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STEM EDUCATION COORDINATION ACT OF 2009

JUNE 2, 2009.—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

REPORT

[To accompany H.R. 1709]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 1709) to establish a committee under the National Science and Technology Council with the responsibility to coordinate science, technology, engineering, and mathematics education activities and programs of all Federal agencies, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

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I. BILL

The amendment is as follows:

Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "STEM Education Coordination Act of 2009".

SEC. 2. DEFINITION.

In this Act, the term "STEM" means science, technology, engineering, and mathematics.

SEC. 3. COORDINATION OF FEDERAL STEM EDUCATION.

(a) ESTABLISHMENT.—The Director of the Office of Science and Technology Policy shall establish a committee under the National Science and Technology Council with the responsibility to coordinate Federal programs and activities in support of STEM education, including at the National Science Foundation, the Department of Energy, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the Department of Education, and all other Federal agencies that have programs and activities in support of STEM education.

(b) RESPONSIBILITIES.—The committee established under subsection (a) shall—

(1) coordinate the STEM education activities and programs of the Federal agencies;

(2) develop, implement through the participating agencies, and update once every 5 years a 5-year STEM education strategic plan, which shall—

(A) specify and prioritize annual and long-term objectives;

(B) specify the common metrics that will be used to assess progress toward achieving the objectives;

(C) describe the approaches that will be taken by each participating agency to assess the effectiveness of its STEM education programs and activities; and

(D) with respect to subparagraph (A), describe the role of each agency in supporting programs and activities designed to achieve the objectives; and

(3) establish, periodically update, and maintain an inventory of federally sponsored STEM education programs and activities, including documentation of assessments of the effectiveness of such programs and activities and rates of participation by underrepresented minorities in such programs and activities.

(c) RESPONSIBILITIES OF OSTP.—The Director of the Office of Science and Technology Policy shall encourage and monitor the efforts of the participating agencies to ensure that the strategic plan under subsection (b)(2) is developed and executed effectively and that the objectives of the strategic plan are met.

(d) REPORT.—The Director of the Office of Science and Technology Policy shall transmit a report annually to Congress at the time of the President's budget request describing the plan required under subsection (b)(2). The annual report shall include—

(1) a description of the STEM education programs and activities for the previous and current fiscal years, and the proposed programs and activities under the President's budget request, of each participating Federal agency;

(2) the levels of funding for each participating Federal agency for the programs and activities described under paragraph (1) for the previous fiscal year and under the President's budget request;

(3) except for the initial annual report, a description of the progress made in carrying out the implementation plan, including a description of the outcome of any program assessments completed in the previous year, and any changes made to that plan since the previous annual report; and

(4) a description of how the participating Federal agencies will disseminate information about federally supported resources for STEM education practitioners, including teacher professional development programs, to States and to STEM education practitioners, including to teachers and administrators in schools that meet the criteria described in subsection (c)(1)(A) and (B) of section 3175 of the Department of Energy Science Education Enhancement Act (42 U.S.C. 7381j(c)(1)(A) and (B)).

II. PURPOSE

The purpose of this bill is to establish a committee through the National Science and Technology Council (NSTC) within the Office of Science and Technology Policy (OSTP), to coordinate Federal programs and activities in support of science, technology, engineering, and mathematics (STEM) education.

III. BACKGROUND AND NEED FOR THE LEGISLATION

A consensus exists that improving STEM education across the United States is a necessary condition for preserving the Nation's capacity for innovation and discovery and for ensuring the Nation's economic strength and competitiveness. A variety of STEM education programs and activities exist for K–16 students at the federal research and development (R&D) agencies, which include: the National Science Foundation, the National Aeronautics & Space Administration, the National Oceanic & Atmospheric Administration, the National Institute of Standards and Technology, the Environmental Protection Agency, the Department of Energy, and the National Institutes of Health.

For the most part, agencies have developed their programs independently rather than sharing "best practices" and collaborating across agencies. Each program has also developed its own methods and criteria for evaluation, making a comparison of effectiveness across the programs impossible. This is often the case even within agencies, where there appears to be little communication between different offices and directorates, each of which may manage their own STEM education programs. Finally, the agencies have at times had trouble building widespread awareness of their programs among teachers and other practitioners.

In 2006, the Department of Education, through the American Competitiveness Council (ACC), launched a year-long review of federal STEM education programs. The ACC process identified 105 federal STEM education programs, across all levels, totaling $3.12 billion in federal funding. Agencies submitted a total of 115 evaluations for those programs. Only 10 of the evaluations were determined to be scientifically rigorous and only four of them led the ACC to conclude that the educational activity evaluated had a meaningful positive impact. The ACC concluded, that, "despite decades of significant federal investment in science and math education, there is a general dearth of evidence of effective practices and activities in STEM education."

In its May 2007 report, the ACC made six key recommendations:

1. The government should maintain and update regularly an inventory of federal STEM education programs, including goals and metrics, to facilitate stronger interagency coordination;
2. Agencies and the federal government at large should foster knowledge of effective practices through improved evaluation and-or implementation of proven effective, research-based instructional materials and methods;
3. Federal agencies should improve the coordination of their K–12 STEM education programs with states and local school systems;
4. Federal agencies should adjust program designs and operations so that programs can be assessed and measurable re-

sults can be achieved, consistent with STEM education program goals;

5. Funding for federal STEM education programs designed to improve STEM education outcomes should not increase unless a plan for rigorous, independent evaluation is in place, appropriate to the types of activities funded; and

6. Agencies with STEM education programs should collaborate on implementation of ACC recommendations under the auspices of the NSTC.

In October 2007, the National Science Board (NSB) released its own report, "A National Action Plan for Addressing the Critical Needs of the U.S. Science, Technology, Engineering, and Mathematics Education System." A key recommendation of the NSB action plan was the creation of a committee on STEM Education, under NSTC, responsible for coordinating STEM education programs across federal R&D agencies and the Department of Education. Similarly, many of the witnesses at the Research and Science Education Subcommittee hearings held in the 110th Congress testified that there is a need for improved coordination among the agencies regarding their STEM education efforts in order to better communicate best practices and eliminate inefficiencies. Even though an NSTC subcommittee on education and workforce does currently exist, the ACC and NSB reviews and the Subcommittee hearings demonstrated that current efforts are far from sufficient to ensure a meaningful federal investment in STEM education.

