and has access to appropriate research facilities;

(7) whose proposal explains why Technology Innovation Program support is necessary;

(8) whose application includes a plan for advancing the technology into commercial use; and

(9) whose application assesses the project's organizational structure and management plan.

(d) EXTERNAL REVIEW OF PROPOSALS.—In order to analyze the need for or the value of any proposal made by a joint venture or company requesting the Director's assistance under this section, or to monitor the progress of any project which receives funds under this section, the Director shall consult with industry or other expert

sources that do not have a proprietary or financial interest in the proposal or project.

(e) INTELLECTUAL PROPERTY RIGHTS OWNERSHIP.—

(1) IN GENERAL.—Title to any intellectual property developed by a joint venture from assistance provided under this section may vest in any participant in the joint venture, as agreed by the members of the joint venture, notwithstanding section 202(a) and (b) of title 35, United States Code. The United States may reserve a nonexclusive, nontransferable, irrevocable paid-up license, to have practiced for or on behalf of the United States in connection with any such intellectual property, but shall not in the exercise of such license publicly disclose proprietary information related to the license. Title to any such intellectual property shall not be transferred or passed, except to a participant in the joint venture, until the expiration of the first patent obtained in connection with such intellectual property.

(2) LICENSING.—Nothing in this subsection shall be construed to prohibit the licensing to any company of intellectual property rights arising from assistance provided under this section.

(3) DEFINITION.—For purposes of this subsection, the term "intellectual property" means an invention patentable under title 35, United States Code, or any patent on such an invention, or any work for which copyright protection is available under title 17, United States Code.

(f) PROGRAM OPERATION.—Not later than 9 months after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall issue regulations—

(1) establishing criteria for the selection of recipients of assistance under this section;

(2) establishing procedures regarding financial reporting and auditing to ensure that contracts and awards are used for the purposes specified in this section, are in accordance with sound accounting practices, and are not funding existing or planned research programs that would be conducted in the same time period in the absence of financial assistance under this section; and

(3) providing for appropriate dissemination of Technology Innovation Program research results.

(g) CONTINUATION OF ATP GRANTS.—The Director shall, through the Technology Innovation Program, continue to provide support originally awarded under the Advanced Technology Program, in accordance with the terms of the original award.

(h) COORDINATION WITH OTHER FEDERAL TECHNOLOGY PROGRAMS.—In carrying out this section, the Director shall, as appropriate, coordinate with other senior Federal officials to ensure cooperation and coordination in Federal technology programs and to avoid unnecessary duplication of efforts.

(i) ACCEPTANCE OF FUNDS FROM OTHER FEDERAL AGENCIES.—In addition to amounts appropriated to carry out this section, the Secretary and the Director may accept funds from other Federal agencies to support awards under the Technology Innovation Program. Any award under this section which is supported with funds from other Federal agencies shall be selected and carried out according to the provisions of this section.

(j) TIP ADVISORY BOARD.—

(1) ESTABLISHMENT.—There is established within the Institute a Technology Innovation Program Advisory Board. The TIP Advisory Board shall consist of 10 members appointed by the Director, at least 7 of which shall be from United States industry, chosen to reflect the wide diversity of technical disciplines and industrial sectors represented in Technology Innovation Program projects. No member shall be an employee of the Federal Government.

(2) TERMS OF OFFICE.—(A) Except as provided in subparagraph (B) or (C), the term of office of each member of the TIP Advisory Board shall be 3 years.

(B) The original members of the TIP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

(C) Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

(D) Any person who has completed two consecutive full terms of service on the TIP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

(3) PURPOSE.—The TIP Advisory Board shall meet no less than 2 times annually, and provide to the Director—

(A) advice on programs, plans, and policies of the Technology Innovation Program;

(B) reviews of the Technology Innovation Program's efforts to assess its economic impact;

(C) reports on the general health of the program and its effectiveness in achieving its legislatively mandated mission;

(D) guidance on areas of technology that are appropriate for Technology Innovation Program funding; and

(E) recommendations as to whether, in order to better assess whether specific innovations to be pursued are being adequately supported by the private sector, the Director could benefit from advice and information from additional industry and other expert sources without a proprietary or financial interest in proposals being evaluated.

(4) ADVISORY CAPACITY.—In discharging its duties under this subsection, the TIP Advisory Board shall function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.

(5) ANNUAL REPORT.—The TIP Advisory Board shall transmit an annual report to the Secretary for transmittal to the Congress within 30 days after the submission to Congress of the President's annual budget request in each year. Such report shall address the status of the Technology Innovation Program and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).

(k) DEFINITIONS.—For purposes of this section—

(1) the term "eligible company" means a company that is incorporated in the United States and does a majority of its business in the United States, and that either—

(A) is majority owned by citizens of the United States; or

(B) is owned by a parent company incorporated in another country and the Director finds that—

(i) the company's participation in the Technology Innovation Program would be in the economic interest of the United States, as evidenced by—

(I) investments in the United States in research and manufacturing (including the manufacture of major components or subassemblies in the United States);

(II) significant contributions to employment in the United States; and

(III) agreement with respect to any technology arising from assistance provided under this section to promote the manufacture within the United States of products resulting from that technology (taking into account the goals of promoting the competitiveness of United States industry); and

(ii) the company is incorporated in a country which—

(I) affords to United States-owned companies opportunities, comparable to those afforded to any other company, to participate in any joint venture similar to those receiving funding under this section;

(II) affords to United States-owned companies local investment opportunities comparable to those afforded any other company; and

(III) affords adequate and effective protection for the intellectual property rights of United States-owned companies;

(2) the term "institution of higher education" has the meaning given that term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001);

(3) the term "joint venture" means a joint venture that—

(A) includes either—

(i) at least 2 separately owned for-profit companies that are both substantially involved in the project and both of which are contributing to the cost-sharing required under this section, with the lead entity of the joint venture being one of those companies that is a small or medium-sized business; or

(ii) at least one small or medium-sized business and one institution of higher education or other organization, such as a national laboratory or nonprofit research institute, that are both substantially involved in the project and both of which are contributing to the cost-sharing required under this section, with the lead entity of the joint venture being either that small or medium-sized business or that institution of higher education; and

(B) may include additional for-profit companies, institutions of higher education, and other organizations, such as national laboratories and nonprofit research institutes, that may or may not contribute non-Federal funds to the project; and

(4) the term "TIP Advisory Board" means the advisory board established under subsection (j).

* * * * * * *

SEC. 33. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.

(a) AUTHORITY.—

(1) ESTABLISHMENT.—The Director shall establish a pilot program of awards to partnerships among participants described in paragraph (2) for the purposes described in paragraph (3). Awards shall be made on a peer-reviewed, competitive basis.

(2) PARTICIPANTS.—Such partnerships shall include at least—

(A) 1 manufacturing industry partner; and

(B) 1 nonindustry partner.

(3) PURPOSE.—The purpose of the program under this section is to foster cost-shared collaborations among firms, educational institutions, research institutions, State agencies, and nonprofit organizations to encourage the development of innovative, multidisciplinary manufacturing technologies. Partnerships receiving awards under this section shall conduct applied research to develop new manufacturing processes, techniques, or materials that would contribute to improved performance, productivity, and competitiveness of United States manufacturing, and build lasting alliances among collaborators.

(b) PROGRAM CONTRIBUTION.—Awards under this section shall provide for not more than one-third of the costs of a partnership. Not more than an additional one-third of such costs may be obtained directly or indirectly from other Federal sources.

(c) APPLICATIONS.—Applications for awards under this section shall be submitted in such manner, at such time, and containing such information as the Director shall require. Such applications shall describe at a minimum—

(1) how each partner will participate in developing and carrying out the research agenda of the partnership;

(2) the research that the grant would fund; and

(3) how the research to be funded with the award would contribute to improved performance, productivity, and competitiveness of the United States manufacturing industry.

(d) SELECTION CRITERIA.—In selecting applications for awards under this section, the Director shall consider at a minimum—

(1) the degree to which projects will have a broad impact on manufacturing;

(2) the novelty and scientific and technical merit of the proposed projects; and

(3) the demonstrated capabilities of the applicants to successfully carry out the proposed research.

(e) DISTRIBUTION.—In selecting applications under this section the Director shall ensure, to the extent practicable, a distribution of

overall awards among a variety of manufacturing industry sectors and a range of firm sizes.

(f) DURATION.—In carrying out this section, the Director shall run a single pilot competition to solicit and make awards. Each award shall be for a 3-year period.

SEC. [32] *34.* This Act may be cited as the National Institute of Standards and Technology Act.

SECTION 3570 OF THE REVISED STATUTES OF THE UNITED STATES

[SEC. 3570. The tables in the schedule hereto annexed shall be recognized in the construction of contracts, and in all legal proceedings, as establishing, in terms of the weights and measures now in use in the United States, the equivalents of the weights and measures expressed therein in terms of the metric system; and the tables may lawfully be used for computing, determining, and expressing in customary weights and measures the weights and measures of the metric system.]

SEC. 3570. METRIC SYSTEM DEFINED.

The metric system of measurement shall be defined as the International System of Units as established in 1960, and subsequently maintained, by the General Conference of Weights and Measures, and as interpreted or modified for the United States by the Secretary of Commerce.

ACT OF JULY 21, 1950

AN ACT To redefine the units and establish the standards of electrical and photometric measurements.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, [That from and after the date this Act is approved, the legal units of electrical and photometric measurement in the United States of America shall be those defined and established as provided in the following sections.

[SEC. 2. The unit of electrical resistance shall be the ohm, which is equal to one thousand million units of resistance of the centimeter-gram-second system of electromagnetic units.

[SEC. 3. The unit of electric current shall be the ampere, which is one-tenth of the unit of current of the centimeter-gram-second system of electromagnetic units.

[SEC. 4. The unit of electromotive force and of electric potential shall be the volt, which is the electromotive force that, steadily applied to a conductor whose resistance is one ohm, will produce a current of one ampere.

[SEC. 5. The unit of electric quantity shall be the coulomb, which is the quantity of electricity transferred by a current of one ampere in one second.

[SEC. 6. The unit of electrical capacitance shall be the farad, which is the capacitance of a capacitor that is charged to a potential of one volt by one coulomb of electricity.

[SEC. 7. The unit of electrical inductance shall be the henry, which is the inductance in a circuit such that an electromotive

force of one volt is induced in the circuit by variation of an inducing current at the rate of one ampere per second.

[SEC. 8. The unit of power shall be the watt, which is equal to ten million units of power in the centimeter-gram-second system, and which is the power required to cause an unvarying current of one ampere to flow between points differing in potential by one volt.

[SEC. 9. The units of energy shall be (a) the joule, which is equivalent to the energy supplied by a power of one watt operating for one second, and (b) the kilowatt-hour, which is equivalent to the energy supplied by a power of one thousand watts operating for one hour.

[SEC. 10. The unit of intensity of light shall be the candela, which is one-sixtieth of the intensity of one square centimeter of a perfect radiator, known as a "black body", when operated at the temperature of freezing platinum.

[SEC. 11. The unit of flux of light shall be the lumen, which is the flux in a unit of solid angle from a source of which the intensity is one candela.

[SEC. 12. It shall be the duty of the Secretary of Commerce to establish the values of the primary electric and photometric units in absolute measure, and the legal values for these units shall be those represented by, or derived from, national reference standards maintained by the Department of Commerce.

[SEC. 13. The Act of July 12, 1894 (Public Law Numbered 105, Fifty-third Congress), entitled "An Act to define and establish the units of electrical measure", is hereby repealed.]

ACT OF MARCH 19, 1918

AN ACT To save daylight and to provide standard time for the United States.

(Commonly known as the "Calder Act")

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of establishing the standard time of the United States, the territory of the United States shall be divided into nine zones in the manner provided in this section. [Except as provided in section 3(a) of the Uniform Time Act of 1966, the standard time of the first zone shall be based on the mean solar time of the sixtieth degree of longitude west from Greenwich; that of the second zone on the seventy-fifth degree; that of the third zone on the ninetieth degree; that of the fourth zone on the one hundred and fifth degree; that of the fifth zone on the one hundred and twentieth degree; that of the sixth zone on the one hundred and thirty-fifth degree; that of the seventh zone on the one hundred and fiftieth degree; that of the eighth zone on the one hundred and sixty-fifth degree; and that of the ninth zone on the one hundred and fiftieth meridian of longitude east from Greenwich..] *Except as provided in section 3(a) of the Uniform Time Act of 1966 (15 U.S.C. 260a), the standard time of the first zone shall be Coordinated Universal Time retarded by 4 hours; that of the second zone retarded by 5 hours; that of the third zone retarded by 6 hours; that of the four zone retarded by 7 hours; that of the fifth zone retarded by 8 hours; that of the sixth zone retarded by 9 hours; that of the seventh zone retarded by 10*

hours; that of the eighth zone retarded by 11 hours; and that of the ninth zone shall be Coordinated Universal Time advanced by 10 hours. The limits of each zone shall be defined by an order of the Secretary of Transportation, having regard for the convenience of commerce and the existing junction points and division points of common carriers engaged in interstate or foreign commerce, and any such order may be modified from time to time. As used in this Act, the term "interstate or foreign commerce" means commerce between a State, the District of Columbia, the Commonwealth of Puerto Rico, or any possession of the United states and any place outside thereof. *In this section, the term "Coordinated Universal Time" means the time scale maintained through the General Conference of Weights and Measures and interpreted or modified for the United States by the Secretary of Commerce in coordination with the Secretary of the Navy.*

* * * * * * *

SEC. 3. In the division of territory, and in the definition of the limits of each zone, as hereinbefore provided, so much of the State of Idaho as lies south of the Salmon River, traversing the State from east to west near forty-five degrees thirty minutes latitude shall be embraced in the [third zone] *fourth zone*: *Provided,* That common carriers within such portion of the State of Idaho may conduct their operations on Pacific time.

SECTION 17 OF THE STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980

SEC. 17. MALCOLM BALDRIGE NATIONAL QUALITY AWARD.

(a) * * *

* * * * * * *

(c) CATEGORIES IN WHICH AWARD MAY BE GIVEN.—(1) * * *

* * * * * * *

[(3) Not more than two awards may be made within any subcategory in any year, unless the Secretary determines that a third award is merited and can be given at no additional cost to the Federal Government (and no award shall be made within any category or subcategory if there are no qualifying enterprises in that category or subcategory).]

(3) In any year, not more than 18 awards may be made under this section to recipients who have not previously received an award under this section, and no award shall be made within any category described in paragraph (1) if there are no qualifying enterprises in that category.

XX. COMMITTEE RECOMMENDATIONS

On April 25, 2007, the Committee on Science and Technology favorably reported the *Technology Innovation and Manufacturing Stimulation Act of 2007* by a voice vote, and recommended its enactment.

XXI. MINORITY VIEWS

None.

XXII. Proceedings of the Markup by the Subcommittee on Technology and Innovation on H.R. 1868, the Technology Innovation and Manufacturing Stimulation Act of 2007

The Subcommittee met, pursuant to call, at 10:15 a.m., in Room 2318 of the Rayburn House Office Building, Hon. David Wu [Chairman of the Subcommittee] presiding.

Chairman Wu. Good morning. The Subcommittee on Technology and Innovation will come to order, pursuant to notice. The Subcommittee on Technology and Innovation meets to consider the following measure, H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007*. We will now proceed to the markup, beginning with opening statements, and I shall begin.

I would like to welcome everyone to the first markup of the Technology and Innovation Subcommittee. Today we will be marking up H.R. 1868, a bill that reauthorizes the programs of the National Institute of Standards and Technology, or NIST. NIST has not had a comprehensive reauthorization since 1992, and it is long overdue. Dr. Ehlers shares this viewpoint, and I am hoping that together we can get this bipartisan bill to the President for signature. I thank Dr. Gingrey, Dr. Ehlers, and Ranking Member Hall for working with us, together in a spirit of cooperation, to craft this legislation. This bill contains several provisions from H.R. 255, introduced by Dr. Ehlers earlier this year. H.R. 1868 is a stronger bill as a result of this bipartisan effort.

For over 100 years, NIST has made important contributions to public safety, industrial competitiveness, and economic growth through standards and measurements. NIST will be a key part of American innovation in the next 100 years. Today's bill, the *Technology Innovation and Manufacturing Stimulation Act of 2007,* puts NIST on a 10-year path to doubling as an investment in our innovation future. It strengthens the internal research being performed at NIST, so that its Nobel Prize winning work will continue to make key scientific advances.

It funds construction projects to improve laboratory facilities at both the Boulder, Colorado and Gaithersburg, Maryland campuses. It grows the Manufacturing Extension Partnership program so that more small manufacturers around the country can benefit from the important services MEP provides, and it replaces the Advanced Technology Program with an innovative effort to target small- and medium-sized businesses for limited cost-shared funding of technological breakthroughs, which potentially have broad public benefit.

H.R. 1868 also makes important changes to manufacturing policy that were adopted from Dr. Ehlers' bill, H.R. 255, including the creation of a Manufacturing Extension Center competitive grant program, a collaborative manufacturing pilot program, and a set of manufacturing research fellowships at NIST. These programs will

encourage advances in manufacturing technology and help overcome technical barriers to innovation.

Specifically, H.R. 1868 authorizes the NIST laboratory programs at $471 million in fiscal year 2008, $498 million in fiscal year 2009, and $538 million in fiscal year 2010. These numbers put the lab programs on a path to doubling in 10 years, consistent with the President's American Competitiveness Initiative.

The bill authorizes the Malcolm Baldrige National Quality Award Program at $7.9 million, fiscal year 2008, $8.1 million in fiscal year 2009, and $8.3 million in fiscal year 2010. It authorizes the Construction and Maintenance Account at $94 million in fiscal year 2008, $86 million in fiscal year 2009, and $50 million in fiscal year 2010. These amounts fund the completion of the laboratory construction at NIST's Boulder, Colorado campus, and upgrades to the NIST Center for Neutron Research at Gaithersburg, Maryland. They also provide funding for routine maintenance of the existing facilities.

The bill authorizes the MEP Partnership at $113 million in fiscal year 2008, $122 million in fiscal year 2009, and $132 million in fiscal year 2010. These amounts put the MEP program on a path to doubling in 10 years, and are supported by the American Small Manufacturers' Coalition.

The bill creates the Technology Innovation Program, which responds to global innovation competition by funding high-risk, high-reward, pre-competitive technology development, with high potential for public benefit, focusing on small- and medium-sized high-tech firms. Many of these policy changes were suggested by the Administration in a legislative package submitted to Congress in 2002.

H.R. 1868 also requires the NIST Director to submit a programmatic planning document that will address the plans for NIST's direction in the next three years. It requires the Visiting Committee to comment on the three year plans, and establishes, in statute, advisory boards for both the MEP and the Technology Innovation Program, and requires the Advisory Boards to comment on the Director's three-year plans.

As Chairman of this subcommittee, and a Member of the Science and Technology Committee since 1999, I am very familiar with NIST. But despite its important role, many of my colleagues in Congress, and many leaders in business industry, don't know very much about NIST, or about the importance of standards in fostering innovation, competitiveness, and economic growth. Today's bill is an important first step in a broader discussion we need to have about standards, technology and competitiveness.

Now I would like to recognize the Ranking Member of the Subcommittee, and the co-sponsor of this bill, Dr. Gingrey, for his comments.

[The prepared statement of Chairman Wu follows:]

PREPARED STATEMENT OF CHAIRMAN DAVID WU

Good morning. I'd like to welcome everyone to the first markup of the Technology and Innovation Subcommittee. Today we will be marking up H.R. 1868, a bill that reauthorizes the programs of the National Institute of Standards and Technology (NIST). NIST has not had a comprehensive reauthorization since 1992, and it is long overdue. Dr. Ehlers shares this view and I'm hoping that together we can get

this bipartisan bill to the President. I thank Dr. Gingrey, Dr. Ehlers, and Ranking Member Hall for working with us in a spirit of cooperation to craft this legislation. This bill contains several provisions from H.R. 255, introduced by Dr. Ehlers earlier this year. H.R. 1868 is a stronger bill as a result of this bipartisan effort.

For over 100 years, NIST has made important contributions to public safety, industrial competitiveness, and economic growth through standards and measurements. NIST will be a key part of American innovation in the next 100 years. Today's bill, the *Technology Innovation and Manufacturing Stimulation Act of 2007,* puts NIST on a ten-year path to doubling as an investment in our innovation future. It strengthens the internal research being performed at NIST, so that its Nobel Prize winning work will continue to make key scientific advances. It funds construction projects to improve laboratory facilities at both the Bolder, CO and Gaithersburg, MD campuses. It grows the Manufacturing Extension Partnership program, so that more small manufacturers around the country can benefit from the important services MEP provides. And it replaces the Advanced Technology Program with an innovative effort to target small- and medium-sized businesses for limited cost-shared funding of technological breakthroughs which potentially have broad public benefits.

H.R. 1868 also makes important changes to manufacturing policy that were adopted from Dr. Ehlers' bill, H.R. 255, including the creation of a Manufacturing Extension Center competitive grant program, a collaborative manufacturing pilot grant program, and a set of manufacturing research fellowships at NIST. These programs will encourage advances in manufacturing technology and help overcome technical barriers to innovation.

Specifically, H.R. 1868:

- Authorizes the NIST laboratory programs at $471 million in FY08, $498 million in FY09, and $538 million in FY10. These numbers put the lab programs on a path to doubling in ten years, consistent with the President's American Competitiveness Initiative.
- Authorizes the Malcolm Baldrige National Quality Award Program at $7.9 million in FY08, $8.1 million in F09, and $8.3 million in FY10.
- Authorizes the construction and maintenance account at $94 million in FY08, $86 million in FY09, and $50 million in FY10. These amounts fund the completion of laboratory construction at NIST's Boulder, CO campus, and upgrades to the NIST Center for Neutron Research at the Gaithersburg, MD campus. They also provide funding for routine maintenance of the existing facilities.
- Authorizes the Manufacturing Extension Partnership at $113 million in FY08, $122 million in FY09, and $132 million in FY10. These amounts put the MEP program on a path to doubling in ten years, and are supported by the American Small Manufacturers Coalition.
- Creates the Technology Innovation Program, which responds to global innovation competition by funding high-risk, high-reward, pre-competitive technology development with high potential for public benefit, focusing on small- and medium-sized high-tech firms. Many of these policy changes were suggested by the Administration in a legislative package it submitted to Congress in 2002. The bill provides for $45 million in new Technology Innovation Program grants each year.

H.R. 1868 also:

- Requires the NIST Director to submit an annual programmatic planning document that will address the plans for NIST's direction in the next three years. There is agreement on doubling NIST's budget, and we need to develop a roadmap on how NIST can best use these new resources.
- Requires the Visiting Committee to comment on the three-year plans.
- Establishes in statute Advisory Boards for both the MEP and the Technology Innovation Program, and requires the Advisory Boards to comment on the Director's three-year plans.

As Chairman of this subcommittee and a Member of the Science and Technology Committee since 1999, I am very familiar with NIST. But despite its important role, many of my colleagues in Congress and many leaders in business and industry don't know very much about NIST, or about the importance of standards in fostering innovation, competitiveness, and economic growth. Today's bill is an important first step in a broader discussion we need to have about standards, technology, and competitiveness.

Now I would like to recognize the Ranking Member of the Subcommittee, and co-sponsor of the bill, Dr. Gingrey, for his comments.

Mr. GINGREY. Thank you, Chairman, and I thank you for holding the markup today to consider H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007.* I am an original co-sponsor of this bill because I believe it will ensure our nation's technological competitiveness for decades to come.

Last year, with his American Competitiveness Initiative, President Bush provided a vision to maintain America's position in the global marketplace by doubling our investment in physical science research over the next 10 years. H.R. 1868 helps fulfill the President's vision by authorizing the lab programs at the National Institute of Standards and Technology, or, as we know it since 100 years ago, NIST.

As Congress looks to the future of the technology industry in this country, NIST research will prove to be indispensable for the maturation of cutting-edge basic research into successful commercial products. I thank Chairman Wu for incorporating our priorities for NIST into this comprehensive authorization bill, and for incorporating concerns from NIST into the technical amendment we will consider today.

At this point, I would like to yield the balance of my time, Mr. Chairman, to the gentleman from Michigan, Mr. Ehlers, and I know he wants to make some brief remarks on this bill, as he has worked so hard in crafting it. And I yield now to the gentlemen from Michigan.

[The prepared statement of Mr. Gingrey follows:]

PREPARED STATEMENT OF REPRESENTATIVE PHIL GINGREY

Thank you Mr. Chairman. I thank you for holding this markup today to consider H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007.* I am an original co-sponsor of this bill because I believe it will ensure our nation's technological competitiveness for decades to come. Last year, with his American Competitiveness Initiative, President Bush provided a vision to maintain America's position in the global marketplace by doubling our investment in physical science research over the next ten years. H.R. 1868 helps fulfill the President's vision by authorizing the lab programs National Institute of Standards and Technology, or NIST. As Congress looks to the future of the technology industry in this country, NIST research will prove to be indispensable for the maturation of cutting-edge basic research into successful commercial products. I thank Chairman Wu for incorporating our priorities for NIST into this comprehensive authorization bill and for incorporating concerns from NIST into the technical amendment we will consider today. I yield the balance of my time to the gentleman from Michigan, Dr. Ehlers, to make some brief remarks on this bill.

Mr. EHLERS. I thank the gentlemen very much for yielding, and I appreciate his hard work on this. It is amusing just to think back a year, when we were working on the same bill, much more restrictive than this one, and I think this is an improvement, but roles were reversed last year. Mr. Chairman, you were sitting on this side, and I was sitting in your seat. I am pleased we worked so well together then, and we continue to work together well now.

I will just give a brief oral statement, and I ask that, without objection, my full statement be entered into the record.

The *Technology Innovation and Manufacturing Stimulation Act* is a bill of great importance to our national competitiveness. The National Institute of Standards and Technology, better known as NIST, plays a pivotal role in the innovation process by working

very closely with industry on programs to transfer innovative technologies from the laboratory into the field.

A key aspect of that is the Manufacturing Extension Partnership, and I have encountered some individual who question the appropriateness of the Federal Government doing this. My response is very simple. We have been doing it for almost 150 years, through the Cooperative Extension Service for Agriculture. We still spend $400 million a year on agriculture cooperative extension which, incidentally, employs less than two percent of the people in the country. I fail to understand those people who object to this, when, in fact, we spend $400 million a year on less than two percent of the population, we have 15 percent of our population in manufacturing. What is so terrible about spending $100 million to help that industry along? End of sermon. Back to my prepared statement.

The President's American Competitiveness Initiative, started in 2006, thanks to the work of many of the Members of this committee, as well as the work of Norm Augustine on the National Academy of Sciences' report. But the President was kind enough to develop the American Competitiveness Initiative, which launched a three-pronged approach to competitiveness by strengthening research at the National Science Foundation, the Office of Science at the Department of Energy, and the laboratory research and construction accounts of NIST. This bill addresses the last of these agencies by fully supporting the ACI requested improvements, as well as reauthorizing programs at NIST crucial to our global competitiveness. I am proud that this bill has been crafted in a bipartisan manner and incorporates many ideas included in the legislation that I introduced in both the 108th and 109th Congresses, focused on strengthening U.S. manufacturing. In both Congresses the bill was passed by the House. I might also add that this afternoon, another subcommittee of the Science Committee will be considering the same aspect as related to the National Science Foundation. So at the end of this week we will be batting two out of three. Now, that is a higher percentage than almost any major leaguer gets.

Although manufacturing has experienced tremendous technological gains over the last few years, international competition has exacted a terrible toll on our nation's manufacturers. This bill will help address long-term problems facing our nation's manufacturers by broadening and strengthening manufacturing extension services and creating a new program to revive manufacturing innovation through collaborative research and development.

I know my colleagues understand that it is incredibly important to our future for this nation to remain competitive today. Congress must provide a coherent federal response to the changes that are underway in manufacturing, and to support the technological innovation that is fundamental to retaining our manufacturing strength. This bill provides a mechanism for that crucial response, and I look forward to working with my colleagues on this issue in the 110th Congress.

I once again thank the Chairman of this subcommittee and the Ranking Republican Member for their hard work on this bill, and I deeply appreciate their cooperation.

With that, I yield back.

[The prepared statement of Mr. Ehlers follows:]

PREPARED STATEMENT OF REPRESENTATIVE VERNON J. EHLERS

The *Technology Innovation and Manufacturing Stimulation Act* is a bill of great importance to our national competitiveness. This committee has held multiple hearings on national competitiveness and innovation, and I would like to note that one of the recommendations of the National Academy's *Gathering Storm* report was to ensure that the United States is a hospitable location for innovative companies, and that the authors cited manufacturing and marketing as key activities related to innovation. The National Institute of Standards and Technology (NIST) plays a pivotal role in the innovation process by working very closely with industry on programs to transfer innovative technologies from the laboratory into the field.

The President's American Competitiveness Initiative (ACI), started in 2006, launched a three-pronged approach to competitiveness by strengthening research at the National Science Foundation, the Office of Science at the Department of Energy, and the laboratory research and construction accounts of NIST. This bill addresses the last of these agencies by fully supporting the ACI requested improvements, as well as reauthorizing programs at NIST crucial to our global competitiveness. I am proud that this bill has been crafted in a bipartisan manner and incorporates many ideas included in legislation that I introduced in both the 108th and 109th Congresses, focused on strengthening U.S. manufacturing. In both Congresses the bill was passed by the House.

Although manufacturing has experienced tremendous technological gains over the last few years, international competition has exacted a terrible toll on our nation's manufacturers. In particular, our small- and medium-sized firms are under tremendous pressure to become more efficient, to modernize, and to cut their prices. There is no evidence that these pressures are likely to go away.

This bill will help address long-term problems facing our nation's manufacturers by broadening and strengthening manufacturing extension services and creating a new program to revive manufacturing innovation through collaborative research and development.

I know my colleagues understand that it is incredibly important to our future for this nation to remain competitive today. Congress must provide a coherent federal response to the changes that are underway in manufacturing, and to support the technological innovation that is fundamental to retaining our manufacturing strength. This bill provides a mechanism for that crucial response and I look forward to working with my colleagues on this issue in the 110th Congress.

Mr. GINGREY. And, Mr. Chairman, I yield back the balance of my time at this point.

Chairman WU. Thank you, Mr. Gingrey. And any other Members who have an opening statement may place it in the record at this point. Without objection, so ordered.

I ask unanimous consent that the bill is considered as read and open to amendment at any point, and that Members proceed with the amendments in the order of the roster. Without objection, so ordered.

Pursuant to discussions with Dr. Gingrey and others in the minority, I propose we consider the amendments which the Chair supports en bloc. Therefore, I ask unanimous consent that the Committee consider the following amendments en bloc. Amendment number one, offered by myself and Dr. Gingrey; amendment number two, offered by the gentleman from Utah, Mr. Matheson. Without objection, so ordered.

The Clerk will report the amendments.

The CLERK. Amendment to H.R. 1868, offered by Mr. Wu of Oregon and Mr. Gingrey of Georgia.

Chairman WU. I ask unanimous consent to dispense with the reading. Without objection, so ordered.

I now recognize myself for five minutes to explain the amendments.

On the Wu/Gingrey and Matheson amendments, I realize that everyone is planning a busy day, and I would like to ask for unanimous consent that my full statement, with a complete amendment description, be inserted into the record. The Wu/Gingrey amendment includes a number of technical provisions that have been requested by NIST since 2002. They primarily update provisions to better reflect current NIST operations. Democratic and Republican staffs have worked closely in drafting this language, and I will add that there are corresponding provisions in the Senate COMPETES bill, which includes an authorization for NIST.

As we are considering Representative Matheson's amendment in the en bloc consideration, I want to say a few words about his amendment. His amendment is based upon a recommendation, a study by the National Academy of Public Administration, and it has the support of the MEP Centers, and he has worked closely with Representative Ehlers in drafting this language.

Representative Matheson's amendment is a good amendment, and a good addition to this bill, and I support it, and would like to yield to the gentleman for comments that he may have on his amendment.

Mr. MATHESON. Thank you, Subcommittee Chairman Wu, and also Ranking Member Gingrey for working with me on this amendment. I just want to give a brief description, if I could.

As we know, the MEP program has been very successful in creating and retaining manufacturing jobs, and particularly in my State of Utah, I can tell you that has happened. After visiting with manufacturers in my state, it has become clear to me that more could be done to help U.S. manufacturers remain competitive, and let me give a quick example to illustrate where I think we could make some progress.

There is a swimming pool cover manufacturer in Utah who can make a pool cover in which almost all the materials, including the motors, metal, wheels and gears will last for 20 years. But the vinyl cover material has only a life of five years. If the manufacturer gets its hands on a new vinyl cover material that is UV light resistant and weather or freeze resistant for 20 years, you would be able to make a product with greater value for all the component parts.

So the problem is that manufacturers need to be able to properly define their technological needs, but they also need to match those needs with available technologies that may be being created across the U.S. There may be a researcher in a University lab or one of our National Sponsor labs that has developed a polymer that is UV and weather resistant, but the last thing on the researcher's mind in one of those labs is getting that polymer into the hands of a swimming pool cover manufacturer in the State of Utah.

So if we can try to bridge this gap of trying to match up and give opportunity for new technologies to develop and help people on the manufacturing side, that would be, in my opinion, a good thing. So as the Chairman mentioned, there was a study commissioned by NIST in 2002 that concurred with this assessment, talking about the need for leveraging technology and assisting the technology transfer.

My amendment is really simple. It expands the Manufacturing Extension Center Competitive Grant Program in Section 203(c) of the bill to emphasize the need to improve technology transfer and infusions into a manufacturer's process. It is supported by the American Small Manufacturers Coalition. I urge my colleagues to support the amendment, and I yield back my time.

Chairman WU. I thank the gentleman, and Dr. Gingrey, do you have comments on either of the amendments?

Mr. GINGREY. No, Mr. Chairman, just to say that, in regard to the Jim Matheson amendment, we have no objections, and even to go a step further, we applaud his amendment, and I think it is a good amendment, and certainly I plan to support it.

In regard to, Mr. Chairman, our amendment, basically the amendment, as you point out, essentially makes just technical changes, some of them actually at NIST's request, and conforms to changes to outdated parts of NIST's underlying statute and a number of other provisions, but we are certainly in favor of this amendment.

Mr. Chairman, if I could, I would like, at this point, if it is the appropriate time, to yield to Ms. Biggert. I think she wanted to make some comments, and if that is okay, I would like to yield my time now to Judy Biggert from Illinois.

Ms. BIGGERT. Thank you, Mr. Chairman, it doesn't pertain to a specific amendment, but I think goes to the bill, although Mr. Matheson was actually talking about something that relates.

Section 204 of this bill would replace what we have long known as the Advanced Technology Program, or ATP, with a new and different Technology Innovation Program.

While I understand and appreciate that the Chairman and majority staff have incorporated input from the Administration in the legislative text of Section 204 before us today, some of us have only had a few days to review it, and unlike most of the provisions in this bill, which have been approved by the Committee previously, Section 204 represents new provisions and new language, and neither this subcommittee nor the Full Committee has held hearings on these new provisions.

So after reviewing this section of the bill, I think our National Laboratories could play a supporting role in the Technology Innovation Program. And I know for a fact that Argonne National Laboratory in my district helps companies large and small overcome major technical challenges with research and development, and thus remain competitive. And I actually have been working with some of these companies to see how they progressed after that support from Argonne.

The establishment clause of the Technology Innovation Program asserts that its purpose is to "accelerate the development and application of challenging high-risk technologies that promise widespread economic benefits for our nation."

I think it is safe to say that the advanced energy technologies fit this bill very well. While they are often challenging and involve significant risk, accelerating their development could easily lead to widespread national economic benefits. In such cases, the Department of Energy's National Laboratories could be a company's best

partner in accelerating the development and application of a new energy technology.

So if we are to be true to the purpose of this program, I can't think of any reason why we shouldn't figure out an appropriate way to involve our National Laboratories.

And I would hope that the Chairman would agree to work with me on this idea in advance of next week's Full Committee markup, and I would yield to the Chairman for a response.

Mr. GINGREY. I yield back my time, Mr. Chairman.

Chairman WU. I look forward to working with the gentlelady, and both sides of the Committee staff, to see if this adjustment or addition is appropriate for this particular legislation ahead of next week's Full Committee markup.

Ms. BIGGERT. Thank you. I appreciate your comments. I look forward to working with you to ensure our National Laboratories can play a meaningful role in this new program, and yield back.

[The prepared statement of Ms. Biggert follows:]

PREPARED STATEMENT OF REPRESENTATIVE JUDY BIGGERT

Thank you, Mr. Chairman.

Section 204 of this bill would replace what we have long known as the Advanced Technology Program, or ATP, with a new and different Technology Innovation Program.

While I understand and appreciate that the Chairman and Majority staff have incorporated input from the Administration in the legislative text of Section 204 before us today, some of us have only had a few days to review it.

And unlike most of the provisions in this bill, which have been approved by the Committee previously, Section 204 represents new provisions and new language.

And neither this subcommittee nor the Full Committee has held hearings on these new provisions.

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I know for a fact that Argonne National Laboratory in my district helps companies large and small overcome major technical challenges with research and development, and thus remain competitive.

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So if we are to be true to the purpose of this program, I can't think of any reason why we shouldn't figure out an appropriate way to involve our national laboratories.