IV. HEARING SUMMARY

The Subcommittee on Research and Science Education heard testimony in the 110th Congress relevant to the activities authorized in H.R. 1709 at hearings held on May 15, June 6, and October 10, 2007.

On Tuesday, May 15, 2007, the Honorable Brian Baird presiding, the Subcommittee on Research and Science Education held a hearing to examine K–16 STEM education programs supported by federal R&D agencies from the perspective of education practitioners. The Subcommittee explored whether such issues as the lack of coordination between the agencies, difficulties for educators in finding information about the programs, and the absence of robust program evaluations hinder the potential of the federal programs to improve STEM education. Most importantly, the hearing highlighted how the federal R&D mission agencies can best contribute to raising the level of scientific literacy of all Americans. Appearing as witnesses were (1) Ms. Linda Froschauer, President, National Science Teachers Association; (2) Mr. Michael Lach, Director of Mathematics and Science, Chicago Public Schools; (3) Dr. George D. Nelson, Director, Science, Technology, and Mathematics Education, Western Washington University; (4) Mr. Van Reiner, President, Maryland Science Center; and (5) Dr. Iris Weiss, President, Horizon Research, Inc.

On June 6, 2007, the Honorable Brian Baird presiding, the Subcommittee on Research and Science Education heard from a panel of witnesses from federal agencies who provided testimony on the STEM education activities of their respective agencies and discussed efforts to improve interagency coordination and evaluation

of programs. Witnesses for the hearing included (1) Dr. Cora Marrett, Assistant Director, Directorate for Education and Human Resources, National Science Foundation and Co-Chair, Education and Workforce Development Subcommittee, National Science and Technology Council; (2) Dr. Joyce Winterton, Assistant Administrator, Office of Education, National Aeronautics and Space Administration; (3) Mr. William Valdez, Director, Office of Workforce Development for Teachers and Scientists, Office of Science, Department of Energy; and (4) Dr. Bruce Fuchs, Director, Office of Science Education, National Institutes of Health.

On October 10, 2007, the Honorable Brian Baird presiding, the Subcommittee on Research and Science Education held a hearing to receive testimony on the National Science Board's recommendations for bringing greater coherence to the Nation's STEM education system, as laid out in their report, "A National Action Plan for Addressing the Critical Needs of the U.S. Science, Technology, Engineering, and Mathematics Education System." Witnesses for the hearing included: (1) Dr. Steven Beering, Chairman, National Science Board; (2) Ms. Judy A. Jeffrey, Director, Iowa Department of Education and Representing the Council of Chief State School Officers; (3) Dr. Francis (Skip) Fennell, President, National Council of Teachers of Mathematics and Professor of Education at McDaniel College; (4) Ms. Chrisanne Gayl, Director of Federal Programs, National School Boards Association; (5) Dr. Robert Semper, Executive Associate Director, The Exploratorium and Representing the Association of Science-Technology Centers; and (6) Ms. Susan L. Traiman, Director, Education and Workforce Policy Business Roundtable.

V. COMMITTEE ACTIONS

As summarized in Section IV of this report, the Subcommittee on Research and Science Education heard testimony relevant to H.R. 1709 on May 15, June 6 and October 10, 2007.

On March 25, 2009, Representative Bart Gordon of Tennessee, Chairman of the Committee on Science and Technology, for himself and Representatives Hall, Lipinski, and Ehlers introduced H.R. 1709, the STEM Education Coordination Act of 2009, a bill to establish a committee under the National Science and Technology Council with the responsibility to coordinate science, technology, engineering, and mathematics education activities and programs of all Federal agencies, and for other purposes.

The Subcommittee on Research and Science Education met to consider H.R. 1709 on Tuesday, March 31, 2009 and considered the following amendments to the bill:

1. Ms. Fudge offered an amendment to direct the committee established under H.R. 1709 to develop a strategy to identify geographic areas in the United States that have the lowest STEM performance and increase interest and achievement in such areas. The amendment was withdrawn.

Mr. Lipinski moved that the Subcommittee favorably report the bill, H.R. 1709, to the full Committee. The motion was agreed to by a voice vote.

The full Committee on Science and Technology met to consider H.R. 1709 on Wednesday, April 29, 2009 and considered the following amendments to the bill:

1. Ms. Johnson of Texas offered an amendment to specify that the committee established under H.R. 1709 create common metrics to assess progress toward achieving the objectives in the strategic plan; to add a responsibility to the Director of OSTP to encourage and monitor the agency efforts to ensure the strategic plan is executed effectively; and to require that the annual report to Congress include a description of the outcome of any program assessments completed in the previous year. The amendment was agreed to by voice vote.

2. Ms. Edwards offered an amendment to require that the inventory of federally sponsored STEM programs and activities, established and maintained by the committee, include documentation of the rates of participation by under-represented minorities. The amendment was agreed to by voice vote.

3. Ms. Fudge offered an amendment to require, that in the annual report to Congress, included will be a description of how the agencies will disseminate information about resources available to teachers, including to teachers and administrators in high-need schools (as defined in the COMPETES Act). The amendment was agreed to by voice vote.

Mr. Gordon moved that the Committee favorably report the bill, H.R. 1709, as amended, to the House with the recommendation that the bill, as amended do pass. The motion was agreed to by a voice vote.

VI. SUMMARY OF MAJOR PROVISIONS OF THE BILL

H.R. 1709 requires the Office of Science and Technology Policy (OSTP), through the National Science and Technology Council (NSTC), to establish a committee to coordinate federal programs and activities in support of STEM education. In addition, the bill requires this committee to develop a STEM education strategic plan to inform program and budget planning for agencies and to establish and maintain an inventory of federally sponsored STEM education activities, including documentation on program assessments and participation by minorities. Finally, H.R. 1709 requires the Director of OSTP to submit an annual report to Congress including a description and level of funding of the STEM education programs and activities of each participating Federal agency for the previous and current fiscal years.

VII. SECTION-BY-SECTION ANALYSIS

Sec. 1. Short title—STEM Education Coordination Act of 2009.

Sec. 2. Definition—Provides a definition for the term "STEM."