Would the Chairman agree to work with me on this idea in advance of next week's Full Committee markup?

(YIELD TO CHAIRMAN WU FOR A RESPONSE)

I appreciate the Chairman's cooperation. I look forward to working with him to ensure our national laboratories can play a meaningful role in this new program, and I yield back the balance of my time.

Chairman WU. I thank the gentlelady.

Is there any further discussion on the amendments? If not, the vote occurs on both of the amendments. All in favor, say aye. Those opposed, say no. The yeas have it, and the amendment is agreed to.

Are there any other amendments? Hearing none, the vote is on the bill H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007,* as amended. All those in favor will say

aye. All those opposed will say no. In the opinion of the Chair, the ayes have it.

I recognize Dr. Gingrey to offer a motion.

Mr. GINGREY. Thank you, Mr. Chairman. I move that the Subcommittee favorably report H.R. 1868, as amended, to the Full Committee. And furthermore, I move that the staff be instructed to prepare the Subcommittee legislative report and to make any necessary technical and conforming changes to the bill, as amended, in accordance with the recommendations of the Subcommittee.

Chairman WU. The question is on the motion to report the bill favorably. Those in favor of the motion will signify by saying aye. Opposed, no. The ayes have it, and the bill is favorably reported.

Without objection, the motion to reconsider——

Mr. GINGREY. Mr. Chairman, under the Committee rules, I ask that Members be permitted to submit supplemental minority or additional views on this measure.

Chairman WU. So ordered.

Without objection, the motion to reconsider is laid upon the table.

I want to thank the Members for their attendance, and this concludes our subcommittee markup.

[Whereupon, at 10:37 a.m., the Subcommittee was adjourned.]

Appendix:

H.R. 1868, Section-by-Section Analysis, Amendment Roster

.....

(Original Signature of Member)

110TH CONGRESS
1ST SESSION

H. R. _____

To authorize appropriations for the National Institute of Standards and Technology for fiscal years 2008, 2009, and 2010, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. WU introduced the following bill; which was referred to the Committee on

---

A BILL

To authorize appropriations for the National Institute of Standards and Technology for fiscal years 2008, 2009, and 2010, and for other purposes.

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 "Technology Innovation and Manufacturing Stimulation Act of 2007".

TITLE I—AUTHORIZATION OF APPROPRIATIONS

SEC. 101. SCIENTIFIC AND TECHNICAL RESEARCH AND SERVICES.

(a) LABORATORY ACTIVITIES.—There are authorized to be appropriated to the Secretary of Commerce for the scientific and technical research and services laboratory activities of the National Institute of Standards and Technology—

(1) $470,879,000 for fiscal year 2008;

(2) $497,750,000 for fiscal year 2009; and

(3) $537,569,000 for fiscal year 2010.

(b) MALCOLM BALDRIGE NATIONAL QUALITY AWARD PROGRAM.—There are authorized to be appropriated to the Secretary of Commerce for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a)—

(1) $7,860,000 for fiscal year 2008;

(2) $8,096,000 for fiscal year 2009; and

(3) $8,339,000 for fiscal year 2010.

(c) CONSTRUCTION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary of Commerce for construction and maintenance of facilities of the National Institute of Standards and Technology—

(1) $93,865,000 for fiscal year 2008;

(2) $86,371,000 for fiscal year 2009; and

(3) $49,719,000 for fiscal year 2010.

SEC. 102. INDUSTRIAL TECHNOLOGY SERVICES.

There are authorized to be appropriated to the Secretary of Commerce for Industrial Technology Services activities of the National Institute of Standards and Technology—

(1) $222,968,000 for fiscal year 2008, of which—

(A) $110,000,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and

(B) $112,968,000 shall be for the Manufacturing Extension Partnership program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $1,000,000 shall be for the competitive grant program under section 25(f) of such Act;

(2) $263,505,000 for fiscal year 2009, of which—

(A) $141,500,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and

(B) $122,005,000 shall be for the Manufacturing Extension Partnership Program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $4,000,000 shall be for the competitive grant program under section 25(f) of such Act; and

(3) $282,266,000 for fiscal year 2010, of which—

(A) $150,500,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and

(B) $131,766,000 shall be for the Manufacturing Extension Partnership Program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than

$4,000,000 shall be for the competitive grant program under section 25(f) of such Act.

TITLE II—INNOVATION AND TECHNOLOGY POLICY REFORMS

SEC. 201. INSTITUTE-WIDE PLANNING REPORT.

Section 23 of the National Institute of Standards and Technology Act (15 U.S.C. 278i) is amended by adding at the end the following new subsections:

''(c) Concurrent with the submission to Congress of the President's annual budget request in the first year after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall transmit to the Congress a 3-year programmatic planning document for the Institute, including programs under the Scientific and Technical Research and Services, Industrial Technology Services, and Construction of Research Facilities functions.

''(d) Concurrent with the submission to the Congress of the President's annual budget request in each year after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall transmit to the Congress an update to the 3-year programmatic planning document transmitted under subsection (c), revised to cover the first 3 fiscal years after the date of that update.''.

SEC. 202. REPORT BY VISITING COMMITTEE.

Section 10(h)(1) of the National Institute of Standards and Technology Act (15 U.S.C. 278(h)(1)) is amended—

(1) by striking ''on or before January 31 in each year'' and inserting ''within 30 days after the submission to Congress of the President's annual budget request in each year''; and

(2) by adding to the end the following: ''Such report also shall comment on the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).''.

SEC. 203. MANUFACTURING EXTENSION PARTNERSHIP.

(a) MEP ADVISORY BOARD.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k) is amended by adding at the end the following new subsection:

''(e) MEP ADVISORY BOARD.—(1) There is established within the Institute a Manufacturing Extension Partnership Advisory Board (in this Act referred to as the 'MEP Advisory Board'). The MEP Advisory Board shall consist of 10 members broadly representative of stakeholders, to be appointed by the Director. At least 2 members shall be employed by or on an advisory board for the Centers, and at least 5 other members shall be from

United States small businesses in the manufacturing sector. No member shall be an employee of the Federal Government.

"(2)(A) Except as provided in subparagraph (B) or (C), the term of office of each member of the MEP Advisory Board shall be 3 years.

"(B) The original members of the MEP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

"(C) Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

"(D) Any person who has completed two consecutive full terms of service on the MEP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

"(3) The MEP Advisory Board shall meet no less than 2 times annually, and provide to the Director—

"(A) advice on Manufacturing Extension Partnership programs, plans, and policies;

"(B) assessments of the soundness of Manufacturing Extension Partnership plans and strategies; and

"(C) assessments of current performance against Manufacturing Extension Partnership program plans.

"(4) In discharging its duties under this subsection, the MEP Advisory Board shall function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.

"(5) The MEP Advisory Board shall transmit an annual report to the Secretary for transmittal to the Congress within 30 days after the submission to the Congress of the President's annual budget request in each year. Such report shall address the status of the Manufacturing Extension Partnership program and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).".

(b) ACCEPTANCE OF FUNDS.—Section 25(d) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(d)) is amended to read as follows:

"(d) ACCEPTANCE OF FUNDS.—In addition to such sums as may be appropriated to the Secretary and Director to operate the Centers program, the Secretary and Di-

rector also may accept funds from other Federal departments and agencies and under section 2(c)(7) from the private sector for the purpose of strengthening United States manufacturing. Such funds, if allocated to a Center or Centers, shall not be considered in the calculation of the Federal share of capital and annual operating and maintenance costs under subsection (c).''.

(c) MANUFACTURING EXTENSION CENTER COMPETITIVE GRANT PROGRAM.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k), as amended by subsection (a) of this section, is further amended by adding at the end the following new subsection:

''(f) COMPETITIVE GRANT PROGRAM.—

''(1) ESTABLISHMENT.—The Director shall establish, within the Manufacturing Extension Partnership program under this section and section 26 of this Act, a program of competitive awards among participants described in paragraph (2) for the purposes described in paragraph (3).

''(2) PARTICIPANTS.—Participants receiving awards under this subsection shall be the Centers, or a consortium of such Centers.

''(3) PURPOSE.—The purpose of the program under this subsection is to develop projects to solve

new or emerging manufacturing problems as determined by the Director, in consultation with the Director of the Manufacturing Extension Partnership program, the Manufacturing Extension Partnership Advisory Board, and small and medium-sized manufacturers. One or more themes for the competition may be identified, which may vary from year to year, depending on the needs of manufacturers and the success of previous competitions. These themes shall be related to projects associated with manufacturing extension activities, including supply chain integration and quality management, or extend beyond these traditional areas.

"(4) APPLICATIONS.—Applications for awards under this subsection shall be submitted in such manner, at such time, and containing such information as the Director shall require, in consultation with the Manufacturing Extension Partnership Advisory Board.

"(5) SELECTION.—Awards under this subsection shall be peer reviewed and competitively awarded. The Director shall select proposals to receive awards—

"(A) that utilize innovative or collaborative approaches to solving the problem described in the competition;

"(B) that will improve the competitiveness of industries in the region in which the Center or Centers are located; and

"(C) that will contribute to the long-term economic stability of that region.

"(6) PROGRAM CONTRIBUTION.—Recipients of awards under this subsection shall not be required to provide a matching contribution.".

SEC. 204. TECHNOLOGY INNOVATION PROGRAM.

Section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n) is amended to read as follows:

"TECHNOLOGY INNOVATION PROGRAM

"SEC. 28. (a) ESTABLISHMENT.—There is established in the Institute a Technology Innovation Program for the purpose of assisting United States businesses and institutions of higher education to accelerate the development and application of challenging, high-risk technologies that promise widespread economic benefits for the Nation.

"(b) GRANTS.—

"(1) IN GENERAL.—The Director shall make grants under this section to eligible companies for research and development on high-risk, high-payoff

emerging and enabling technologies that offer significant potential benefits to the United States economy and a wide breadth of potential application, and form an important technical basis for future innovations. Such grants shall be made to eligible companies that are—

"(A) small or medium-sized businesses that are substantially involved in the research and development, including having a leadership role in programmatically steering the project and defining the research agenda; or

"(B) joint ventures.

"(2) SINGLE COMPANY GRANTS.—No grant made under paragraph (1)(A) shall exceed $3,000,000 over 3 years. The Federal share of a project funded by such a grant shall not be more than 50 percent of total project costs. An award under paragraph (1)(A) may be extended beyond 3 years only if the Director transmits to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a full and complete explanation of such award, including reasons for exceeding 3 years. Federal funds granted under paragraph (1)(A) may be used only for direct

costs and not for indirect costs, profits, or management fees of a contractor.

"(3) JOINT VENTURE GRANTS.—No grant made under paragraph (1)(B) shall exceed $9,000,000 over 5 years. The Federal share of a project funded by such a grant shall not be more than 50 percent of total project costs.

"(c) AWARD CRITERIA.—The Director shall award grants under this section only to an eligible company—

"(1) whose proposal has scientific and technological merit;

"(2) whose application establishes that the proposed technology has strong potential to generate substantial benefits to the Nation that extend significantly beyond the direct return to the applicant;

"(3) whose application establishes that the research has strong potential for advancing the state-of-the-art and contributing significantly to the United States scientific and technical knowledge base;

"(4) whose application establishes that the research is aimed at overcoming a scientific or technological barrier;

"(5) who has provided a technical plan that clearly identifies the core innovation, the technical

approach, major technical hurdles, and the attendant risks, and that clearly establishes the feasibility of the technology through adequately detailed plans linked to major technical barriers;

"(6) whose application establishes that the team proposed to carry out the work has a high level of scientific and technical expertise to conduct research and development, has a high level of commitment to the project, and has access to appropriate research facilities;

"(7) whose proposal explains why Technology Innovation Program support is necessary;

"(8) whose application includes a plan for advancing the technology into commercial use; and

"(9) whose application assesses the project's organizational structure and management plan.

"(d) EXTERNAL REVIEW OF PROPOSALS.—In order to analyze the need for or the value of any proposal made by a joint venture or company requesting the Director's assistance under this section, or to monitor the progress of any project which receives funds under this section, the Director shall consult with industry or other expert sources that do not have a proprietary or financial interest in the proposal or project.

"(e) INTELLECTUAL PROPERTY RIGHTS OWNERSHIP.—

"(1) IN GENERAL.—Title to any intellectual property developed by a joint venture from assistance provided under this section may vest in any participant in the joint venture, as agreed by the members of the joint venture, notwithstanding section 202(a) and (b) of title 35, United States Code. The United States may reserve a nonexclusive, nontransferable, irrevocable paid-up license, to have practiced for or on behalf of the United States in connection with any such intellectual property, but shall not in the exercise of such license publicly disclose proprietary information related to the license. Title to any such intellectual property shall not be transferred or passed, except to a participant in the joint venture, until the expiration of the first patent obtained in connection with such intellectual property.

"(2) LICENSING.—Nothing in this subsection shall be construed to prohibit the licensing to any company of intellectual property rights arising from assistance provided under this section.

"(3) DEFINITION.—For purposes of this subsection, the term 'intellectual property' means an in-

vention patentable under title 35, United States Code, or any patent on such an invention.

''(f) PROGRAM OPERATION.—Not later than 9 months after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall issue regulations—

''(1) establishing criteria for the selection of recipients of assistance under this section;

''(2) establishing procedures regarding financial reporting and auditing to ensure that contracts and awards are used for the purposes specified in this section, are in accordance with sound accounting practices, and are not funding existing or planned research programs that would be conducted in the same time period in the absence of financial assistance under this section; and

''(3) providing for appropriate dissemination of Technology Innovation Program research results.

''(g) CONTINUATION OF ATP GRANTS.—The Director shall, through the Technology Innovation Program, continue to provide support originally awarded under the Advanced Technology Program, in accordance with the terms of the original award.

''(h) COORDINATION WITH OTHER FEDERAL TECHNOLOGY PROGRAMS.—In carrying out this section, the Di-

rector shall, as appropriate, coordinate with other senior Federal officials to ensure cooperation and coordination in Federal technology programs and to avoid unnecessary duplication of efforts.

"(i) ACCEPTANCE OF FUNDS FROM OTHER FEDERAL AGENCIES.—In addition to amounts appropriated to carry out this section, the Secretary and the Director may accept funds from other Federal agencies to support awards under the Technology Innovation Program. Any award under this section which is supported with funds from other Federal agencies shall be selected and carried out according to the provisions of this section.

"(j) TIP ADVISORY BOARD.—

"(1) ESTABLISHMENT.—There is established within the Institute a Technology Innovation Program Advisory Board. The TIP Advisory Board shall consist of 10 members appointed by the Director, at least 7 of which shall be from United States industry, chosen to reflect the wide diversity of technical disciplines and industrial sectors represented in Technology Innovation Program projects. No member shall be an employee of the Federal Government.

"(2) TERMS OF OFFICE.—(A) Except as provided in subparagraph (B) or (C), the term of office

of each member of the TIP Advisory Board shall be 3 years.

"(B) The original members of the TIP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

"(C) Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

"(D) Any person who has completed two consecutive full terms of service on the TIP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

"(3) PURPOSE.—The TIP Advisory Board shall meet no less than 2 times annually, and provide to the Director—

"(A) advice on programs, plans, and policies of the Technology Innovation Program;

"(B) reviews of the Technology Innovation Program's efforts to assess its economic impact;

"(C) reports on the general health of the program and its effectiveness in achieving its legislatively mandated mission;

"(D) guidance on areas of technology that are appropriate for Technology Innovation Program funding; and

"(E) recommendations as to whether, in order to better assess whether specific innovations to be pursued are being adequately supported by the private sector, the Director could benefit from advice and information from additional industry and other expert sources without a proprietary or financial interest in proposals being evaluated.

"(4) ADVISORY CAPACITY.—In discharging its duties under this subsection, the TIP Advisory Board shall function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.

"(5) ANNUAL REPORT.—The TIP Advisory Board shall transmit an annual report to the Secretary for transmittal to the Congress within 30 days after the submission to Congress of the President's annual budget request in each year. Such report shall address the status of the Technology In-

novation Program and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).

"(k) DEFINITIONS.—For purposes of this section—

"(1) the term 'eligible company' means a company that is incorporated in the United States and does a majority of its business in the United States, and that either—

"(A) is majority owned by citizens of the United States; or

"(B) is owned by a parent company incorporated in another country and the Director finds that—

"(i) the company's participation in the Technology Innovation Program would be in the economic interest of the United States, as evidenced by—

"(I) investments in the United States in research and manufacturing (including the manufacture of major components or subassemblies in the United States);

"(II) significant contributions to employment in the United States; and

"(III) agreement with respect to any technology arising from assistance provided under this section to promote the manufacture within the United States of products resulting from that technology (taking into account the goals of promoting the competitiveness of United States industry); and

"(ii) the company is incorporated in a country which—

"(I) affords to United States-owned companies opportunities, comparable to those afforded to any other company, to participate in any joint venture similar to those receiving funding under this section;

"(II) affords to United States-owned companies local investment opportunities comparable to those afforded any other company; and

"(III) affords adequate and effective protection for the intellectual property rights of United States-owned companies;

"(2) the term 'institution of higher education' has the meaning given that term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001);

"(3) the term 'joint venture' means a joint venture that—

"(A) includes either—

"(i) at least 2 separately owned for-profit companies that are both substantially involved in the project and both of which are contributing to the cost-sharing required under this section, with the lead entity of the joint venture being one of those companies that is a small or medium-sized business; or

"(ii) at least one small or medium-sized business and one institution of higher education that are both substantially involved in the project and both of which are contributing to the cost-sharing required under this section, with the lead entity of the joint venture being either that small or medium-sized business or that institution of higher education; and

"(B) may include additional for-profit companies, institutions of higher education, and other organizations that may or may not contribute non-Federal funds to the project; and

"(4) the term 'TIP Advisory Board' means the advisory board established under subsection (j).".

SEC. 205. RESEARCH FELLOWSHIPS.

Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g-l) is amended by striking "up to 1 per centum of the" and inserting "up to 1.5 percent of the".

SEC. 206. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.

The National Institute of Standards and Technology Act is amended—

(1) by redesignating the first section 32 (15 U.S.C. 271 note) as section 34 and moving it to the end of the Act; and

(2) by inserting before the section moved by paragraph (1) the following new section:

"SEC. 33. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.

"(a) AUTHORITY.—

"(1) ESTABLISHMENT.—The Director shall establish a pilot program of awards to partnerships

among participants described in paragraph (2) for the purposes described in paragraph (3). Awards shall be made on a peer-reviewed, competitive basis.

"(2) PARTICIPANTS.—Such partnerships shall include at least—

"(A) 1 manufacturing industry partner; and

"(B) 1 nonindustry partner.

"(3) PURPOSE.—The purpose of the program under this section is to foster cost-shared collaborations among firms, educational institutions, research institutions, State agencies, and nonprofit organizations to encourage the development of innovative, multidisciplinary manufacturing technologies. Partnerships receiving awards under this section shall conduct applied research to develop new manufacturing processes, techniques, or materials that would contribute to improved performance, productivity, and competitiveness of United States manufacturing, and build lasting alliances among collaborators.