Sec. 3. Coordination of Federal STEM education—Requires the Office of Science and Technology Policy (OSTP), through the National Science and Technology Council (NSTC), to establish a committee to coordinate Federal programs and activities in support of STEM education. Requires the NSTC committee to develop a STEM education strategic plan that would: specify and prioritize objectives; specify metrics that will be used to determine progress toward those objectives; describe how agencies will evaluate their programs; describe the role of each agency in achieving objectives; and establish and maintain an inventory of federally sponsored STEM education activities, including documentation on program assessments and rates of participation by minorities. Requires the

Director of OSTP to encourage and monitor the efforts of the NSTC committee. Finally, requires an annual report to Congress on the STEM education programs and activities of each participating federal agency, including program assessments, program funding for the previous and current fiscal years, and a description of how the agencies will disseminate information about their STEM programs to States and to practitioners.

VIII. COMMITTEE VIEWS

The Committee recognizes that an NSTC subcommittee already exists to coordinate STEM education activities across the federal government, but believes that such effort needs to be greatly strengthened and elevated in priority within OSTP and the participating agencies.

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. 1709 does not contain new budget authority, credit authority, or changes in revenues or tax expenditures. H.R. 1709 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

MAY 5, 2009.

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. 1709, the STEM Education Coordination Act of 2009.

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

Sincerely,

DOUGLAS W. ELMENDORF.

Enclosure.

H.R. 1709—STEM Education Coordination Act of 2009

H.R. 1709 would require the Office of Science and Technology Policy (OSTP) to create a new committee under the executive branch's National Science and Technology Council. The committee would coordinate federal education programs related to science, technology, engineering, and math (STEM). Agencies that have STEM programs include the National Science Foundation, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, and the Departments of Energy and Education. The new committee would be responsible for coordinating all programs and assessing their effectiveness.

Based on information from the OSTP, CBO estimates that implementing H.R. 1709 would cost about $2 million annually, subject to the availability of appropriated funds. That amount includes the costs to prepare strategic plans, coordinate activities among the affected agencies, and hire new staff for the OSTP. The bill would have no effect on direct spending or revenues.

H.R. 1709 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act and would not affect the budgets of state, local, or tribal governments.

The CBO staff contact for this estimate is Matthew Pickford. The estimate was approved by Theresa Gullo, Deputy Assistant Director for Budget Analysis.

XI. COMPLIANCE WITH PUBLIC LAW 104–4

H.R. 1709 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 goal of H.R. 1709 is to establish a committee through the National Science and Technology Council (NSTC) within the Office of Science and Technology Policy (OSTP), to coordinate Federal programs and activities in support of science, technology, engineering, and mathematics (STEM) education.

XIV. CONSTITUTIONAL AUTHORITY STATEMENT

Article I, section 8 of the Constitution of the United States grants Congress the authority to enact H.R. 1709.

XV. FEDERAL ADVISORY COMMITTEE STATEMENT

H.R. 1709 does not establish nor authorize the establishment of any advisory committee.

XVI. CONGRESSIONAL ACCOUNTABILITY ACT

The Committee finds that H.R. 1709 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. 1709 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. COMMITTEE RECOMMENDATIONS

On April 29, 2009, the Committee on Science and Technology by voice vote favorably reported the bill, H.R. 1709, as amended, to

the House with the recommendation that the bill, as amended, do pass.

XX: PROCEEDINGS OF THE MARKUP BY THE SUBCOMMITTEE ON RESEARCH AND SCIENCE EDUCATION ON H.R. 1709, THE STEM EDUCATION COORDINATION ACT OF 2009

TUESDAY, MARCH 31, 2009

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON RESEARCH AND SCIENCE EDUCATION,
COMMITTEE ON SCIENCE,
Washington, DC.

The Subcommittee met, pursuant to call, at 2:08 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Daniel Lipinski [Chair of the Subcommittee] presiding.

Chair LIPINSKI. Good afternoon. The Subcommittee will come to order. Pursuant to notice, the Subcommittee on Research and Science Education meets to consider the following measures, H.R. 1709, the *STEM Education Coordination Act of 2009,* and H.R. 1736, the *International Science and Technology Cooperation Act of 2009.*

We will now proceed with the markup. This afternoon, the Subcommittee will consider H.R. 1709, the *STEM Education Coordination Act of 2009,* and H.R. 1736, the *International Science and Technology Cooperation Act of 2009.*

The first bill we will consider, H.R. 1709, will improve the coordination of STEM education programs at the federal agencies, so that federal efforts in STEM education can be better focused and more effective. An area we explored in great detail in the last Congress was the role the Federal Government can play in improving STEM education. One conclusion that came up time and time again was that coordination and collaboration across the agencies must be improved in order to make the most of our tax dollars. H.R. 1709 establishes a mechanism to ensure that, through better planning, coordination, and evaluation, we are maximizing the impact of federally funded STEM education activities. I commend Chair Gordon and Mr. Hall for introducing this good bipartisan legislation.

I also want to thank Dr. Baird for introducing H.R. 1736, the *International Science and Technology Cooperation Act of 2009* and for all of his work over the last two years that led up to this legislation. I would also like to thank Dr. Ehlers for his support, passion and work on international science cooperation and science diplomacy. We held a hearing specifically on a draft version of this bill last week, and the feedback from a panel of diverse experts, each with many decades of experience, was very positive.

The shared conclusion was that a committee under OSTP devoted to interagency coordination of international science and technology partnerships would serve both our domestic science and technology agenda and our foreign policy goals. I believe that the new Administration gives us a tremendous opportunity and a fresh outlook for both science and foreign policy, and H.R. 1736 is right

at the intersection of those two realms. I commend Chair Baird and Dr. Ehlers for this important and timely legislation. I thank the Members for their participation this morning, and I look forward to a productive markup.

[The prepared statement of Chair Lipinski follows:]

PREPARED STATEMENT OF CHAIR DANIEL LIPINSKI

This morning the Subcommittee will consider H.R. 1709, the *STEM Education Coordination Act of 2009,* and H.R.1736, the *International Science and Technology Cooperation Act of 2009.*

I thank the Members for their participation. The first bill we will consider this morning is H.R. 1709, the *STEM Education Coordination Act of 2009.* This legislation will improve the coordination of STEM education programs at the federal agencies, so that federal efforts in STEM education can be better focused and more effective. An area we explored in great detail in the last Congress was the role the Federal Government can play in improving STEM education. One conclusion that came up time and time again, was that coordination and collaboration across the agencies must be improved in order to make the most of our tax dollars. H.R. 1709 establishes a mechanism to ensure that, through better planning, coordination, and evaluation, we are maximizing the impact of federally funded STEM education activities. I commend Chairman Gordon and Mr. Hall for introducing this good bipartisan legislation.

The second bill we will consider this morning is this morning is H.R. 1736, the *International Science and Technology Cooperation Act of 2009.* I want to thank Dr. Baird for introducing this bill and for all of his work over the last two years that led up to this legislation. I would also like to thank Dr. Ehlers for his support, passion and work on international science cooperation and science diplomacy. We held a hearing specifically on a draft version of this bill last week and the feedback from a panel of diverse experts, each with many decades of experience, was very positive. The shared conclusion was that a committee under OSTP devoted to interagency coordination of international science and technology partnerships would serve both our domestic S&T agenda and our foreign policy goals. I believe that the new Administration gives us a tremendous opportunity and a fresh outlook for both science and foreign policy, and H.R. 1736 is right at the intersection of those two realms. I commend Chairman Baird and Dr. Ehlers for this important and timely legislation, and I look forward to a productive markup.

Chair LIPINSKI. Now, I recognize Dr. Ehlers to present his opening remarks.

Mr. EHLERS. Thank you, Mr. Chair. I am pleased we have the opportunity to markup these two important pieces of legislation today in the Research and Science Education Subcommittee, and I thank you for scheduling these bills. It is good to see that we are following regular order and are giving these matters the appropriate amount of attention they deserve at all levels of the Committee process.

I will reserve a majority of my comments on each individual bill until the appropriate time but will open by simply stating that I am pleased to be an original co-sponsor of both H.R. 1709 and H.R. 1736, and I look forward to a productive discussion of both measures this afternoon.

With that, I yield back the remainder of my time.

[The prepared statement of Mr. Ehlers follows:]

PREPARED STATEMENT OF REPRESENTATIVE VERNON J. EHLERS

Mr. Chairman, I am pleased that we have the opportunity to markup these two important pieces of legislation today in the Research and Science Education Subcommittee, and I thank you for scheduling it this afternoon. It is good to see that we are following regular order and are giving these matters the appropriate amount of attention they deserve at all levels of the Committee process.

I will reserve a majority of my comments on each individual bill until the appropriate time, but will open by simply stating that I am pleased to be an original co-

sponsor of both H.R. 1709 and H.R. 1736 and look forward to a productive discussion of both measures.

I yield back the remainder of my time.

H.R. 1709

Chair LIPINSKI. Thank you, Dr. Ehlers. Members may now place statements in the record at this point.

[The prepared statement of Mr. Carnahan follows:]

PREPARED STATEMENT OF REPRESENTATIVE RUSS CARNAHAN

Mr. Chairman, thank you for hosting today's markup of H.R. 1709, the *STEM Education Coordination Act of 2009,* and H.R. 1736, the *International Science and Technology Cooperation Act of 2009.*

As a Member of both the Subcommittee on Research and Science Education and the House Committee on Foreign Affairs, I am extremely interested in the coordination of international science and technology diplomacy. The United States has a central role in science diplomacy, building more positive relationships with other countries through science. We also understand that the U.S. can better affect national security and economic interests by helping to build and partner with technological capacity in other countries.

Today, I offer an amendment to H.R. 1736 which will add a requirement that the committee to coordinate international science and technology be co-chaired by senior level officials from the Office of Science and Technology Policy and the Department of State. Also, my amendment would add language to H.R. 1736 that would require the committee to address broad issues that influence the ability of the U.S. scientists and engineers to collaborate with foreign counterparts, including barriers to collaboration and access to scientific information.

I urge my colleagues to support this amendment to H.R. 1736 and I would like to thank the Chairman for the ability to offer the amendment.

Chair LIPINSKI. We will now consider H.R. 1709, the *STEM Education Coordination Act of 2009.* Mr. Gordon is unable to be here right now, although I know he wanted to be, so I am going to take a moment to describe the bill.

The Science and Technology Committee, and this subcommittee in particular, is devoted to improving STEM education so that more students will be interested in and prepared to enter careers in the STEM fields. This bill draws on recommendations from the 2007 National Science Board Report, *"A National Action Plan for Addressing the Critical Needs of the U.S. Science, Technology, Engineering and Mathematics Education System."*

Multiple hearings were held in this subcommittee in the last Congress to explore the STEM education activities being funded at federal agencies. The Subcommittee held a hearing with local STEM educators to learn their perspectives on federally funded programs. In a later hearing, the Subcommittee heard from agency representatives about the work they are doing to improve their STEM education programs and activities. The Subcommittee also held a hearing to examine the findings of the *National Science Board Report.*

The bill we are considering today is the product of the National Science Board's recommendations and those three hearings. H.R. 1709, the *STEM Education Coordination Act of 2009,* will establish a committee on STEM Education under the National Science and Technology Council. This committee would be charged with coordinating the STEM education programs and activities being funded through the federal R&D mission agencies.

The agencies are each investing in STEM education and doing some great work, but due to a lack of coordination, they have had trouble evaluating the programs and building awareness of their

successes among teachers. Oftentimes, the agencies are even unaware of the useful work being done at other agencies.

Specifically, H.R. 1709 would charge the committee with developing a STEM education strategic plan to specify and prioritize annual and long-term objectives. The strategic plan will also include metrics that will be used to assess progress and descriptions of the programs and activities conducted by each agency in support of the overall objective.

In addition, the committee is charged with establishing and maintaining a comprehensive inventory of federally sponsored STEM education activities. This inventory will include assessments of the various programs. And finally, the bill would require an annual report to Congress, including a description and funding level of STEM education programs and activities at each of the participating federal agencies for both the previous and the current fiscal years.

The issue of STEM education is one that is critically important to the future of our country. As someone who has a background as an engineer, I certainly know that to be the case, and this bill does a very good job in making sure that we are doing all we can to get the most out of our STEM education activities at the federal level.

I want to thank Chair Gordon for introducing this good bipartisan bill, and I would also like to thank Ranking Member Hall and Dr. Ehlers who have joined me in co-sponsoring this bill.