"(b) PROGRAM CONTRIBUTION.—Awards under this section shall provide for not more than one-third of the costs of a partnership. Not more than an additional one-third of such costs may be obtained directly or indirectly from other Federal sources.

"(c) APPLICATIONS.—Applications for awards under this section shall be submitted in such manner, at such time, and containing such information as the Director shall require. Such applications shall describe at a minimum—

"(1) how each partner will participate in developing and carrying out the research agenda of the partnership;

"(2) the research that the grant would fund; and

"(3) how the research to be funded with the award would contribute to improved performance, productivity, and competitiveness of the United States manufacturing industry.

"(d) SELECTION CRITERIA.—In selecting applications for awards under this section, the Director shall consider at a minimum—

"(1) the degree to which projects will have a broad impact on manufacturing;

"(2) the novelty and scientific and technical merit of the proposed projects; and

"(3) the demonstrated capabilities of the applicants to successfully carry out the proposed research.

''(e) DISTRIBUTION.—In selecting applications under this section the Director shall ensure, to the extent practicable, a distribution of overall awards among a variety of manufacturing industry sectors and a range of firm sizes.

''(f) DURATION.—In carrying out this section, the Director shall run a single pilot competition to solicit and make awards. Each award shall be for a 3-year period.''.

SEC. 207. MANUFACTURING FELLOWSHIP PROGRAM.

Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g-1) is amended—

(1) by inserting ''(a) IN GENERAL.—'' before ''The Director is authorized''; and

(2) by adding at the end the following new subsection:

''(b) MANUFACTURING FELLOWSHIP PROGRAM.—

''(1) ESTABLISHMENT.—To promote the development of a robust research community working at the leading edge of manufacturing sciences, the Director shall establish a program to award—

''(A) postdoctoral research fellowships at the Institute for research activities related to manufacturing sciences; and

''(B) senior research fellowships to established researchers in industry or at institutions

of higher education who wish to pursue studies related to the manufacturing sciences at the Institute.

"(2) APPLICATIONS.—To be eligible for an award under this subsection, an individual shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require.

"(3) STIPEND LEVELS.—Under this subsection, the Director shall provide stipends for postdoctoral research fellowships at a level consistent with the National Institute of Standards and Technology Postdoctoral Research Fellowship Program, and senior research fellowships at levels consistent with support for a faculty member in a sabbatical position.".

SEC. 208. MEETINGS OF VISITING COMMITTEE ON ADVANCED TECHNOLOGY.

Section 10(d) of the National Institute of Standards and Technology Act (15 U.S.C. 278(d)) is amended by striking "quarterly" and inserting "twice each year".

SECTION-BY-SECTION ANALYSIS OF H.R. 1868,
THE TECHNOLOGY INNOVATION AND MANUFACTURING
STIMULATION ACT OF 2007

Section 1. Short title.

The Technology Innovation and Manufacturing Stimulation Act of 2007.

Title I—Authorization of Appropriations

Section 101. Scientific and Technical Research and Services (STRS).

Authorizes $470.9 million in FY08, $497.8 million in FY09, and $537.6 million in FY10 for the NIST lab activities. Authorizes $7.9 million in FY08, $8.1 million in FY09, and $8.3 million in FY10 for the Baldrige National Quality Award Program. Authorizes $93.9 million in FY08, $86.4 million in FY09, and $49.7 million for construction and maintenance of facilities. The FY08 levels for the labs and construction are the same as the President's budget request.

Section 102. Industrial Technology Services (ITS).

Authorizes $110 million in FY08 for the Technology Innovation Program (TIP) which replaces the Advanced Technology Program (ATP) later in the bill. Authorizes $141.5 million in FY09 and $150.5 million in FY10. Requires that at least $45 million in each year be for new awards. Authorizes $113.0 million in FY08, $122.0 million in FY09, and $131.8 million in FY10 for the Manufacturing Extension Partnership (MEP). Sets aside $1 million in FY08 and $4 million in FY09 and FY10 from the MEP funds for a competitive grant program established later in the bill.

Title II—Innovation and Technology Policy Reforms

Section 201. Institute-wide planning report.

Requires the Director of NIST to submit a three-year NIST programmatic planning document to the Congress at the time of the budget submission the first year after enactment, and then to submit yearly updates with each new budget submission.

Section 202. Report by Visiting Committee.

Changes the reporting requirement for the Visiting Committee on Advanced Technology (VCAT) to be due 30 days after the submission of the President's budget to Congress, and requires the VCAT to comment on the NIST Director's three-year planning document.

Section 203. Manufacturing Extension Partnership.

Establishes the MEP Advisory Board, which consists of 10 members appointed by the NIST director, serving three-year terms. Two members must be employed by or on advisory boards of one of the MEP Centers, and five others must be from small manufacturers; none can be federal employees. The board meets no less than twice a year, and provides the NIST Director with advice on and assessments of MEP. It also comments on the NIST Director's three-year planning document. The Board is governed by FACA (*Federal Advisory Committee Act*).

Allows MEP to accept funds from other federal agencies and from the private sector.

Establishes the MEP competitive grants program for MEP Centers or consortia of Centers. The grants are peer reviewed and competitively awarded for Center(s) to conduct projects to solve new or emerging manufacturing problems. Awardees are not required to provide matching funds.

Sec. 204. Technology Innovation Program.

Repeals the existing Advanced Technology Program (ATP) statute.

(a) Creates a new program, the "Technology Innovation Program" with the purpose of assisting businesses and universities to accelerate the development of high-risk technologies that will have a broadly-based economic impact.

(b) Grants—Provides the Director of NIST with the authority to make grants under this program to either small- or medium-sized businesses or joint ventures. Grants of no more than $3 million over three years can be made to single company which must be a small- or medium-sized business. The award may be extended at no additional cost provided there is congressional notice. The funding for a single applicant may only be used for direct costs. Grants may also be made to joint ventures (with either a small- or medium-sized business or a university as the lead of the joint venture). A joint ven-

ture grant may not exceed $9 million over a five year period and the federal share of project is limited to no more than 50 percent.

(c) Award Criteria—Provides criteria for the selection of grants based upon scientific and technological merit, the project's potential for benefits that extend beyond direct return to the applicant, the inclusion of a technical planning document, the technical competence of the project managers and the organizational structure and management plan, and an explanation of why TIP support is necessary.

(d) External Review of Proposals—Requires the Director to consult with industry or other expert sources with no proprietary or financial interest in the project to review the need for or value of any proposal.

(e) Intellectual Property Rights Ownership—Addresses allocation of intellectual property developed by a joint venture. Allows IP to vest to any participant as agreed to by the joint venture participants. In accordance with current law allows the Federal Government to retain a license for any IP for U.S. Government use only. Makes clear that joint venture participants can license their IP.

(f) Program Operation—Within 90 days the Director shall issue regulations for the operation of the program which include selection criteria, financial and audit procedures and dissemination of results.

(g) Continuation of ATP Grants—This requires the TIP to continue funding for awards made under the prior Advanced Technology Program.

(h) Coordination with Other Federal Technology Programs—Requires the Director to coordinate with other federal agencies to ensure there is no duplication of effort.

(i) Acceptance of Funds From Other Federal Agencies—Allows other federal agencies to provide funds to NIST to fund TIP awards.

(j) TIP Advisory Board—Establishes in statute the TIP Advisory Board of 10 members, seven of whom are from U.S. industry, serving three-year terms. None are federal employees. The Board meets twice a year and advises on the TIP program. It also comments on the Director's three-year planning document. The Board will be governed by FACA (*Federal Advisory Committee Act*).

(k) Definition—

Eligible Company—is majority owned by U.S. citizens or is owned by a parent company incorporated in another country provided that the company's participation is in U.S. economic interests, which includes R&D investment in the U.S., and increasing U.S. employment. Also, the country of incorporation must afford similar opportunities for U.S. companies, and provide for effective protection of IP rights. (This is necessary under WTO rules.)

Joint Venture—includes either two separately owned for-profit companies and the lead must be a small- or medium-sized business or at least one small- or medium-sized business and one institution of higher education where either can be the lead. Joint ventures may include additional for-profit companies, institutions of higher education or other organizations (such as research institutes).

Sec. 205. Research Fellowships.

Raises the amount NIST can spend on research fellowships from one percent to 1.5 percent of the total appropriations.

Sec. 206. Collaborative Manufacturing Research Pilot Grants.

Establishes a collaborative manufacturing research pilot grant program for partnerships between (at least) one industry and one non-industry partner, with the purpose of fostering collaboration and conducting applied research on manufacturing. The award can be no more than one-third of the cost of the partnership, with no more than an additional one-third coming from other federal sources. Selection criteria for the awards are based on the breadth of impact of the project, the novelty and scientific merit of the proposal, and the demonstrated capability of the participants. Awards are distributed among a range of industry sectors and firm sizes. NIST will run one pilot competition, funded by an extra $10 million in the STRS budget for FY08. Awards are for three years.

Sec. 207. Collaborative Manufacturing Research Pilot Grants.

Establishes a program of postdoctoral fellowships and senior research fellowships at NIST in manufacturing sciences. Paid for by the increase to 1.5 percent of total appropriations that NIST can use for fellowships.

Sec. 208. Meetings of VCAT.

Reduces the frequency of meetings for the Visiting Committee on Advanced Technology (VCAT) from quarterly to twice annually.

COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION
SUBCOMMITTEE MARKUP
April 19, 2007

AMENDMENT ROSTER

H.R. 1868, the Technology Innovation and Manufacturing Stimulation Act of 2007.

No.	Sponsor	Description	Results
1.	Mr. Wu w/ Mr. Gingrey	Amendment to make technical corrections.	Accepted en bloc by voice vote.
2.	Mr. Matheson	Amendment emphasizing the need for technology transfer projects to be included in the Manufacturing Extension Center Competitive Grant Program.	Accepted en bloc by voice vote.

AMENDMENT TO H.R. 1868

OFFERED BY MR. WU OF OREGON AND MR. GINGREY OF GEORGIA

Page 16, line 2, insert ", or any work for which copyright protection is available under title 17, United States Code" after "such an invention".

At the end of the bill, add the following new title:

TITLE III—MISCELLANEOUS

SEC. 301. POST-DOCTORAL FELLOWS.

Section 19 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–2) is amended by striking "nor more than 60 new fellows" and inserting "nor more than 120 new fellows".

SEC. 302. FINANCIAL AGREEMENTS CLARIFICATION.

Section 2(b)(4) of the National Institute of Standards and Technology Act (15 U.S.C. 272(b)(4)) is amended by inserting "and grants and cooperative agreements," after "arrangements,".

SEC. 303. WORKING CAPITAL FUND TRANSFERS.

Section 12 of the National Institute of Standards and Technology Act (15 U.S.C. 278b) is amended by adding at the end the following:

''(g) AMOUNT AND SOURCE OF TRANSFERS.—Not more than one-quarter of one percent of the amounts appropriated to the Institute for any fiscal year may be transferred to the fund, in addition to any other transfer authority. In addition, funds provided to the Institute from other Federal agencies for the purpose of production of Standard Reference Materials may be transferred to the fund.''.

SEC. 304. RETENTION OF DEPRECIATION SURCHARGE.

Section 14 of the National Institute of Standards and Technology Act (15 U.S.C. 278d) is amended—

(1) by inserting ''(a) IN GENERAL.—'' before ''Within''; and

(2) by adding at the end the following:

''(b) RETENTION OF FEES.—The Director is authorized to retain all building use and depreciation surcharge fees collected pursuant to OMB Circular A–25. Such fees shall be collected and credited to the Construction of Research Facilities Appropriation Account for use in maintenance and repair of the Institute's existing facilities.''.

SEC. 305. NON-ENERGY INVENTIONS PROGRAM.

Section 27 of the National Institute of Standards and Technology Act (15 U.S.C. 278m) is repealed.

SEC. 306. REDEFINITION OF THE METRIC SYSTEM.

Section 2 of the Act of July 28, 1866, entitled ''An Act to authorize the Use of the Metric System of Weights and Measures'' (15 U.S.C. 205; 14 Stat. 339) is amended to read as follows:

''SEC. 2. METRIC SYSTEM DEFINED.

''The metric system of measurement shall be defined as the International System of Units as established in 1960, and subsequently maintained, by the General Conference of Weights and Measures, and as interpreted or modified for the United States by the Secretary of Commerce.''.

SEC. 307. REPEAL OF REDUNDANT AND OBSOLETE AUTHORITY.

The Act of July 21, 1950, entitled ''An Act To redefine the units and establish the standards of electrical and photometric measurements'' (15 U.S.C. 223 and 224) is repealed.

SEC. 308. CLARIFICATION OF STANDARD TIME AND TIME ZONES.

(a) Section 1 of the Act of March 19, 1918, (commonly known as the ''Calder Act'') (15 U.S.C. 261) is amended—

(1) by inserting ''(a) IN GENERAL.—'' before ''For the purpose'';

(2) by striking the second sentence and the extra period after it an inserting "Except as provided in section 3(a) of the Uniform Time Act of 1966 (15 U.S.C. 260a), the standard time of the first zone shall be Coordinated Universal Time retarded by 4 hours; that of the second zone retarded by 5 hours; that of the third zone retarded by 6 hours; that of the four zone retarded by 7 hours; that of the fifth zone retarded by 8 hours; that of the sixth zone retarded by 9 hours; that of the seventh zone retarded by 10 hours; that of the eighth zone retarded by 11 hours; and that of the ninth zone shall be Coordinated Universal Time advanced by 10 hours."; and

(3) by adding at the end the following:

"(b) COORDINATED UNIVERSAL TIME DEFINED.—In this section, the term 'Coordinated Universal Time' means the time scale maintained through the General Conference of Weights and Measures and interpreted or modified for the United States by the Secretary of Commerce in coordination with the Secretary of the Navy.".

(b) Section 3 of the Act of March 19, 1918, (commonly known as the "Calder Act") (15 U.S.C. 264) is amended by striking "third zone" and inserting "fourth zone".

AMENDMENT TO H.R. 1868

OFFERED BY MR. MATHESON OF UTAH

Page 10, line 12, insert "and including the transfer of technology based on the technological needs of manufacturers and available technologies from institutions of higher education, laboratories, and other technology producing entities," after "quality management,".

XXIII. PROCEEDINGS OF THE FULL COMMITTEE MARKUP ON H.R. 1868, THE TECHNOLOGY INNOVATION AND MANUFACTURING STIMULATION ACT OF 2007

The Committee met, pursuant to call, at 10:00 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Bart Gordon [Chairman of the Committee] presiding.

Chairman GORDON. The Committee on Science and Technology will come to order. Pursuant to notice, the Committee on Science and Technology meets to consider the following measures, H.R. 1867, the *National Science Foundation Authorization Act of 2007;* H.R. 1868, *Technological Innovation and Manufacturing Stimulation Act of 2007;* H.Con.Res. 95, *Honoring the career and research accomplishments of Frances E. Allen, the 2006 recipient of the A.M. Turing Award;* and H.Res. 316, *Recognizing the accomplishments of Roger D. Kornberg, Andrew Fire, Craig Mello, John C. Mather, and George F. Smoot for being awarded Nobel Prizes in the fields of chemistry, physiology or medicine, and physics.*

And we will now proceed with the markup. Today the Committee is meeting to markup four good, bipartisan bills. The first bill we will consider today is H.R. 1867, the *National Science Foundation Authorization Act of 2007.* H.R. 1867 was introduced by Chairman Baird, Ranking Member Ehlers, and other Members of the Research and Science Education Subcommittee. The Subcommittee met last Wednesday to consider H.R. 1867 and favorably reported the bill by voice vote after adopting three amendments. I want to thank and congratulate Members of the Subcommittee for their hard work and bipartisan cooperation on this excellent bill.

The core of this bill is the three-year authorization that keeps the Foundation on a ten-year doubling path. NSF is a major source of federal backing for basic research at universities across all disciplines, and Members of the Science and Technology Committee often have a difficult time explaining to our constituents and other Members of Congress why it is so important to fund basic research. The benefits to you and me can seem so intangible in comparison to many of the other things the Federal Government does. But with the publicity around the recent reports like *Rising Above the Gathering Storm,* more of our colleagues and constituents understand that federally funded research pays enormous dividends to society.

Economic growth, public health, national defense, and social advancements have all been tied to technological developments resulting from basic research. Let me just quickly add that as we know, there is a long time between basic research and applied research; and what we are talking about really—when we look at the big problems today, whether they are energy independence, whether it is climate change, whether it is competitiveness, our kids' and grandkids' jobs really are going to depend upon the technology that is developed today. There are seven billion people in the world, half

of which make less $2 a day. We can't compete with them at $2. We don't want to. So it is the technologies that we are developing today that are going to let our kids and grandkids be more productive, and that is why it is so important that the National Science Foundation continue to do its work.

In addition to providing strong research budgets, H.R. 1867 provides important funding for some critical STEM education programs including three K–12 programs this committee expanded and refined in H.R. 362 which I am happy to say just passed the House yesterday. And again, I want to thank everyone here for that bipartisan work. It is a good bill. Mr. Gingrey spoke on it, and certainly Ralph and others spoke to that. I hope that everybody is in their local newspapers today because you were all a part of this bill, and it is a very good bill.

And I am pleased that H.R. 1867 once again reaffirms the critical role that the National Science Foundation plays with STEM education. This is a good bill, and I urge my colleagues to support it and continue to work with me to assure that the rest of our colleagues in Congress understand the value of basic research as we do.

Today we will also take up H.R. 1868, the *Technological Innovation and Manufacturing Stimulation Act of 2007.* This is an authorization bill for the programs of the National Institute of Standards and Technology, NIST. This bill is a bipartisan product of the Technology and Innovation Subcommittee, and I want to commend Chairman Wu and Ranking Member Gingrey for moving this bill through the Subcommittee expeditiously. The Science and Technology Committee needs to send a strong signal to the Appropriations Committees about the importance we place on full funding of NIST. The pace of technology keeps accelerating, particularly in areas such as biofuels, pharmaceutical biologics, and health care IT. NIST has an important role to play in the adoption of these technologies through the creation of standards and the new measurement technologies.

And let me speak just a moment on this. You know, NIST is probably one of the most under-estimated aspects of the Federal Government. It was originally meant to take care of measures and standards. Now it goes much beyond that, and I think it is an agency that all of us can feel comfortable with because this is not a regulatory agency. This is an agency that brings together the business community and the manufacturing community, to work out problems on standards. And I think you are going to find that our committee here, besides the Technology and Innovation Subcommittee, is going to get a lot more respect within Washington and elsewhere because of this agency. We are where the Commerce Committee has been stagnant in terms of health care IT. Ways and Means hasn't been able to go forward. We are going to be able to step forward and solve some of those problems where the health care community is going to look at the Science and Technology Committee as the one who made that breakthrough. Financial services is going to look at us pretty soon as a committee that can make those kind of breakthroughs because of NIST. So we are going to continue working on that, and I think you are going to see NIST help us to make our committee much more relevant.

The Committee is also aware of the important role that the Manufacturing Extension Partnership, MEP, plays in keeping good manufacturing jobs here in the United States, and NIST has a proven track record of implementing its technology development programs.

Finally, the last two measures we are considering today, H.Con.Res. 95 and H.Res. 316 recognize the outstanding achievements of a group of American scientists. It is important that Congress recognize Americans who achieve great things in science, not just for the satisfaction of individual scientists but to show the public that Congress truly values the work that scientists do.

And now I will recognize Mr. Hall to present his opening statement.

[The prepared statement of Chairman Gordon follows:]

PREPARED STATEMENT OF CHAIRMAN BART GORDON

Good Morning. Pursuant to notice, the Committee on Science and Technology meets to consider the following measures:

- **H.R. 1867,** the *National Science Foundation Authorization Act of 2007;*
- **H.R. 1868,** *Technology Innovation and Manufacturing Stimulation Act of 2007;*
- **H.Con.Res. 95,** *Honoring the career and research accomplishments of Frances E. Allen, the 2006 recipient of the A.M. Turing Award;* and
- **H.Res. 316,** *Recognizing the accomplishments of Roger D. Kornberg, Andrew Fire, Craig Mello, John C. Mather, and George F. Smoot for being awarded Nobel Prizes in the fields of chemistry, physiology or medicine, and physics.*

Today the Committee is meeting to markup four good bipartisan bills. The first bill we will consider today is H.R. 1867, the *National Science Foundation Authorization Act of 2007.* H.R. 1867 was introduced by Chairman Baird, Ranking Member Ehlers and other Members of the Research and Science Education Subcommittee.

The Subcommittee met last Wednesday to consider H.R. 1867, and favorably reported the bill by voice vote after adopting three amendments. I want to thank and congratulate Members of the Subcommittee for their hard work and bipartisan cooperation on this excellent bill. The core of this bill is the three-year authorization that keeps the Foundation on a 10-year doubling path.

NSF is a major source of federal backing for basic research at universities, across all disciplines.

Members of the Science and Technology Committee often have a difficult time explaining to our constituents and other Members of Congress why it is so important to fund basic research. The benefits to you and me can seem so intangible in comparison to many of the other things the Federal Government funds.

But with the publicity around recent reports like *"Rising Above the Gathering Storm,"* more of our colleagues and constituents understand that federally-funded research pays enormous dividends to society. Economic growth, public health, national defense, and social advancement have all been tied to technological developments resulting from basic research.

In addition to providing strong research budgets, H.R. 1867 provides important funding for some critical STEM education programs, including three K–12 programs that this committee expanded and refined in H.R. 362, which I am happy to say just passed the House yesterday.

The education programs at NSF are perhaps more tangible to the typical American, as everybody wants their children to be taught by highly qualified teachers and to graduate high school and community college prepared for the workforce of the 21st Century, or to have the opportunity to pursue even higher degrees if they so desire.

I am pleased that H.R. 1867 once again reaffirms the critical role that NSF plays in STEM education. This is a good bill. I urge my colleagues to support it, and to continue to work with me to ensure that the rest of our colleagues in Congress understand the value of basic research as we do.

Today, we'll also take up H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007.* This is an authorization bill for the programs of the National institute of Standards and Technology (NIST).

This bill is the bipartisan product of the Technology and Innovation Subcommittee. I want to commend Chairman Wu and Ranking Member Gingrey for moving this bill through the Subcommittee expeditiously. The Science and Technology Committee needs to send a strong signal to the Appropriations Committee about the importance we place on full funding for NIST.

H.R. 1868 places the NIST budget on the path to doubling over the next 10 years. The Science and Technology Committee has always been in the "amen corner" for fully funding all of NIST.

The pace of technology keeps accelerating—particularly in areas such as biofuels, pharmaceutical biologics and health care IT. NIST has an important role to play in the adoption of these technologies through the creation of standards and new measurement technologies.

This committee is also aware of the important role that the Manufacturing Extension Partnership (MEP) program plays in keeping good manufacturing jobs here in the U.S. And NIST has a proven track record in implementing its technology development program. H.R. 1868 does an excellent job of balancing and funding these priorities and everyone on this committee should support this legislation.

Finally, the last two measures we are considering today, H.Con.Res. 95 and H.Res. 316, recognize the outstanding achievements of a group of American scientists.

It is important that Congress recognizes Americans who achieve great things in the sciences, not just for the satisfaction of the individual scientists, but to show the public that the Congress truly values the work that scientists do.

I recognize Mr. Hall to present his opening remarks.

Mr. HALL. Mr. Chairman, thank you for the chance to make some opening remarks. Of course, as you say, we are considering two authorization bills relating to the President's American Competitive Initiative and two resolutions honoring the accomplishments of some very eminent American scientists.

The *National Science Foundation Authorization Act of 2007* authorizes funding for NSF for the next three fiscal years. This measure goes a long way in keeping with the President's ACI plan to double the budget within ten years. In fact, it goes slightly beyond that to incorporate some of the additions to education programs that the House passed just yesterday.

I appreciate the work of the Subcommittee Ranking Member, Mr. Ehlers, for his dedication and work on this bill; and I thank the Chairman and I thank Congressman Baird for their willingness to cooperate on making this really a truly bipartisan endeavor. I look forward to our continuing working together to improve this legislation and pass it with broad support.

I am also pleased that we are marking up H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007.* H.R. 1868 supports the President's ACI by setting the NIST lab budget on a path to double by fiscal year 2017. This bill ensures that America's small- and medium-sized manufacturers have access to the latest technologies and processes by authorizing the Manufacturing Extension Partnership Program.

Finally, H.R. 1868 authorizes the Technology Innovation Program to promote the swift development of high-risk research into marketable technologies. And I thank Dr. Ehlers and Dr. Gingrey for their extensive input into developing this bill, as well as the staff who dedicated considerable time in this endeavor. Also I want to thank my Democratic colleagues for incorporating these important priorities in this bipartisan legislation.

Mr. Chairman, I am also pleased this committee will honor six esteemed American scientists today. H.Con.Res. 95 recognizes the first woman to receive the prestigious computer science A.M. Turing Award, Frances Allen. H.Res. 316 honors the five American scientists who received Nobel Prizes in 2006, Roger Kornberg for chemistry, Andrew Fire for medicine, Craig Mello for Medicine, John Mather for physics, and George Smoot for physics.

And before I close, I want to point out that the NSF and NIST bills as you have said, Mr. Chairman, both major pieces of legislation, were developed after only a few hearings on each topic, only one in the case of NIST. These hearings were at the subcommittee level, so only a few Members of the Committee were able to attend the hearings. Also, with regard to the NIST bill, there was never a hearing on the New Technology Innovation Program. In fact, these two bills were put together so quickly we have yet to receive all the witnesses' response and questions—their response to the questions for the record submitted by Members of the Committee.

So Mr. Chairman, while I certainly support these bills in their current form and once I have received all of the witnesses' response, I or some other Members may want to propose further amendments to these bills when they are considered on the House Floor, and I know you will work with us on that.

With that, I yield back the balance of my time, and I thank you for laying out a good bill and preparing for a good hearing. I yield back.

[The prepared statement of Mr. Hall follows:]

PREPARED STATEMENT OF REPRESENTATIVE RALPH M. HALL

- H.R. 1867, *National Science Foundation Authorization Act of 2007*
- H.R. 1868, *Technology Innovation and Manufacturing Stimulation Act of 2007*
- H.Con.Res. 95, *Honoring the Career and Research Accomplishments of Frances E. Allen, the 2006 Recipient of the A.M. Turing Award*
- H.Res. 316, *Recognizing the accomplishments of Roger D. Kornberg, Andrew Fire, Craig Mello, John C. Mather, and George F. Smoot for being award Nobel Prizes in the fields of chemistry, physiology or medicine, and physics.*

Thank you, Chairman Gordon, for the chance to make some opening remarks about today's markup. Today we are considering two authorization bills related to the President's American Competitiveness Initiative (ACI) and two resolutions honoring the accomplishments of eminent American scientists.

The *National Science Foundation (NSF) Authorization Act of 2007,* H.R. 1867, authorizes funding for NSF for the next three fiscal years. This measure goes a long way in keeping with the President's ACI plan to double the budget within ten years. In fact, it goes slightly beyond that to incorporate some of the additions to education programs that the House passed yesterday. I appreciate the work of the Subcommittee Ranking Member, Mr. Ehlers, for his dedication and work on this bill and thank the Chairman and Mr. Baird for their willingness to cooperate on making this a bipartisan endeavor. I look forward to our continuing to work together to improve this legislation and pass it with broad support.

I am pleased to be an original co-sponsor of H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007.* H.R. 1868 supports the President's ACI by setting NIST's lab budget on a path to double the budget by fiscal year 2017. The bill will ensure America's small- and medium-sized manufacturers have access to the latest technologies and processes by authorizing the Manufacturing Extension Partnership Program. Finally, H.R. 1868 authorizes the Technology Innovation Program to promote the swift development of high-risk research into marketable technologies. I thank Dr. Ehlers and Dr. Gingrey for their extensive input in developing this bill and my Democratic colleagues for incorporating our priorities into this bipartisan legislation.

I also am pleased the Committee will honor six esteemed American scientists today. H.Con.Res. 95 recognizes the first woman to receive the prestigious computer science A.M. Turner award, Frances Allen. H.Res. 316 honors the five American scientists who received Nobel prizes in 2006: Roger Kornberg for chemistry; Andrew Fire for medicine; Craig Mello for medicine; John Mather for physics; and George Smoot for physics.

Before I close, I want to point out that the NSF and NIST bills, both major pieces of legislation, were developed after only one hearing on each topic. Those hearings were at the Subcommittee level, so only a few Members of the Committee were able to attend the hearings. In the case of the NIST bill there was never a hearing on the new Technology Innovation Program. In fact, these two bills were put together so quickly that we have yet to receive all of the witnesses' responses to questions for the record submitted by Members of this committee. Therefore, Mr. Chairman, while I support these bills in their current form, once I have reviewed all of the witnesses responses I, or other Members, may want to propose further amendments to these bills when they are considered on the House Floor.

With that I yield back the balance of my time.

Chairman GORDON. Thank you, Mr. Hall. Let me assure you that we want to continue to work in the spirit that we have to get good bills. You know, the last NIST authorization was in 1992 out of this committee. It has been five years since we had a National Science Foundation authorization. There have been lots of hearings in between, but you know, it is time to get something done; and we want to have the best bill possible, and you can be absolutely assured that we will continue with that collaboration.

Without objection, Members may place statements in the record at this point.

[The prepared statement of Ms. Johnson follows:]

PREPARED STATEMENT OF REPRESENTATIVE EDDIE BERNICE JOHNSON

Chairman Gordon, Ranking Member Hall, and Members of the Committee on Science and Technology,

I would like to express my support for H.R. 1868, *Technology Innovation and Manufacturing Stimulation Act of 2007.*

The bill authorizes an eight percent increase per year for the National Institute for Standards and Technology's internal labs, which hopefully will lead to a doubling of the NIST lab budget in ten years.

H.R. 1868 is comprehensive authorization of NIST, including the Manufacturing Extension Partnership and a program to replace the Advanced Technology Program.

The bill also provides construction funding to finish the much-needed lab upgrades at NIST campuses and increases the Baldrige Quality Award Program to match inflation.

Mr. Chairman, the Manufacturing Extension Partnership is important to Texas.

The Texas Manufacturing Assistance Center exists to enhance the competitive position of my state's manufacturing sector.

TMAC's manufacturing consultants are located statewide in fourteen field offices.

They work with a wide range of companies to provide technical advice, assist with training and implement best business practices.

TMAC is an alliance of universities, institutes and other entities that partner together for the benefit of our State manufacturing enterprise. I am glad to know that the Committee will retain the MEP within this legislation.

I am also glad to see that the Committee addressed the issue of the embattled Advanced Technology Program, a venture-capital type program that bridges the gap between basic research and industrial innovation.

Early stage investments, funded by ATP, are accelerating the development of innovative technologies that promise valuable commercial payoffs and strong benefits for the Nation.

Legislation authorizing the new program, the Technology Innovation Program, clarifies the requirements for grants to have wide-spread benefits, revises intellectual property issues, and allows universities to lead joint ventures.

The changes also place more emphasis on small- and medium-sized entrepreneurial companies.

Mr. Chairman, H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007,* is solid legislation deserving of this committee's support.

Thank you, and I yield back the balance of my time.

[The prepared statement of Mr. Ehlers follows:]

PREPARED STATEMENT OF REPRESENTATIVE VERNON J. EHLERS

This bill reauthorizes the National Institutes of Standards and Technology, one of our nation's most critical science organizations. Almost every federal agency and U.S. industry sector uses the standards, measurements, and certification services that NIST labs provide. The future of many cutting-edge technologies depends on the research and technical expertise of NIST. Emerging fields such as nanotechnology, quantum computing, and bio-engineering will not mature into U.S. job-creating industries and markets without the existence of scientifically-based industrial standards. There is no other U.S. organization, public or private, with the knowledge and skills necessary to provide these highly technical services in a non-discriminatory manner.

Manufacturing is a key to our nation's economic vitality. This bill will help address long-term problems facing our nation's manufacturers by broadening and strengthening manufacturing extension services and creating a program to revive manufacturing innovation through collaborative research and development. The Manufacturing Extension Partnership (MEP) program helps small- and medium-sized manufacturers improve manufacturing processes, reduce waste, and train workers to use new equipment. MEP receives one-third of its funding from the Federal Government, one-third from the States, and one-third from fees charged to participating small manufacturers.

I am proud that this bill has been crafted in a bipartisan manner and incorporates many ideas included in legislation that I introduced and the House passed in both the 108th and 109th Congresses, focused on strengthening U.S. manufacturing. Congress must provide a coherent federal response to the changes that are underway in manufacturing, and to support the technological innovation that is fundamental to retaining our manufacturing strength. This bill provides a mechanism for that crucial response.

[The prepared statement of Mr. Gingrey follows:]

PREPARED STATEMENT OF REPRESENTATIVE PHIL GINGREY

Thank you, Chairman Gordon, for holding this markup to consider H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007.* Also, I want to thank the Chair of the Technology and Innovation Subcommittee, Chairman Wu, for incorporating my concerns into the bill during the Subcommittee markup.

Last year, with his American Competitiveness Initiative, President Bush provided a vision to maintain America's position in the global marketplace by doubling our investment in physical science research over the next ten years. H.R. 1868 helps fulfill the President's vision by authorizing the National Institute of Standards and Technology, or NIST.

NIST research is crucial to enabling cutting-edge technologies to make the leap from basic research into successful commercial products. I intend to offer one amendment today that provides NIST, on a trial basis, additional flexibility for procuring the services of outside technical experts. I will explain my amendment further when it is offered.

Chairman GORDON. Thank you all for your cooperation on that. We will now consider H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007.*

I yield to the Chairman of the Technology and Innovation Subcommittee, Mr. Wu, for five minutes to describe his bill.

Mr. WU. Thank you very much, Mr. Chairman. Last week the Technology and Innovation Subcommittee marked up H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007* to authorize the programs of the National Institute of Standards and Technology, or NIST. NIST has not had a comprehensive reauthorization since 1992, and it is long overdue. I know that Dr. Ehlers shares this view, and I thank him, Ranking Member Hall,

and Dr. Gingrey for working with us in the spirit of cooperation to craft this bill.

H.R. 1868 contains several provisions from Dr. Ehler's bill, H.R. 255, and it is a stronger bill as a result of this bipartisan effort.

For over 100 years, NIST has made important contributions to public safety, industrial competitiveness, and economic growth through standards and measurements. NIST will be a key part of American innovation in the next 100 years. H.R. 1868 puts NIST on a 10-year path to doubling as an investment in our innovation research. We wish we could do better, but the numbers are the numbers. H.R. 1868 strengthens the internal research at NIST, puts the Manufacturing Extension Partnership on a 10-year path doubling and replaces the Advanced Technology Program with an innovative effort to target small- and medium-sized businesses for limited, cost-shared funding of technological breakthroughs which potentially have broad public benefits.

H.R. 1868 also makes important changes to manufacturing adopted from Dr. Ehler's bill, H.R. 255, which will encourage advances in manufacturing technology. Specifically H.R. 1868 authorizes the NIST laboratory programs at $471 million in fiscal year 2008, $498 million in fiscal year 2009, and $538 million in fiscal year 2010. These numbers put the lab programs on a path to doubling in ten years, consistent with the President's American Competitiveness Initiative. The bill authorizes the construction and maintenance account at $94 million in fiscal year 2008, $86 million fiscal year 2009, and $50 million at fiscal year 2010. These amounts fund the completion of laboratory construction and upgrades at the NIST Boulder, Colorado, and Gaithersburg, Maryland, campuses. The bill authorizes the Manufacturing Extension Partnership at $113 million in fiscal year 2008, $122 million in fiscal year 2009, and $132 million in fiscal year 2010. These amounts put the MEP program on a path to doubling in ten years.

The bill creates the Technology Innovation Program which responds to global innovation competition by funding high-risk, high-reward, pre-competitive technology development with high potential for public benefit focusing on small- and medium-sized high-tech firms. Many of these policy changes were requested by the Administration in its 2002 legislative authorization package. The bill provides for $45 million in new Technology Innovation Program grants each year. The bill also requires the NIST Director to submit an annual planning document addressing NIST's direction in the next three years. There is agreement on doubling NIST's budget, and we need to develop a roadmap on how NIST can best use these resources.

This bill is a bipartisan work product and a key component of our innovation agenda. I urge everyone to support the legislation.

Chairman GORDON. Thank you, Mr. Wu, and Mr. Hall, you are recognized.

Mr. HALL. Mr. Chairman, I yield to Dr. Gingrey who wants to speak on this bill. Mr. Gingrey's bill, not Phil Gingrey.

Mr. GINGREY. This would be the Wu-Ehlers bill, Mr. Ranking Member, but thank you for yielding to me. I appreciate it, and Mr. Chairman, thank you for holding a markup on H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007,* and

I certainly want to thank my Chair on the Technology and Innovation Subcommittee, David Wu; and he incorporated my concerns into the bill during the Subcommittee markup, and he has explained this bill so thoroughly that I will have very few words to add. But I will add a few.

Last year, with his American Competitiveness Initiative, President Bush provided a vision to maintain America's position in the global marketplace by doubling our investment in physical science research over the next ten years. You have heard comments earlier on the previous bill, the funding of the reauthorization of the National Science Foundation and doubling that funding over ten years. Yes, we wish it could be quicker but as it has been said, it is what it is.