H.R. 1709 is an important piece of legislation that will bring about greatly needed interagency coordination of STEM activities funded across the Federal Government, and I urge my colleagues to support it.

[The prepared statement of Chair Lipinski follows:]

PREPARED STATEMENT OF CHAIR DANIEL LIPINSKI

The Science and Technology Committee—and this subcommittee in particular—is devoted to improving STEM education so that more students will be interested in, and prepared to enter careers in STEM field.

This bill draws on recommendations from a 2007 National Science Board report, *"A National Action Plan for Addressing the Critical Needs of the U.S. Science, Technology, Engineering, and Mathematics Education System."*

Multiple hearings were held before this subcommittee in the last Congress to explore the STEM education activities being funded at federal agencies.

The Subcommittee held a hearing with local STEM educators to learn their perspectives on federally funded programs.

In a later hearing, the Subcommittee heard from agency representatives about the work they are doing to improve their STEM education programs and activities. The Subcommittee also held a hearing to examine the findings of the National Science Board report. The bill we are considering today is the product of the National Science Board's recommendations and those three hearings.

H.R. 1709, the *STEM Education Coordination Act of 2009,* would establish a committee on STEM education under the National Science and Technology Council.

This committee would be charged with coordinating the STEM education programs and activities being funded through the Federal R&D mission agencies. The agencies are each investing in STEM education and doing some great work, but due to a lack of coordination, they have had trouble evaluating their programs and building awareness of their successes among teachers. Often times, the agencies are even unaware of the useful work being done at other agencies.

Specifically, H.R. 1709 would charge the committee with developing a STEM education strategic plan to specify and prioritize annual and long-term objectives.

The strategic plan will also include metrics that will be used to assess progress and descriptions of the programs and activities conducted by each agency in support of the overall objectives.

In addition, the committee is charged with establishing and maintaining a comprehensive inventory of federally sponsored STEM education activities. This inventory will include assessments of the various programs. Finally, the bill would require an annual report to Congress including a description and funding level of the STEM Education programs and activities at each of the participating federal agencies for both the previous and current fiscal years.

I want to thank Chairman Gordon for introducing this good bipartisan legislation. I would also like to thank Ranking Member Hall and Dr. Ehlers who have joined me in co-sponsoring the bill. H.R. 1709 is an important piece of legislation that will bring about greatly needed interagency coordination of STEM activities funded across the Federal Government, and I urge my colleagues to support it.

Chair LIPINSKI. I now recognize Dr. Ehlers to present any remarks on the bill.

Mr. EHLERS. Thank you, Mr. Chair. I join you in expressing joy that this bill is coming up at this time. The federal STEM Education Coordination bill before us today is the result of several hearings and two reports, both in the space of a couple years, one from the National Science Board and one from the Academic Competitiveness Council. As the Academic Competitiveness Council report revealed, there are many federal STEM education efforts, but overall our federal STEM programs suffer from a lack of both evaluation and coordination. Improving this coordination is challenging, but I believe we are taking appropriate steps to do that today, at least with regard to coordination among the federal agencies.

We are taking the recommendation of the National Science Board and creating a committee on STEM Education within the National Science and Technology Council. While there is currently an Education and Workforce Subcommittee under the Committee on Science, this issue is important enough that it warrants its own committee and a higher profile within the Office of Science and Technology Policy.

This is an issue that is near to my heart because I have taught STEM education for many years at the college and university level, and I am pleased to be an original cosponsor of H.R. 1709, along with Ranking Member Hall, Chair Gordon and you, Mr. Chair, and I look forward to advancing this bill to the Full Committee.

I yield back the remainder of my time.

[The prepared statement of Mr. Ehlers follows:]

PREPARED STATEMENT OF REPRESENTATIVE VERNON J. EHLERS

The federal STEM education coordination bill before us today is the result of several hearings and two reports, one from the National Science Board (NSB) and one from the Academic Competitive Council. As the Academic Competitive Council report revealed, there are many federal STEM education efforts, but overall our federal STEM programs suffer from a lack of both evaluation and coordination. Improving this coordination is challenging, but I believe we are taking appropriate steps to do that today, at least with regard to coordination among the federal agencies.

We are taking the recommendation of the National Science Board and creating a committee on STEM Education within the National Science and Technology Council (NSTC). While there is currently an Education and Workforce Subcommittee under the Committee on Science, this issue is important enough that it warrants its own committee and a higher profile within the Office of Science and Technology Policy.

This is an issue that is near to my heart and that I have been working on for many years. I am pleased to be an original co-sponsor of H.R. 1709 along with Ranking Member Hall, Chairman Gordon and you, and look forward to advancing this bill to the Full Committee.

I yield back the remainder of my time.

Chair LIPINSKI. Thank you, Dr. Ehlers. We are now expecting votes at any minute on the Floor. We will move forward here and hopefully we will get through as much as we can before we are going to have to take a break.

Does anyone else wish to be recognized on this bill? 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 on the roster. Without objection, so ordered.

First amendment on the roster is an amendment offered by the gentlelady from Ohio, Ms. Fudge. Are you ready to proceed with your amendment?

Ms. FUDGE. Yes, Mr. Chair.

Chair LIPINSKI. The Clerk will report the amendment.

The CLERK. Amendment to H.R. 1709, amendment number 009, offered by Ms. Fudge of Ohio.

Chair LIPINSKI. I ask unanimous consent to dispense with the reading. Without objection, so ordered. I recognize the gentlelady for five minutes to explain the amendment.

Ms. FUDGE. Thank you, Mr. Chair. Mr. Chair, I have an amendment to the *STEM Coordination Act of 2009*. My amendment will direct the proposed committee under the National Science and Technology Council to develop a strategy to identify geographic areas in the United States that have the lowest STEM performance and increase interest and achievement in such areas.

The demand for a STEM literate workforce will only increase in the future. The Bureau of Labor Statistics estimates that science and technology jobs will increase by 26 percent compared to 15 percent for all other occupations from 2002 to 2012. Additionally, computer science and mathematics are projected to increase by 39 percent. In 2007, according to the U.S. Department of Labor, the State of Ohio has lost over 200,000 non-farm jobs since December of 2000. This represents a 3.7 percent lost, and it is the worst seven-year period of job losses since the state started keeping records in 1939.