H.R. 1868, of course, helps fulfill the President's vision by authorizing the National Institute of Standards and Technology, or as we know it, NIST. NIST research is so crucial to enabling cutting-edge technologies to make the leap from basic research into successful commercial products. I do intend to offer one amendment today that provides NIST on a trial basis a little additional flexibility for procuring the services of outside technical experts, and I will explain that amendment, Mr. Chairman, further when it is offered. But for now, I was actually going to—I have got a brief statement because I want to yield time to Dr. Ehlers. I know he has done so much work on this bill as Chairman Wu acknowledged in his remarks, but as we all know now, he is at the Appropriations Committee trying to get us the money that we so desperately need for these programs.

So with that, Mr. Chairman, I will just yield back and look forward to commenting on my amendment in a few minutes.

Chairman GORDON. Thank you, Dr. Gingrey. Does anyone else wish to be recognized? Then I ask unanimous consent that the bill is considered as read and open to amendment at any point and that the Members proceed with the amendments in the order of the roster. Without objection, so ordered.

The first amendment on the roster is offered by the gentlelady from Illinois, Ms. Biggert. Are you ready to proceed with your amendment?

Ms. BIGGERT. Yes, I have an amendment at the desk.

Chairman GORDON. The Clerk will report the amendment.

The CLERK. Amendment to H.R. 1868 offered by Mrs. Biggert of Illinois.

Chairman GORDON. I ask unanimous consent to dispense with the reading. Without objection, so ordered. The gentlelady is recognized for five minutes to explain the amendment.

Ms. BIGGERT. Thank you, Mr. Chairman. Section 204 of this bill would replace what we have long known as the Advanced Technology Program, or ATP, with a new and different Technology Innovation Program. My amendment will ensure that other organizations such as our National Laboratories continue to play a supportive role in the Technology Innovation Program much like they have in the ATP Program.

In particular my amendment makes this point clear in the establishment clause in Section 204. It further ensures that our National Laboratories can participate in the Technology Innovation

Program as part of a joint venture with either a company or a university as the lead entity.

Finally, the amendment clarifies that our National Laboratories can participate as a third-party supporting a joint venture. According to the bill, the purpose of the Technology Innovation Program is to "accelerate the development and application of challenging high-risk technologies that promise widespread economic benefits for our nation."

I think it is safe to say that advanced energy technologies fit this bill very well. While they are often challenging and involve significant risk, accelerating their development would easily lead to widespread national economic benefits. In such cases, the Department of Energy's National Laboratories could be a company or university's best partner in accelerating the development and application of new energy technologies.

So if we are to be true to the purpose of this program, I can't think of any reason why our National Laboratories shouldn't be able to participate in the program and support businesses or universities. I know for a fact that our Argonne National Laboratory in my district helps companies large and small overcome major technical challenges and thus remain competitive with the help of research and development.

In addition, ensuring our National Labs can play a role in this program is consistent with the original law that established the ATP program.

I would like to thank Chairman Gordon and Subcommittee Chairman Wu and their staff, especially Mike Quear, for working with me and agreeing to this amendment. I also want to thank Ranking Member Hall, Subcommittee Ranking Member Gingrey and their staff, especially Amy Carroll, for their help and support as well. And I would urge my colleagues to support this amendment. I yield back the balance of my time.

Chairman GORDON. Thank you, Ms. Biggert, and we thank you for your creativity in working through a small problem that there had been with some folks in the past. I think you really handled this very well. We thank you.

Is there other discussion on the amendment?

Mr. ROHRABACHER. Mr. Chairman?

Chairman GORDON. Mr. Rohrabacher, you are recognized for five minutes.

Mr. ROHRABACHER. I think it behooves us to remember when we are dealing with NIST that this has served a really important function in our society in establishing standards, standards that need to be verified for various pieces of equipment and various things that we are doing, and actually the cogs and the different parts of the system that we have, our manufacturing system and machinery throughout our country, depends on standards and scientific standards for various endeavors that we have; and I would just like to note that I would hope that we don't go to the point and focus so much in point on, quote, research that we are forgetting that the development of standards and the verification of those standards is vitally important to the future of our country and to the success of overall scientific endeavors. I think of the most important things that NIST can do would be to provide verification and testing for

the scientific and development projects that are going on in the private sector. I happen to be involved with several private development—research and development programs that are not using government money. I have directed people away from being involved in government, and these are very breakthrough technologies; but their biggest problem with their entrepreneur scientists, so to speak, is getting—is having the results tested and having them verified that they have achieved what they have achieved. And it would seem to me that if there was any function of government in the field of science, it is to verify and to set—and to alert the public and make public their findings as to various technologies—as to the effectiveness of various technologies, especially new technologies and of course to verify that certain standards of operation for the machines that are being developed are actually being met.

So that is just a thought. It fits in with what we are talking about here in terms of this amendment, and I thought I would put that into the record at this point.

Chairman GORDON. Thank you, Mr. Rohrabacher, and I agree with you that is the core mission of NIST.

Is there further discussion on this amendment? Mr. Wu.

Mr. WU. First of all, I want to thank the gentlewoman from Illinois for working with us and commend this positive and clarifying amendment which is being offered, and I also want to express agreement with the gentleman from California about a proper balance between the laboratory side of NIST and the standards side of NIST and some of the other things that NIST is involved in, all of which are very, very important. This is one of the reasons why we have put in the statute a requirement for a three-year planning document so that this committee and others can supervise a proper balance between the different portions of NIST. And finally, I might add that the laboratory side of NIST is important to the standards side. Without some of the cutting-edge work done there, it would be very difficult to set standards for some of the new cutting-edge technologies, and the importance of the research there is probably one of the reasons why NIST has won several Nobel prizes in the last decade. But a proper balance is absolutely crucial. I share the gentleman's concern, and I hope that the process that we put into place for both a three-year planning document and a regular review of that document by this committee and an advisory committee will help address the gentleman's concerns.

Chairman GORDON. Anyone else wish to be recognized? If not, the vote occurs on the amendment. All in favor say aye. Those opposed nay. The ayes have it and is agreed to.

The second amendment on the roster is offered by the gentleman from Georgia, Dr. Gingrey. Are you ready to proceed with your amendment?

Mr. GINGREY. Mr. Chairman, yes. I have an amendment at the desk.

Chairman GORDON. The Clerk will report the amendment.

The CLERK. Amendment to H.R. 1868 offered by Mr. Gingrey of Georgia.

Chairman GORDON. I ask unanimous consent to dispense with the reading. Without objection, so ordered. The gentleman is recognized for five minutes to explain the amendment.

Mr. GINGREY. Thank you, Mr. Chairman, and before I explain the amendment, let me say that I have thoroughly enjoyed that tutorial from Mr. Rohrabacher and from Chairman Wu in regard to what NIST does. I think it is very, very important for us to understand and as they both pointed out to strike that proper balance. I had an opportunity to go out to the NIST laboratories at Gaithersburg with Dr. Jeffrey a month ago, and hopefully I will get an opportunity to go out of the University of Colorado and see the facility there. But it is really amazing the important work that is done, and I thank the two gentlemen for pointing that out.

Mr. Chairman, this amendment is in response actually to a conversation I had with Dr. Jeffrey when we went on that field trip and I visited at Gaithersburg, and it was their request for a little additional flexibility in their authority to initiate what he referred to as short-term contracts with technical experts. I didn't know that they couldn't do that but apparently not. And NIST wants the authority because they often need to seek out a very specific scientific expertise to assist on an urgent or a short-term research project.

For example, under current law, if NIST wants a world leading authority in chemical measurements, let us say who is now retired, to work with the scientists for a few hours a week on chemistry standard, reference data products, the agency cannot go directly to that expert. They must—they are required to work through a subcontractor, and of course, that just adds a lot of time and a lot of additional cost to the process. So this amendment is really pretty simple, and again, it was requested by NIST, by the Director; and it would simplify the process, allow NIST to directly contract with an expert for the period of time needed to develop the standard reference product. And the amendment is certainly consistent with the authority that is provided to other agencies, like the Department of Homeland Security. They have that authority. It proposes this authority, my amendment, on a temporary basis just for the scope of the three years of the authorization. It also would require GAO, Government Accountability Office, to review how NIST used this new authority during the three-year time period and to make any recommendations on whether additional safeguards might be needed if such authorities were to be made on a permanent basis. So this is a three-year request.

I understand that Chairman Gordon supports my amendment as well as Subcommittee Chairman Wu. I urge all of my colleagues to also support it, and I yield back my time, Mr. Chairman.

Chairman GORDON. Thank you, Dr. Gingrey. You were correct that this is a good amendment that again improves this bill. Is there further discussion on the amendment? If not, all in favor say aye, those opposed nay. The ayes have it. The amendment is agreed to.

Mr. Akin is gone now, and I know he had an amendment that he subsequently withdrew but let me in his absence say that the essence of his amendment was to look at areas for recoupment of taxpayer dollars. I personally think this is something we need to look into. Much of our basic research is for the public good, but I do think there are those areas where it is appropriate to have recoupment. We are looking at that—I think it is a little premature

now because we just don't know how to do it because there is really not a model anywhere else, but I want you to know the ones of you that would like to see some taxpayer dollars come back from this research, we want to look at that recoupment and we thank Mr. Akin for getting that started.

So the fourth amendment on the roster——

Mr. WU. Mr. Chairman?

Chairman GORDON. Yes, Mr. Wu.

Mr. WU. I would just like to express support for the comments that you just made about Mr. Akins' potential amendment. Thank you.

Chairman GORDON. Again, we were working on something like that prior to his amendment and we are not quite there, but we are going to find out a way to do that.

The fourth amendment through the roster is offered by the gentlelady from Texas, Ms. Johnson. Ms. Johnson was called away and so in her absence, I would like to introduce that amendment and the Clerk will report the amendment.

The CLERK. Amendment to H.R. 1868 offered by Ms. Eddie Bernice Johnson of Texas.

Chairman GORDON. I ask unanimous consent to dispense with the reading. And without objection, so ordered.

Since the gentlelady is gone, Dr. Gingrey, once again, an active person that he is today, was co-sponsoring that amendment and in Ms. Johnson's absence I will let you make whatever comments you would like to make, please, sir.

Mr. GINGREY. Well, Mr. Chairman I only would say that I would absolutely support the amendment. It is a good amendment. It updates a lot of the logistics at the Baldrige National Quality Award. So you know, we talked about it. It is just a common-sense amendment, and I am fully supportive of it and I yield back.

[The prepared statement of Ms. Johnson follows:]

PREPARED STATEMENT OF REPRESENTATIVE EDDIE BERNICE JOHNSON

Thank you, Mr. Chairman and Ranking Member, for the opportunity to present my and Dr. Gingrey's bipartisan amendment to the *Technology Innovation and Manufacturing Stimulation Act of 2007.*

The amendment is similar to H.R. 1231, a bill to amend the Malcolm Baldrige National Quality Award from the National Institute of Standards and Technology—also called NIST.

This award, given each year, is the Nation's highest honor for organizational performance excellence.

Innovation, recognized by the Baldrige Award, originates from businesses in a variety of sectors, including manufacturing, service, small business, education, health care, and nonprofit.

It enables organizations to improve performance results, gain and sustain competitive advantages, foster social responsibility and ethical behavior, and increase organizational sustainability.

On March 13th of this year, Vice President Cheney and Commerce Secretary Gutierrez presented three U.S. organizations with the Malcolm Baldrige National Quality Award.

Awards went to:

- Premier Incorporated, from San Diego—for the "service" category;
- MESA Products, Incorporated, from Tulsa, Oklahoma—for the "small business" category; and
- North Mississippi Medical Center, from Tupelo, Mississippi—for the "health care" category.

Each of these businesses has a great story to tell.

The Baldrige Award, with its prestige, draws national attention to entities that excel in innovations in quality.

These innovations may be shared for the benefit of our entire country.

Mr. Chairman, my amendment today would make two changes to the structure of the program:

(1) It would remove the per-category restriction for number of awards; and

(2) It would set the maximum number of awards at 18.

These changes are budget-neutral, according to the National Institute for Standards and Technology.

The American Society for Quality, which manages the Baldrige program, has worked closely with this committee and strongly supports these changes.

I would like to thank Dr. Gingrey for his partnership as a co-sponsor of this amendment.

As Technology and Innovation Subcommittee Ranking Member, and a medical doctor, Dr. Gingrey has been an engaged bipartisan advocate on this and other science legislation, and I thank the gentleman.

I also thank the Technology Subcommittee Chairman Wu, Dr. Miller, and Dr. Ehlers for supporting the free-standing bill version of this amendment.

Finally, I thank the Committee Chairman and Ranking Member, as well as all staff involved, for their work and support of this amendment.

I urge my colleagues support for these changes to the Baldrige program and yield back the remainder of my time.

Chairman GORDON. That is good and succinct. Is there anyone else who has further comment?

Mr. WU. Mr. Chairman?

Chairman GORDON. Yes, Mr. Wu.

Mr. WU. I just also wanted to express my support of Ms. Johnson and Dr. Gingrey's amendment. I think that this will improve the Malcolm Baldrige Awards. Thank you.

Chairman GORDON. Does anyone else wish to be recognized? If not, the motion occurs on the amendment. All in favor say aye, those opposed no. The ayes have it. The amendment is agreed to.

Are there any other amendments? Hearing none, the vote is on the bill, H.R. 1868 as amended. All those in favor will say aye, all those opposed no. In the opinion of the Chair, the ayes have it.

I recognize Mr. Hall to offer a motion.

Mr. HALL. Mr. Chairman, I move that the Committee favorably report H.R. 1868 as amended to the House with the recommendation that the bill as amended do pass. Further, I move that staff be instructed to prepare the legislative report and make necessary technical and conforming changes and that the Chairman take all the necessary steps to bring the bill before the House for consideration. I yield back.

Chairman GORDON. Thank you, Mr. Hall. The question is on the motion to report the bill favorably. Those in favor of the motion will signify by saying aye, opposed no. The ayes have it. The bill is reported favorably.

Without objection the motion to reconsider is laid upon the table. I move that Members have two subsequent calendar days in which to submit supplemental minority or additional views on the measure. I move pursuant to Clause 1 of Rule 22 of the House of Representatives that the Committee authorize the Chairman to offer such motions as may be necessary in the House to adopt and pass H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007,* as amended. Without objection, so ordered.

And finally, let me look at all of you say thank you for being the hard core and staying here as we completed our business. We had

four good resolutions today, and I want to thank all of you again; and this meeting is concluded.

[Whereupon, at 11:28 a.m., the Committee was adjourned.]

Appendix:

SUBCOMMITTEE MARKUP REPORT, H.R. 1868 (AS REPORTED FROM SUBCOMMITTEE), AMENDMENT ROSTER

COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION
SUBCOMMITTEE MARKUP
APRIL 19, 2007

H.R. 1868, the Technology Innovation and Manufacturing Stimulation Act of 2007 Subcommittee Report

I. Purpose

The purpose of this bill is to authorize appropriations for fiscal years 2008, 2009, and 2010 for the National Institute of Standards and Technology (NIST) and to require a triennial planning document for the Institute; to establish advisory boards for the Institute's two industrial technology programs; to create manufacturing science grant programs and research fellowships; to create a new technology innovation program; and to make technical corrections to the NIST statute.

II. Background and Need for Legislation

Founded in 1901, the National Institute of Standards and Technology (NIST) has developed and promoted measurement, standards, and technology to enhance productivity, facilitate trade, and improve quality of life. NIST is a non-regulatory agency of the U.S. Commerce Department's Technology Administration.

NIST operates in two primary locations: Gaithersburg, MD and Boulder, CO. It also operates two institutes jointly with other organizations: the Center for Advanced Research in Biotechnology in Rockville, MD (with the University of Maryland) and JILA in Boulder, CO (with the University of Colorado).

NIST's staff includes approximately 2,700 scientist, engineers, technicians, and support personnel. In addition, 1,800 associates complement the staff, and NIST partners with about 1,500 manufacturing specialists and staff at affiliated centers around the country. Three NIST scientists have earned the Nobel Prize in the last 10 years.

NIST carries out its mission through four cooperative programs:

- The **NIST laboratories** conduct research supporting U.S. technology infrastructure by developing tools to measure, evaluate, and standardize, enabling U.S. companies to innovate and remain competitive.
- The **Baldrige National Quality Program** promotes excellence among U.S. manufacturers, service companies, educational institutions, and health care providers; conducts outreach programs; and manages the annual Malcolm Baldrige National Quality Award recognizing performance excellence and quality among businesses, and education, health care and nonprofit organizations.
- The **Manufacturing Extension Partnership (MEP)** offers technical and business assistance services to improve the productivity and competitiveness of small manufacturers through a nationwide network of local centers. The centers are funded by a one-third equal match from federal funds, State funds, and fees charged for services.
- The **Advanced Technology Program (ATP)** accelerates the development of high-risk, innovative technologies that promise broad benefits for the nation by co-funding R&D partnerships with the private sector, including universities.

In addition, NIST operates two national research facilities:

- The **NIST Center for Neutron Research (NCNR)** provides an intense source of neutrons used to probe the molecular and atomic structure and dynamics of a wide range of materials. This facility is used heavily by industry. In 2006, researchers from over 40 national labs, 140 U.S. universities, and 60 U.S. companies conducted research at the facility in collaboration with NIST scientists.
- The **Center for Nanoscale Science and Technology (CNST)** leverages the unique capabilities of the NIST Advanced Measurement Laboratory complex, providing state-of-the-art facilities for nanomanufacturing and nanometrology where industry, universities and other federal laboratories can

collaborate in solving critical measurement and fabrication issues necessary to convert nanoscale discoveries into products.

The Administration's *American Competitiveness Initiative* (ACI) calls for a 10-year doubling of the funding of the NIST laboratories, in recognition of the contribution basic measurement and standardization science makes to American innovation. However, in recent years the budget requests for both ATP and MEP have recommended significant funding cuts to both programs, with Congress generally restoring the funding.

NIST's last comprehensive authorization was by the *American Technology Preeminence Act of 1991* (P.L. 102–245, enacted in 1992) which authorized all of NIST's programs for fiscal years 1992 and 1993. A portion of NIST was most recently authorized by the *Technology Administration Act of 1998* (P.L. 105–309, enacted in 1998), which authorized only the laboratory programs of the Institute for fiscal years 1998 and 1999. Since those bills, NIST has submitted legislative authorization requests to the Congress (most recently in 2002) and completed a major laboratory upgrade at its Gaithersburg, MD campus (the Advanced Metrology Laboratory). It has also embarked on laboratory upgrades to its Boulder, CO campus and requested funds for upgrades to the Center for Neutron Research. In addition, starting in FY07 the NIST budget request has included significant increases for its laboratory activities.