Ten of Ohio's metropolitan areas including my district suffered plunging job losses in manufacturing that are more severe than for the State of Ohio. In an increasingly competitive global job market, it is imperative that every child in our country has the opportunity and resources necessary to succeed in STEM fields. Every child deserves the opportunity to excel in science, technology, engineering and math, and the purpose of my amendment is to achieve that goal.

Working together I believe we can raise standards, prepare strong educators, and motivate more students to pursue STEM careers and make certain STEM education is a top priority for our country in all of its unique regions. I understand there are some concerns about the specific wording of this amendment, and I would like to work with the Chair and the Ranking Member to refine the language so it can be included in the bill. So at this time, I would like to withdraw this amendment, Mr. Chair.

Chair LIPINSKI. Thank you, Ms. Fudge, and certainly I would be happy to continue to work with you. It is an important issue, and at this time I am going to recognize Dr. Ehlers.

Mr. EHLERS. Thank you, Mr. Chair. It is certainly an issue that should be addressed, and I think we can address it at the appropriate time. But I appreciate the gentlewoman's willingness to withdraw it at this point as we continue to work on it.

Chair LIPINSKI. If there is no objection, the amendment will be withdrawn. Without objection, so ordered.

Are there any other amendments to this bill? If no, then the vote is on the bill, H.R. 1709. All in favor will say aye, all opposed will say no. In the opinion of the Chair, the ayes have it.

I recognize myself to offer a motion. I move that the Subcommittee favorably report H.R. 1709 to the Full Committee. Furthermore, I move that the staff be instructed to prepare the Subcommittee report and make necessary technical and conforming changes to the bill in accordance with the recommendations of the Subcommittee.

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 is laid upon the table. Members will have two subsequent calendar days in which to submit supplemental, Minority, or additional views on the measure.

I want to thank Members for their attendance and very quick work that we made of these bills. Dr. Ehlers, you are recognized.

Mr. EHLERS. Just one quick comment. After this performance, I think you are ready for NASCAR.

Chair LIPINSKI. Thank you very much. I am all set. I want to thank everybody, and we have plenty of time to get down to vote. This concludes our Subcommittee markup.

[Whereupon, at 2:34 p.m., the Subcommittee was adjourned.]

Appendix:

H.R. 1709, Section-by-Section Analysis, Amendment Roster

I

111TH CONGRESS
1ST SESSION

H. R. 1709

To establish a committee under the National Science and Technology Council with the responsibility to coordinate science, technology, engineering, and mathematics education activities and programs of all Federal agencies, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 25, 2009

Mr. GORDON of Tennessee (for himself, Mr. HALL of Texas, Mr. LIPINSKI, and Mr. EHLERS) introduced the following bill; which was referred to the Committee on Science and Technology, and in addition to the Committee on Education and Labor, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To establish a committee under the National Science and Technology Council with the responsibility to coordinate science, technology, engineering, and mathematics education activities and programs of all Federal agencies, 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 "STEM Education Coordination Act of 2009".

SEC. 2. DEFINITION.

In this Act, the term "STEM" means science, technology, engineering, and mathematics.

SEC. 3. COORDINATION OF FEDERAL STEM EDUCATION.

(a) ESTABLISHMENT.—The Director of the Office of Science and Technology Policy shall establish a committee under the National Science and Technology Council with the responsibility to coordinate Federal programs and activities in support of STEM education, including at the National Science Foundation, the Department of Energy, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the Department of Education, and all other Federal agencies that have programs and activities in support of STEM education.

(b) RESPONSIBILITIES.—The committee established under subsection (a) shall—

(1) coordinate the STEM education activities and programs of the Federal agencies;

(2) develop, implement through the participating agencies, and update once every 5 years a 5-year STEM education strategic plan, which shall—

(A) specify and prioritize annual and long-term objectives;

(B) specify the metrics which will be used to assess progress toward achieving the objectives;

(C) describe the approaches that will be taken by each participating agency to assess the effectiveness of its STEM education programs and activities; and

(D) with respect to subparagraph (A), describe the role of each agency in supporting programs and activities designed to achieve the objectives; and

(3) establish, periodically update, and maintain an inventory of federally sponsored STEM education programs and activities, including documentation of assessments of the effectiveness of such programs and activities.

(c) REPORT.—The Director of the Office of Science and Technology Policy shall transmit a report annually to Congress at the time of the President's budget request describing the plan required under subsection (b)(2). The annual report shall include—

(1) a description of the STEM education programs and activities for the previous and current fiscal years, and the proposed programs and activities

1 under the President's budget request, of each par-
2 ticipating Federal agency;
3 (2) the levels of funding for each participating
4 Federal agency for the programs and activities de-
5 scribed under paragraph (1) for the previous fiscal
6 year and under the President's budget request; and
7 (3) except for the initial annual report, a de-
8 scription of the progress made in carrying out the
9 implementation plan and any changes made to that
10 plan since the previous annual report.

○

SECTION-BY-SECTION ANALYSIS OF
H.R. 1709, STEM EDUCATION COORDINATION ACT OF 2009

Sec. 1. Short title

STEM Education Coordination Act of 2009.

Sec. 2. Definition

Provides a definition for the term 'STEM.'

Sec. 3. Coordination of Federal STEM Education

Requires the Office of Science and Technology Policy (OSTP), through the National Science and Technology Council (NSTC), to establish a committee to coordinate federal programs and activities in support of STEM education. In addition, requires this committee to develop a STEM education strategic plan to inform program and budget planning for agencies and to establish and maintain an inventory of federally sponsored STEM education activities, including documentation on program assessments. Finally, requires the Director of OSTP to submit an annual report to Congress, including a description and level of funding of the STEM education programs and activities of each participating federal agency for the previous and current fiscal years.

COMMITTEE ON SCIENCE AND TECHNOLOGY
RESEARCH AND SCIENCE EDUCATION
SUBCOMMITTEE MARKUP
MARCH 31, 2009

AMENDMENT ROSTER

H.R. 1709, the STEM Education Coordination Act of 2009

No.	Sponsor	Description	Results
1	Ms. Fudge	Amends section 3 to add "identify geographic areas in the United States that have the lowest STEM performance and develop a strategy to increase interest and performance in STEM degrees for both secondary school and post-secondary school students in such areas" to the list of responsibilities to be carried out by the committee.	Withdrawn

AMENDMENT TO H.R. 1709

OFFERED BY MS. FUDGE OF OHIO

Page 3, line 7, strike "and" after the semicolon.

Page 3, after line 7, insert the following (and redesignate subsequent provisions accordingly):

1 (D) identify geographic areas in the United
2 States that have the lowest STEM performance
3 and develop a strategy to increase interest and
4 performance in STEM degrees for both sec-
5 ondary school and post-secondary school stu-
6 dents in such areas;

XXI: PROCEEDINGS OF THE FULL COMMITTEE MARKUP ON H.R. 1709, THE STEM EDUCATION COOPERATION ACT OF 2009

WEDNESDAY, APRIL 29, 2009

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC.

The Committee met, pursuant to call, at 10:03 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Bart Gordon [Chair of the Committee] presiding.

Chair GORDON. Good morning, everyone. The Committee will come to order pursuant to notice. The Committee on Science and Technology meets to consider the following measures: H.R. 2020, the *Networking and Information Technology Research and Development Act of 2009,* H.R. 1736, the *International Science and Technology Cooperation Act of 2009,* and H.R. 1709, the *STEM Education Coordination Act of 2009.*

I would like to thank Chair Lipinski and Ranking Member Ehlers and other Members of the Research and Science Education Subcommittee for their work to improve these bills at the Subcommittee level, and I think we should also in abstentia thank Jim Wilson. I hope that you will pass it onto him for leaving a good legacy to us, which was certainly improved with our current staff and Members.

While the subject matter varies greatly, there is a common theme in all three of the bills before us today. They all strengthen an interagency coordination process to achieve the set of goals that no one agency can achieve on its own. In fact, this theme cuts across many of the priorities of the Science and Technology Committee of this Congress, beginning with the National Nanotechnology Initiative Bill that passed the House in February, to the *National Water Research and Development Initiative Act of 2009,* that passed the House by a vote of 413 to 10 just last week.

H.R. 2020, the *Networking and Information Technology Research and Development Act of 2009,* continues to improve and update a program that was originally created by the Committee in the *High Performance Competing Act of 1991.* The NITRD Program, as it is known, involves a collaboration of more than a dozen federal research and development agencies for current total federal investment of approximately $3.5 billion. This may sound like a lot, but the European Union is investing $7 billion over the next five years in cyber physical systems alone. To ensure that we make the most effective use of our own resources to remain a leader in these fields, it is critical that these many agencies come together to develop common goals and well-defined strategies for networking and information technology R&D.

H.R. 2020 strengthens the interagency strategic planning process, formally authorizes the National Coordination Office that oversees and enforces this process, and requires that a wide range of

industry and academic stakeholders have input into the process. Given how rapidly this field evolves, a regular and comprehensive look at the NITRD Program by Congress is timely.

And I want to thank Mr. Hall for introducing this important piece of legislation with me, and I urge my colleagues to support it.

H.R. 1736, the *International Science and Technology Cooperation Act of 2009,* would create a committee under the National Science and Technology Council to coordinate international S&T activities at our federal agencies by bringing together the Department of State and the R&D activities to focus on the international component of national R&D priorities. A similar committee in the 1990s launched some important initiatives, most notably in the area of infectious diseases.

It is critical that we don't miss opportunities to leverage our resources against those of other nations to tackle today's greatest global challenges, including energy and water, and to strengthen the contribution of U.S. science and technology to our national security. There is no existing entity whose primary purpose is to look across the Federal Government for such opportunities, and I commend Dr. Baird and Dr. Ehlers for introducing this legislation, and I urge my colleagues to support it.

H.R. 1709, the *STEM Education Coordination Act of 2009,* would strengthen and elevate an existing committee under NSTC to coordinate STEM education activities across the Federal Government. When half the world's workers earn less than $2 a day, we cannot compete on numbers. To stay competitive we must keep feeding the marketplace with new ideas that lead to new U.S. companies and new highly-paying jobs. The foundation for this innovative economy is the 21st century skilled workforce.

The Federal Government can play an important role in STEM education at all levels because of the richness of S&T resources at our science agencies. It may not surprise you to learn that our science agencies have little idea what other science agencies are funding in terms of STEM education and often don't even communicate between offices within a single agency. This is not an acceptable situation. Mr. Hall has joined me in introducing this bill because we agree that agencies need to be sharing best practices with each other, evaluating their programs for effectiveness and generally making more efficient and effective use of taxpayers' dollars.

And I want to thank Mr. Hall and the Chair and Ranking Member of the Research and Science Education Subcommittee for introducing this bill with me, and I urge my colleagues to support it.

These are three good bipartisan bills that strengthen interagency coordination and as President Obama has said in his inaugural, make our government smarter. I thank my colleagues and staff for their hard work on these bills, and I look forward to improving them even further with your amendments today.

And I now recognize Mr. Hall, who will soon be recognizing his 49th what, birthday, several times over.

Mr. HALL. My 39th.

Chair GORDON. Thirty-ninth. Thirty-ninth.

Mr. HALL. Thirty-ninth reunion of my 39th birthday.

Chair GORDON. And I now recognize the spry Mr. Hall for his——

[The prepared statement of Chair Gordon follows:]

PREPARED STATEMENT OF CHAIR BART GORDON

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

- H.R. 2020, the *Networking and Information Technology Research and Development Act of 2009;*
- H.R. 1736, the *International Science and Technology Cooperation Act of 2009;* and,
- H.R. 1709, the *STEM Education Coordination Act of 2009.*

As I mentioned, the Committee will consider three good bills today.

I would like to thank Chairman Lipinski and Ranking Member Ehlers and other Members of the Research and Science Education Subcommittee for their work to improve these bills at the Subcommittee level.

While the subject matter varies greatly, there is a common theme in all three of the bills before us today. They all strengthen an interagency coordination process to achieve a set of goals that no one agency can achieve on its own.

In fact, this theme cuts across many of the priorities of the Science and Technology Committee this Congress, beginning with the National Nanotechnology Initiative bill that passed the House in February, to the *National Water Research and Development Initiative Act of 2009* that passed the House by a vote of 413 to 10 just last week.