III. Subcommittee Actions

The Subcommittee on Technology and Innovation heard testimony in the 110th Congress relevant to the programs authorized in H.R. 1868 at a hearing held February 15, 2007. The witnesses at that hearing were Dr. William Jeffrey, Director of NIST; Dr. Stan Williams, Senior Fellow at Hewlett-Packard testifying on behalf of ASTRA, the Alliance for Science & Technology Research in America; Mr. Michael Borrus, General Partner of X/Seed Capital; Mr. Peter Murray, Vice President of Welch Allyn, Inc.; and Mr. Michael Ryan, President and CEO of TUG Technologies Corporation.

On April 17, 2007, Representative David Wu, Chairman of the Subcommittee on Technology and Innovation of the Committee on Science and Technology, for himself and Representatives Gingrey, Gordon, Hall (TX), Mitchell, and Ehlers, introduced H.R. 1868, the *Technology Innovation and Manufacturing Stimulation Act of 2007,* a bill to authorize appropriations for fiscal years 2008, 2009, and 2010 for the National Institute of Standards and Technology, and for other purposes.

The Subcommittee on Technology and Innovation met to consider H.R. 1868 on Thursday, April 19, 2007, and considered the following amendments to the bill:

1. Mr. Wu and Dr. Gingrey offered an amendment to make technical corrections to the bill.
2. Mr. Matheson offered an amendment to emphasize the need for technology transfer projects to be included in the Manufacturing Extension Center competitive grant program created in Section 203 (c) of the bill.

By unanimous consent, the amendments were considered en bloc, and were agreed to by voice vote. The bill as amended was then adopted by voice vote. Dr. Gingrey moved that the Subcommittee favorably report H.R. 1868 as amended to the Full Committee, and the motion was agreed to by voice vote.

IV. Summary of Major Provisions of the Bill

Title I of H.R. 1868 authorizes $2.5 billion for the National Institute of Standards and Technology for fiscal years 2008–2010, including $1.5 billion for scientific and technical research and services (STRS), $24 million for the Malcolm Baldrige National Quality Award Program; $230 million for construction and maintenance; $367 million for the Manufacturing Extension Partnership (MEP); and $402 million for the Technology Innovation Program (TIP), which is established in Section 204 of the bill to replace the Advanced Technology Program (ATP). Title II requires the Director to submit a three-year programmatic planning document and updates concurrent with the annual budget request, and requires the Visiting Committee on Advanced Technology (VCAT) to comment on this document; creates Advisory Boards for the MEP and TIP, which have significant industry representation and are required to comment on relevant sections of the programmatic planning document and updates; establishes a competitive grant program within MEP for MEP Centers or consortia of Centers to research manufacturing technologies; repeals the Advanced Technology Program and establishes the Technology Innovation Program, which will award cost-shared grants to small- and medium-sized businesses and joint ventures including universities and other organizations to pursue high-risk technologies with potential significant broad benefits to the Nation; and establishes a program of research

fellowships at NIST in manufacturing sciences, and a program of collaborative manufacturing grants for industry and non-industry partnerships to pursue innovative, multi-disciplinary manufacturing technologies. Title III makes a number of technical changes to the NIST statute.

V. Section-by-Section Analysis of the Bill, as reported by the Subcommittee

SEC. 1. Short title—The Technology Innovation and Manufacturing Stimulation Act of 2007.

TITLE I—AUTHORIZATION OF APPROPRIATIONS

SEC. 101. Scientific and Technical Research and Services—Authorizes $470.9 million in FY08, $497.8 million in FY09, and $537.6 million in FY10 for the NIST lab activities. Authorizes $7.9 million in FY08, $8.1 million in FY09, and $8.3 million in FY10 for the Baldrige National Quality Award Program. Authorizes $93.9 million in FY08, $86.4 million in FY09, and $49.7 million for construction and maintenance of facilities.

SEC. 102. Industrial Technology Services—Authorizes $110 million in FY08, $141.5 million in FY09, and $150.5 million in FY10 for the Technology Innovation Program (TIP), which replaces the existing Advanced Technology Program (ATP) (see Section 204). Requires that at least $45 million in each year be for new TIP awards. Authorizes $113.0 million in FY08, $122.0 million in FY09, and $131.8 million in FY10 for the Manufacturing Extension Partnership (MEP). Sets aside up to $1 million in FY08 and $4 million in FY09 and FY10 from the MEP funds for a competitive grant program established in Section 203(c).

TITLE II—INNOVATION AND TECHNOLOGY POLICY REFORMS

SEC. 201. Institute-Wide Planning Report—Requires the Director of NIST to submit a three-year programmatic planning document for NIST to the Congress concurrent with the budget submission the first year after enactment, and then to submit yearly updates with each new budget submission.

SEC. 202. Report by Visiting Committee—Changes the reporting requirement for the Visiting Committee on Advanced Technology (VCAT) to be due 30 days after the submission of the President's budget to Congress, and requires the VCAT to comment on the NIST Director's three-year planning document.

SEC. 203. Manufacturing Extension Partnership—Establishes the MEP Advisory Board, which consists of 10 members appointed by the NIST Director, serving three-year terms. Two members must be employed by or on advisory boards of the MEP Centers, and five others must be from small manufacturers. None can be federal employees. The board meets no less than twice a year, and provides the NIST Director with advice on and assessments of MEP. It also comments on the relevant sections of the NIST Director's three-year planning document at the same time as the VCAT. The Board is governed by the Federal Advisory Committee Act (FACA). Allows MEP to accept funds from other federal agencies and from the private sector. Establishes the MEP competitive grants program for MEP Centers or consortia of Centers. The grants are peer reviewed and competitively awarded for Center(s) to conduct projects to solve new or emerging manufacturing problems. Awardees are not required to provide matching funds.

SEC. 204. Technology Innovation Program—Repeals the existing Advanced Technology Program (ATP) statute and creates the Technology Innovation Program (TIP).

- *Establishment*—Creates the "Technology Innovation Program" with the purpose of assisting businesses and universities to accelerate the development of high-risk technologies that will have a broadly-based economic impact.
- *Grants*—Provides the Director of NIST with the authority to make grants under this program to either small or medium-sized businesses or joint ventures. For applicants that are single companies, they must be small or medium-sized businesses. Grants are for no more than $3 million over three years, but can be extended at no additional cost provided there is congressional notice. The funding may only be used for direct costs, and can not be more than 50 percent of total costs. Grants may also be made to joint ventures, which must be led by a small or medium business or a university. A joint venture grant may not exceed $9 million over five years and the federal share of the project must be no more than 50 percent.
- *Award Criteria*—Provides criteria for the selection of grants based upon scientific and technological merit, the project's potential for benefits that extend

beyond direct return to the applicant, the inclusion of a technical planning document, the technical competence of the project team and the organizational structure and management plan, and an explanation of why TIP support is necessary.

- *External Review of Proposals*—Requires the Director to consult with industry or other expert sources with no proprietary or financial interest in the project to review the need for or value of any proposal.
- *Intellectual Property Rights Ownership*—Addresses allocation of intellectual property developed by a joint venture. Allows IP to vest to any participant as agreed to by the joint venture participants. In accordance with current law allows the Federal Government to retain a license for any IP for U.S. Government use only. Makes clear that joint venture participants can license their IP.
- *Program Operation*—Requires the Director to issue regulations within nine months of enactment for the operation of the program, including selection criteria, financial and audit procedures and dissemination of results.
- *Continuation of ATP Grants*—Requires the TIP to continue funding for awards made under the prior Advanced Technology Program.
- *Coordination with Other Federal Technology Programs*—Requires the Director to coordinate with other federal agencies to ensure there is no duplication of effort.
- *Acceptance of Funds From Other Federal Agencies*—Allows NIST to accept funds from other federal agencies to fund TIP awards. Any awards so funded must be selected and carried out as all other TIP awards.
- *TIP Advisory Board*—Establishes the TIP Advisory Board, which consists of 10 members appointed by the NIST Director, serving three-year terms. Seven members must be from U.S. industry, and none can be federal employees. The board meets no less than twice a year, and provides the NIST Director with advice on and assessments of TIP. It also comments on the relevant sections of the NIST Director's three-year planning document at the same time as the VCAT. The Board is governed by the Federal Advisory Committee Act (FACA).
- *Definitions*—
  owned by a parent company incorporated in another country provided that the company's participation is in U.S. economic interests, including R&D investment in the U.S. and increasing U.S. employment. Also, the country of incorporation must afford similar opportunities for U.S. companies, and provide for effective protection of IP rights.
  separately owned for-profit companies and the lead must be a small or medium business or at least one small or medium business and one institution of higher education where either can be the lead. Joint ventures may include additional for-profit companies, institutions of higher education or other organizations (such as research institutes).

SEC. 205. Research Fellowships—Raises the amount NIST can spend on research fellowships from one percent to 1.5 percent of the total appropriations. This will also allow for additional manufacturing research fellowships as established in Section 207.

SEC. 206. Collaborative Manufacturing Research Pilot Grants—Establishes a collaborative manufacturing research pilot grant program for partnerships between at least one industry and one non-industry partner, with the purpose of fostering collaboration and conducting applied research on manufacturing. The award can be no more than one-third of the cost of the partnership, with no more than an additional one-third coming from other federal sources. Selection criteria for the awards are based on the breadth of impact of the project, the novelty and scientific merit of the proposal, and the demonstrated capability of the participants. Awards must be distributed among a range of industry sectors and firm sizes. NIST will run one pilot competition and awards will be for three years.

SEC. 207. Manufacturing Fellowship Program—Establishes a program of postdoctoral and senior research fellowships at NIST in manufacturing sciences.

SEC. 208. Meetings of Visiting Committee on Advanced Technology—Reduces the frequency of meetings for the Visiting Committee on Advanced Technology (VCAT) from quarterly to twice annually.

TITLE III—MISCELLANEOUS

SEC. 301. Post-Doctoral Fellows—Raises the cap on the number of post-doctoral fellows that NIST can accept each year from 60 to 120.

SEC. 302. Financial Agreements Clarification—Authorizes NIST to enter into grants and cooperative agreements, in addition to its current authority to enter into contracts and cooperative research and development agreements (CRADAs).

SEC. 303. Working Capital Fund Transfers—Authorizes NIST to transfer up to 0.25 percent of its total appropriations, and any funds from other agencies given to NIST to produce Standard Reference Materials, into the Working Capital Fund.

SEC. 304. Retention of Depreciation Surcharge—Allows NIST to retain the building use and depreciation surcharge fees that are charged by the General Services Administration.

SEC. 305. Non-Energy Inventions Program—Repeals an outdated statute requiring the NIST Director to establish a program to evaluate inventions.

SEC. 306. Redefinition of the Metric System—Clarifies in statute that the metric system used in the U.S. is the modern system of metric measurement units.

SEC. 307. Repeal of Redundant and Obsolete Authority—Eliminates archaic, special-case language related to the definition of units of electrical and light measurement.

SEC. 308. Clarification of Standard Time and Time Zones—Specifies that standard time in the U.S. is Coordinated Universal Time, and fixes technical problems in statute with the time zone definitions.

H.R. 1868, AS REPORTED BY THE SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION

On April 19, 2007

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "Technology Innovation and Manufacturing Stimulation Act of 2007".

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

TITLE I—AUTHORIZATION OF APPROPRIATIONS

SEC. 101. SCIENTIFIC AND TECHNICAL RESEARCH AND SERVICES.

(a) LABORATORY ACTIVITIES.—There are authorized to be appropriated to the Secretary of Commerce for the scientific and technical research and services laboratory activities of the National Institute of Standards and Technology—

(1) $470,879,000 for fiscal year 2008;

(2) $497,750,000 for fiscal year 2009; and

(3) $537,569,000 for fiscal year 2010.

(b) MALCOLM BALDRIGE NATIONAL QUALITY AWARD PROGRAM.—There are authorized to be appropriated to the Secretary of Commerce for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a)—

(1) $7,860,000 for fiscal year 2008;

(2) $8,096,000 for fiscal year 2009; and

(3) $8,339,000 for fiscal year 2010.

(c) CONSTRUCTION AND MAINTENANCE.—There are authorized to be appropriated to the Secretary of Commerce for construction and maintenance of facilities of the National Institute of Standards and Technology—

(1) $93,865,000 for fiscal year 2008;

(2) $86,371,000 for fiscal year 2009; and

(3) $49,719,000 for fiscal year 2010.

SEC. 102. INDUSTRIAL TECHNOLOGY SERVICES.

There are authorized to be appropriated to the Secretary of Commerce for Industrial Technology Services activities of the National Institute of Standards and Technology—

(1) $222,968,000 for fiscal year 2008, of which—

(A) $110,000,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and

(B) $112,968,000 shall be for the Manufacturing Extension Partnership program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $1,000,000 shall be for the competitive grant program under section 25(f) of such Act;

(2) $263,505,000 for fiscal year 2009, of which—

(A) $141,500,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and

(B) $122,005,000 shall be for the Manufacturing Extension Partnership Program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than $4,000,000 shall be for the competitive grant program under section 25(f) of such Act; and

(3) $282,266,000 for fiscal year 2010, of which—

(A) $150,500,000 shall be for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n), of which at least $45,000,000 shall be for new awards; and

(B) $131,766,000 shall be for the Manufacturing Extension Partnership Program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l), of which not more than

$4,000,000 shall be for the competitive grant program under section 25(f) of such Act.

TITLE II—INNOVATION AND TECHNOLOGY POLICY REFORMS

SEC. 201. INSTITUTE-WIDE PLANNING REPORT.

Section 23 of the National Institute of Standards and Technology Act (15 U.S.C. 278i) is amended by adding at the end the following new subsections:

''(c) Concurrent with the submission to Congress of the President's annual budget request in the first year after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall transmit to the Congress a 3-year programmatic planning document for the Institute, including programs under the Scientific and Technical Research and Services, Industrial Technology Services, and Construction of Research Facilities functions.

''(d) Concurrent with the submission to the Congress of the President's annual budget request in each year after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall transmit to the Congress an update to the 3-year programmatic planning document transmitted under subsection (c), revised to cover the first 3 fiscal years after the date of that update.''.

SEC. 202. REPORT BY VISITING COMMITTEE.

Section 10(h)(1) of the National Institute of Standards and Technology Act (15 U.S.C. 278(h)(1)) is amended—

(1) by striking ''on or before January 31 in each year'' and inserting ''within 30 days after the submission to Congress of the President's annual budget request in each year''; and

(2) by adding to the end the following: ''Such report also shall comment on the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).''.

SEC. 203. MANUFACTURING EXTENSION PARTNERSHIP.

(a) MEP ADVISORY BOARD.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k) is amended by adding at the end the following new subsection:

''(e) MEP ADVISORY BOARD.—(1) There is established within the Institute a Manufacturing Extension Partnership Advisory Board (in this Act referred to as the 'MEP Advisory Board'). The MEP Advisory Board shall consist of 10 members broadly representative of stakeholders, to be appointed by the Director. At least 2 members shall be employed by or on an advisory board for the Centers, and at least 5 other members shall be from

United States small businesses in the manufacturing sector. No member shall be an employee of the Federal Government.

''(2)(A) Except as provided in subparagraph (B) or (C), the term of office of each member of the MEP Advisory Board shall be 3 years.

''(B) The original members of the MEP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

''(C) Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

''(D) Any person who has completed two consecutive full terms of service on the MEP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

''(3) The MEP Advisory Board shall meet no less than 2 times annually, and provide to the Director—

''(A) advice on Manufacturing Extension Partnership programs, plans, and policies;

"(B) assessments of the soundness of Manufacturing Extension Partnership plans and strategies; and

"(C) assessments of current performance against Manufacturing Extension Partnership program plans.

"(4) In discharging its duties under this subsection, the MEP Advisory Board shall function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.

"(5) The MEP Advisory Board shall transmit an annual report to the Secretary for transmittal to the Congress within 30 days after the submission to the Congress of the President's annual budget request in each year. Such report shall address the status of the Manufacturing Extension Partnership program and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).".

(b) ACCEPTANCE OF FUNDS.—Section 25(d) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(d)) is amended to read as follows:

"(d) ACCEPTANCE OF FUNDS.—In addition to such sums as may be appropriated to the Secretary and Director to operate the Centers program, the Secretary and Di-

rector also may accept funds from other Federal departments and agencies and under section 2(c)(7) from the private sector for the purpose of strengthening United States manufacturing. Such funds, if allocated to a Center or Centers, shall not be considered in the calculation of the Federal share of capital and annual operating and maintenance costs under subsection (c).''.

(c) MANUFACTURING EXTENSION CENTER COMPETITIVE GRANT PROGRAM.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k), as amended by subsection (a) of this section, is further amended by adding at the end the following new subsection:

''(f) COMPETITIVE GRANT PROGRAM.—

''(1) ESTABLISHMENT.—The Director shall establish, within the Manufacturing Extension Partnership program under this section and section 26 of this Act, a program of competitive awards among participants described in paragraph (2) for the purposes described in paragraph (3).

''(2) PARTICIPANTS.—Participants receiving awards under this subsection shall be the Centers, or a consortium of such Centers.

''(3) PURPOSE.—The purpose of the program under this subsection is to develop projects to solve

new or emerging manufacturing problems as determined by the Director, in consultation with the Director of the Manufacturing Extension Partnership program, the Manufacturing Extension Partnership Advisory Board, and small and medium-sized manufacturers. One or more themes for the competition may be identified, which may vary from year to year, depending on the needs of manufacturers and the success of previous competitions. These themes shall be related to projects associated with manufacturing extension activities, including supply chain integration and quality management, and including the transfer of technology based on the technological needs of manufacturers and available technologies from institutions of higher education, laboratories, and other technology producing entities, or extend beyond these traditional areas.

"(4) APPLICATIONS.—Applications for awards under this subsection shall be submitted in such manner, at such time, and containing such information as the Director shall require, in consultation with the Manufacturing Extension Partnership Advisory Board.

"(5) SELECTION.—Awards under this subsection shall be peer reviewed and competitively

awarded. The Director shall select proposals to receive awards—

"(A) that utilize innovative or collaborative approaches to solving the problem described in the competition;

"(B) that will improve the competitiveness of industries in the region in which the Center or Centers are located; and

"(C) that will contribute to the long-term economic stability of that region.

"(6) PROGRAM CONTRIBUTION.—Recipients of awards under this subsection shall not be required to provide a matching contribution.".

SEC. 204. TECHNOLOGY INNOVATION PROGRAM.

Section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n) is amended to read as follows:

"TECHNOLOGY INNOVATION PROGRAM

"SEC. 28. (a) ESTABLISHMENT.—There is established in the Institute a Technology Innovation Program for the purpose of assisting United States businesses and institutions of higher education to accelerate the development and application of challenging, high-risk technologies that promise widespread economic benefits for the Nation.

"(b) GRANTS.—

"(1) IN GENERAL.—The Director shall make grants under this section to eligible companies for research and development on high-risk, high-payoff emerging and enabling technologies that offer significant potential benefits to the United States economy and a wide breadth of potential application, and form an important technical basis for future innovations. Such grants shall be made to eligible companies that are—

"(A) small or medium-sized businesses that are substantially involved in the research and development, including having a leadership role in programmatically steering the project and defining the research agenda; or

"(B) joint ventures.

"(2) SINGLE COMPANY GRANTS.—No grant made under paragraph (1)(A) shall exceed $3,000,000 over 3 years. The Federal share of a project funded by such a grant shall not be more than 50 percent of total project costs. An award under paragraph (1)(A) may be extended beyond 3 years only if the Director transmits to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a full and

complete explanation of such award, including reasons for exceeding 3 years. Federal funds granted under paragraph (1)(A) may be used only for direct costs and not for indirect costs, profits, or management fees of a contractor.

"(3) JOINT VENTURE GRANTS.—No grant made under paragraph (1)(B) shall exceed $9,000,000 over 5 years. The Federal share of a project funded by such a grant shall not be more than 50 percent of total project costs.

"(c) AWARD CRITERIA.—The Director shall award grants under this section only to an eligible company—

"(1) whose proposal has scientific and technological merit;

"(2) whose application establishes that the proposed technology has strong potential to generate substantial benefits to the Nation that extend significantly beyond the direct return to the applicant;

"(3) whose application establishes that the research has strong potential for advancing the state-of-the-art and contributing significantly to the United States scientific and technical knowledge base;

"(4) whose application establishes that the research is aimed at overcoming a scientific or technological barrier;

"(5) who has provided a technical plan that clearly identifies the core innovation, the technical approach, major technical hurdles, and the attendant risks, and that clearly establishes the feasibility of the technology through adequately detailed plans linked to major technical barriers;

"(6) whose application establishes that the team proposed to carry out the work has a high level of scientific and technical expertise to conduct research and development, has a high level of commitment to the project, and has access to appropriate research facilities;

"(7) whose proposal explains why Technology Innovation Program support is necessary;

"(8) whose application includes a plan for advancing the technology into commercial use; and

"(9) whose application assesses the project's organizational structure and management plan.

"(d) EXTERNAL REVIEW OF PROPOSALS.—In order to analyze the need for or the value of any proposal made by a joint venture or company requesting the Director's assistance under this section, or to monitor the progress

of any project which receives funds under this section, the Director shall consult with industry or other expert sources that do not have a proprietary or financial interest in the proposal or project.

''(e) INTELLECTUAL PROPERTY RIGHTS OWNERSHIP.—

''(1) IN GENERAL.—Title to any intellectual property developed by a joint venture from assistance provided under this section may vest in any participant in the joint venture, as agreed by the members of the joint venture, notwithstanding section 202(a) and (b) of title 35, United States Code. The United States may reserve a nonexclusive, nontransferable, irrevocable paid-up license, to have practiced for or on behalf of the United States in connection with any such intellectual property, but shall not in the exercise of such license publicly disclose proprietary information related to the license. Title to any such intellectual property shall not be transferred or passed, except to a participant in the joint venture, until the expiration of the first patent obtained in connection with such intellectual property.

''(2) LICENSING.—Nothing in this subsection shall be construed to prohibit the licensing to any

company of intellectual property rights arising from assistance provided under this section.

"(3) DEFINITION.—For purposes of this subsection, the term 'intellectual property' means an invention patentable under title 35, United States Code, or any patent on such an invention, or any work for which copyright protection is available under title 17, United States Code.

"(f) PROGRAM OPERATION.—Not later than 9 months after the date of enactment of the Technology Innovation and Manufacturing Stimulation Act of 2007, the Director shall issue regulations—

"(1) establishing criteria for the selection of recipients of assistance under this section;

"(2) establishing procedures regarding financial reporting and auditing to ensure that contracts and awards are used for the purposes specified in this section, are in accordance with sound accounting practices, and are not funding existing or planned research programs that would be conducted in the same time period in the absence of financial assistance under this section; and

"(3) providing for appropriate dissemination of Technology Innovation Program research results.

''(g) CONTINUATION OF ATP GRANTS.—The Director shall, through the Technology Innovation Program, continue to provide support originally awarded under the Advanced Technology Program, in accordance with the terms of the original award.

''(h) COORDINATION WITH OTHER FEDERAL TECHNOLOGY PROGRAMS.—In carrying out this section, the Director shall, as appropriate, coordinate with other senior Federal officials to ensure cooperation and coordination in Federal technology programs and to avoid unnecessary duplication of efforts.

''(i) ACCEPTANCE OF FUNDS FROM OTHER FEDERAL AGENCIES.—In addition to amounts appropriated to carry out this section, the Secretary and the Director may accept funds from other Federal agencies to support awards under the Technology Innovation Program. Any award under this section which is supported with funds from other Federal agencies shall be selected and carried out according to the provisions of this section.

''(j) TIP ADVISORY BOARD.—

''(1) ESTABLISHMENT.—There is established within the Institute a Technology Innovation Program Advisory Board. The TIP Advisory Board shall consist of 10 members appointed by the Director, at least 7 of which shall be from United States

industry, chosen to reflect the wide diversity of technical disciplines and industrial sectors represented in Technology Innovation Program projects. No member shall be an employee of the Federal Government.

"(2) TERMS OF OFFICE.—(A) Except as provided in subparagraph (B) or (C), the term of office of each member of the TIP Advisory Board shall be 3 years.

"(B) The original members of the TIP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

"(C) Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

"(D) Any person who has completed two consecutive full terms of service on the TIP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

"(3) PURPOSE.—The TIP Advisory Board shall meet no less than 2 times annually, and provide to the Director—

"(A) advice on programs, plans, and policies of the Technology Innovation Program;

"(B) reviews of the Technology Innovation Program's efforts to assess its economic impact;

"(C) reports on the general health of the program and its effectiveness in achieving its legislatively mandated mission;

"(D) guidance on areas of technology that are appropriate for Technology Innovation Program funding; and

"(E) recommendations as to whether, in order to better assess whether specific innovations to be pursued are being adequately supported by the private sector, the Director could benefit from advice and information from additional industry and other expert sources without a proprietary or financial interest in proposals being evaluated.

"(4) ADVISORY CAPACITY.—In discharging its duties under this subsection, the TIP Advisory Board shall function solely in an advisory capacity,

in accordance with the Federal Advisory Committee Act.

"(5) ANNUAL REPORT.—The TIP Advisory Board shall transmit an annual report to the Secretary for transmittal to the Congress within 30 days after the submission to Congress of the President's annual budget request in each year. Such report shall address the status of the Technology Innovation Program and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to the Congress by the Director under section 23(c) and (d).

"(k) DEFINITIONS.—For purposes of this section—

"(1) the term 'eligible company' means a company that is incorporated in the United States and does a majority of its business in the United States, and that either—

"(A) is majority owned by citizens of the United States; or

"(B) is owned by a parent company incorporated in another country and the Director finds that—

"(i) the company's participation in the Technology Innovation Program would be

in the economic interest of the United States, as evidenced by—

"(I) investments in the United States in research and manufacturing (including the manufacture of major components or subassemblies in the United States);

"(II) significant contributions to employment in the United States; and

"(III) agreement with respect to any technology arising from assistance provided under this section to promote the manufacture within the United States of products resulting from that technology (taking into account the goals of promoting the competitiveness of United States industry); and

"(ii) the company is incorporated in a country which—

"(I) affords to United States-owned companies opportunities, comparable to those afforded to any other company, to participate in any joint venture similar to those receiving funding under this section;

"(II) affords to United States-owned companies local investment opportunities comparable to those afforded any other company; and

"(III) affords adequate and effective protection for the intellectual property rights of United States-owned companies;

"(2) the term 'institution of higher education' has the meaning given that term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001);

"(3) the term 'joint venture' means a joint venture that—

"(A) includes either—

"(i) at least 2 separately owned for-profit companies that are both substantially involved in the project and both of which are contributing to the cost-sharing required under this section, with the lead entity of the joint venture being one of those companies that is a small or medium-sized business; or

"(ii) at least one small or medium-sized business and one institution of higher

education that are both substantially involved in the project and both of which are contributing to the cost-sharing required under this section, with the lead entity of the joint venture being either that small or medium-sized business or that institution of higher education; and

"(B) may include additional for-profit companies, institutions of higher education, and other organizations that may or may not contribute non-Federal funds to the project; and

"(4) the term 'TIP Advisory Board' means the advisory board established under subsection (j).".

SEC. 205. RESEARCH FELLOWSHIPS.

Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–l) is amended by striking "up to 1 per centum of the" and inserting "up to 1.5 percent of the".

SEC. 206. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.

The National Institute of Standards and Technology Act is amended—

(1) by redesignating the first section 32 (15 U.S.C. 271 note) as section 34 and moving it to the end of the Act; and

(2) by inserting before the section moved by paragraph (1) the following new section:

"SEC. 33. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.

"(a) AUTHORITY.—

"(1) ESTABLISHMENT.—The Director shall establish a pilot program of awards to partnerships among participants described in paragraph (2) for the purposes described in paragraph (3). Awards shall be made on a peer-reviewed, competitive basis.

"(2) PARTICIPANTS.—Such partnerships shall include at least—

"(A) 1 manufacturing industry partner; and

"(B) 1 nonindustry partner.

"(3) PURPOSE.—The purpose of the program under this section is to foster cost-shared collaborations among firms, educational institutions, research institutions, State agencies, and nonprofit organizations to encourage the development of innovative, multidisciplinary manufacturing technologies. Partnerships receiving awards under this section shall conduct applied research to develop new manufacturing processes, techniques, or materials that would contribute to improved performance, productivity,

and competitiveness of United States manufacturing, and build lasting alliances among collaborators.

''(b) PROGRAM CONTRIBUTION.—Awards under this section shall provide for not more than one-third of the costs of a partnership. Not more than an additional one-third of such costs may be obtained directly or indirectly from other Federal sources.

''(c) APPLICATIONS.—Applications for awards under this section shall be submitted in such manner, at such time, and containing such information as the Director shall require. Such applications shall describe at a minimum—

''(1) how each partner will participate in developing and carrying out the research agenda of the partnership;

''(2) the research that the grant would fund; and

''(3) how the research to be funded with the award would contribute to improved performance, productivity, and competitiveness of the United States manufacturing industry.

''(d) SELECTION CRITERIA.—In selecting applications for awards under this section, the Director shall consider at a minimum—

"(1) the degree to which projects will have a broad impact on manufacturing;

"(2) the novelty and scientific and technical merit of the proposed projects; and

"(3) the demonstrated capabilities of the applicants to successfully carry out the proposed research.

"(e) DISTRIBUTION.—In selecting applications under this section the Director shall ensure, to the extent practicable, a distribution of overall awards among a variety of manufacturing industry sectors and a range of firm sizes.

"(f) DURATION.—In carrying out this section, the Director shall run a single pilot competition to solicit and make awards. Each award shall be for a 3-year period.".

SEC. 207. MANUFACTURING FELLOWSHIP PROGRAM.

Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–1) is amended—

(1) by inserting "(a) IN GENERAL.—" before "The Director is authorized"; and

(2) by adding at the end the following new subsection:

"(b) MANUFACTURING FELLOWSHIP PROGRAM.—

"(1) ESTABLISHMENT.—To promote the development of a robust research community working at

the leading edge of manufacturing sciences, the Director shall establish a program to award—

"(A) postdoctoral research fellowships at the Institute for research activities related to manufacturing sciences; and

"(B) senior research fellowships to established researchers in industry or at institutions of higher education who wish to pursue studies related to the manufacturing sciences at the Institute.

"(2) APPLICATIONS.—To be eligible for an award under this subsection, an individual shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require.

"(3) STIPEND LEVELS.—Under this subsection, the Director shall provide stipends for postdoctoral research fellowships at a level consistent with the National Institute of Standards and Technology Postdoctoral Research Fellowship Program, and senior research fellowships at levels consistent with support for a faculty member in a sabbatical position.".

SEC. 208. MEETINGS OF VISITING COMMITTEE ON ADVANCED TECHNOLOGY.

Section 10(d) of the National Institute of Standards and Technology Act (15 U.S.C. 278(d)) is amended by striking ''quarterly'' and inserting ''twice each year''.

TITLE III—MISCELLANEOUS

SEC. 301. POST-DOCTORAL FELLOWS.

Section 19 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–2) is amended by striking ''nor more than 60 new fellows'' and inserting ''nor more than 120 new fellows''.

SEC. 302. FINANCIAL AGREEMENTS CLARIFICATION.

Section 2(b)(4) of the National Institute of Standards and Technology Act (15 U.S.C. 272(b)(4)) is amended by inserting ''and grants and cooperative agreements,'' after ''arrangements,''.

SEC. 303. WORKING CAPITAL FUND TRANSFERS.

Section 12 of the National Institute of Standards and Technology Act (15 U.S.C. 278b) is amended by adding at the end the following:

''(g) AMOUNT AND SOURCE OF TRANSFERS.—Not more than one-quarter of one percent of the amounts appropriated to the Institute for any fiscal year may be transferred to the fund, in addition to any other transfer authority. In addition, funds provided to the Institute from other Federal agencies for the purpose of production

of Standard Reference Materials may be transferred to the fund.''.

SEC. 304. RETENTION OF DEPRECIATION SURCHARGE.

Section 14 of the National Institute of Standards and Technology Act (15 U.S.C. 278d) is amended—

(1) by inserting ''(a) IN GENERAL.—'' before ''Within''; and

(2) by adding at the end the following:

''(b) RETENTION OF FEES.—The Director is authorized to retain all building use and depreciation surcharge fees collected pursuant to OMB Circular A–25. Such fees shall be collected and credited to the Construction of Research Facilities Appropriation Account for use in maintenance and repair of the Institute's existing facilities.''.

SEC. 305. NON-ENERGY INVENTIONS PROGRAM.

Section 27 of the National Institute of Standards and Technology Act (15 U.S.C. 278m) is repealed.

SEC. 306. REDEFINITION OF THE METRIC SYSTEM.

Section 2 of the Act of July 28, 1866, entitled ''An Act to authorize the Use of the Metric System of Weights and Measures'' (15 U.S.C. 205; 14 Stat. 339) is amended to read as follows:

''SEC. 2. METRIC SYSTEM DEFINED.

''The metric system of measurement shall be defined as the International System of Units as established in

1960, and subsequently maintained, by the General Conference of Weights and Measures, and as interpreted or modified for the United States by the Secretary of Commerce.".

SEC. 307. REPEAL OF REDUNDANT AND OBSOLETE AUTHORITY.

The Act of July 21, 1950, entitled "An Act To redefine the units and establish the standards of electrical and photometric measurements" (15 U.S.C. 223 and 224) is repealed.

SEC. 308. CLARIFICATION OF STANDARD TIME AND TIME ZONES.

(a) Section 1 of the Act of March 19, 1918, (commonly known as the "Calder Act") (15 U.S.C. 261) is amended—

(1) by inserting "(a) IN GENERAL.—" before "For the purpose";

(2) by striking the second sentence and the extra period after it an inserting "Except as provided in section 3(a) of the Uniform Time Act of 1966 (15 U.S.C. 260a), the standard time of the first zone shall be Coordinated Universal Time retarded by 4 hours; that of the second zone retarded by 5 hours; that of the third zone retarded by 6 hours; that of the four zone retarded by 7 hours;

that of the fifth zone retarded by 8 hours; that of the sixth zone retarded by 9 hours; that of the seventh zone retarded by 10 hours; that of the eighth zone retarded by 11 hours; and that of the ninth zone shall be Coordinated Universal Time advanced by 10 hours."; and

(3) by adding at the end the following:

"(b) COORDINATED UNIVERSAL TIME DEFINED.—In this section, the term 'Coordinated Universal Time' means the time scale maintained through the General Conference of Weights and Measures and interpreted or modified for the United States by the Secretary of Commerce in coordination with the Secretary of the Navy.".

(b) Section 3 of the Act of March 19, 1918, (commonly known as the "Calder Act") (15 U.S.C. 264) is amended by striking "third zone" and inserting "fourth zone".

COMMITTEE ON SCIENCE AND TECHNOLOGY
FULL COMMITTEE MARKUP
April 25, 2007

AMENDMENT ROSTER

H.R. 1868, *Technology Innovation and Manufacturing Stimulation Act of 2007*

No.	Sponsor	Description	Results
1.	Ms. Biggert	Amendment clarifying that national laboratories and nonprofit research institutes may participate in Technology Innovation Program projects.	Adopted by voice vote.
2.	Mr. Gingrey	Amendment to Section 309 allowing the procurement of temporary and intermittent services of experts or consultants to assist on urgent or short-term research projects.	Adopted by voice vote.
3.	Ms. E.B. Johnson w/ Mr. Gingrey	Amendment to Section 309 removing the per-category award restriction and specifying that no more than 18 awards may be granted per year.	Adopted by voice vote.

AMENDMENT TO H.R. 1868

OFFERED BY MRS. BIGGERT OF ILLINOIS

Page 11, line 22, after "education" insert "or other organizations, such as national laboratories and nonprofit research institutes,".

Page 23, line 1, after "education" insert "or other organization, such as a national laboratory or nonprofit research institute,".

Page 23, line 10, after "organizations" insert ", such as national laboratories and nonprofit research institutes,".

AMENDMENT TO H.R. 1868

OFFERED BY MR. GINGREY OF GEORGIA

At the end of the bill, insert the following new section:

SEC. 309. PROCUREMENT OF TEMPORARY AND INTERMITTENT SERVICES.

(a) IN GENERAL.—The Director of the National Institute of Standards and Technology may procure the temporary or intermittent services of experts or consultants (or organizations thereof) in accordance with section 3109(b) of title 5, United States Code to assist on urgent or short-term research projects.

(b) EXTENT OF AUTHORITY.—A procurement under this section may not exceed 1 year in duration, and the Director shall procure no more than 200 experts and consultants per year.

(c) SUNSET.—This section shall cease to be effective after September 30, 2010.

(d) REPORT TO CONGRESS.—Not later than 2 years after the date of enactment of this Act, the Comptroller General shall report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the

Senate on whether additional safeguards would be needed with respect to the use of authorities granted under this section if such authorities were to be made permanent.

AMENDMENT TO H.R. 1868

OFFERED BY MS. EDDIE BERNICE JOHNSON OF TEXAS

At the end of the bill, insert the following new section:

SEC. 309. MALCOLM BALDRIGE AWARDS.

Section 17(c)(3) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a(c)(3)) is amended to read as follows:

"(3) In any year, not more than 18 awards may be made under this section to recipients who have not previously received an award under this section, and no award shall be made within any category described in paragraph (1) if there are no qualifying enterprises in that category.".