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It is critical that we don't miss opportunities to leverage our resources against those of other nations to tackle today's greatest global challenges, including energy and water, and to strengthen the contribution of U.S. science and technology to our national security.

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The Federal Government can play an important role in STEM education at all levels because of the richness of the S&T resources at our science agencies. It may not surprise you to learn that our science agencies have little idea what other science agencies are funding in terms of STEM education and often don't even communicate between offices within a single agency.

This is not an acceptable situation.

Mr. Hall joined me in introducing this bill because we agree that agencies need to be sharing best practices with each other, evaluating their programs for effectiveness, and generally making more efficient and effective use of taxpayers' dollars. I thank Mr. Hall, and the Chair and Ranking Member of the Research and Science Education Subcommittee for introducing this bill with me and I urge my colleagues to support it.

These are three good bipartisan bills that strengthen interagency coordination to, as President Obama said in his inaugural, make our government "smarter." I thank my colleagues and staff for their hard work on these bills and I look forward to improving them even further with your amendments today.

I now recognize Mr. Hall to present his opening remarks.

Mr. HALL. Good morning, Mr. Chair, and I thank you for several reasons. I don't know why I have to thank you because it is your duty to schedule this markup, but I still thank you for doing it, and whoever wrote this for me thanks you, and that means that all of us on this side thank you. So—and you thank me, and we are all thanked today.

It would appear that we are doing a great deal of coordinating, and that is true. In addition to authorizing the Networking and Information Technology Research and Development, the NITRD Program, we are also marking up legislation to improve STEM education coordination among the federal agencies and a bill to coordinate science and technology initiatives that can help foster international cooperation.

All of these bills do exactly what this committee should be doing; ensuring that our government is effectively and efficiently using federal science and technology dollars to guarantee we stay on top of cutting-edge research, both domestically and internationally, while continuing to develop the best and brightest STEM workforce for our future.

I am pleased to join you as an original co-sponsor of H.R. 2020 and the *Federal STEM Education Coordination Act,* 2020 and 1709. I also want to thank you for maintaining regular order with both H.R. 1709 and H.R. 1736 and giving everyone the opportunity to work on these at Subcommittee level first. That is the way you work things out.

When it comes to STEM education in particular, I think we are all better served to have Dr. Ehlers involved in the beginning as he brings so much to the table along this line.

I know that all—both of our staffs have worked diligently to get these bills to where we are today, and I look forward to a discussion and proposed amendments, and I thank you.

I yield back.

[The prepared statement of Mr. Hall follows:]

PREPARED STATEMENT OF REPRESENTATIVE RALPH M. HALL

Good morning, Mr. Chairman. I want to thank you for scheduling this markup and for the bipartisan spirit in which the bills before us today have been handled. It would appear that we are doing a great deal of coordinating today. In addition to authorizing the Networking and Information Technology Research and Development (NITRD) program, we are also marking-up legislation to improve STEM edu-

cation coordination among the federal agencies and a bill to help coordinate science and technology initiatives that can help foster international cooperation.

All of these bills do exactly what this committee should be doing, ensuring that our government is effectively and efficiently using federal science and technology dollars to guarantee we stay on top of cutting edge research both domestically and internationally, while continuing to develop the best and brightest STEM workforce for our future.

I am pleased to join you as an original co-sponsor of H.R. 2020, the *NITRD Authorization Act,* and H.R. 1709, the *Federal STEM Education Coordination Act.* I want to also thank you for maintaining regular order with both H.R. 1709 and H.R. 1736 and giving everyone the opportunity to work on these at the Subcommittee level first. When it comes to STEM education, in particular, I think we are all better served to have Dr. Ehlers involved from the beginning, as he brings so much to the table.

I know both of our staffs have worked diligently to get these bills to where we are today, and I look forward to a discussion of proposed amendments.

Chair GORDON. Thank you, Mr. Hall.

[The prepared statement of Mr. Mitchell follows:]

PREPARED STATEMENT OF REPRESENTATIVE HARRY E. MITCHELL

Thank you, Mr. Chairman.

Today we will mark up the *Networking and Information Technology Research and Development Act,* H.R. 2020, the *International Science and Technology Cooperation Act,* H.R. 1736, and the *STEM Education Coordination Act,* H.R. 1709.

Last Congress, we took a critical step in encouraging students and teachers to focus on STEM education in the *America COMPETES Act,* which is now law. Ensuring that our students receive a top level STEM education is vital to grow our economy and remain competitive in the global economy.

However, I have heard from STEM teachers in Arizona that they are struggling to identify federal resources to help them develop effective STEM lesson plans.

H.R. 1709 would help STEM teachers in Arizona and nationwide by establishing a committee to coordinate federal programs and activities in support of STEM education through the Office of Science and Technology and Policy (OSTP).

I encourage my colleagues to support this important legislation.

I yield back.

Chair GORDON.We will now consider H.R. 1709, the *STEM Education Coordination Act of 2009,* and I recognize myself to describe the bill.

Science, technology, engineering, and math, STEM education, is one of the most critical issues facing our nation today. Difficult economic times serve to remind us of the importance of education because we simply cannot compete in an increasingly-global economy without a highly-skilled, 21st century workforce. Real improvements in STEM education requires commitment by the local, State, and federal level. States, local school districts, and teachers all over the Nation are working in the trenches every day to improve the quality of STEM education for our students.

And while our federal agencies all have worthwhile programs in place to share knowledge and passion for STEM with students, there is little communication or collaboration among the agencies with regard to their STEM education work. And it has become increasingly clear that rather than reinventing the wheel, agency by agency, there is a desperate need for a forum in which they can come together to discuss findings on the most effective research-based education programming, share tools for improved dissemination, create common metrics for evaluation, and avoid providing duplicate programs. The bill we are talking about today, H.R. 1709, the *STEM Education Coordination Act of 2009,* does just that.

H.R. 1709 would establish a committee on STEM education under the National Science and Technology Council, charged with coordinating the STEM education programs and activities being funded through the federal mission agencies.

Specifically, H.R. 1709 would charge the committee with developing a STEM education strategic plan to specify and prioritize annual and long-term objectives and to develop common metrics to be used to assess progress of the programs and activities included by each agency.

The bill also charges the committee with establishing and maintaining a comprehensive inventory of federally-sponsored STEM education activities. This valuable database will include assessment of the various programs and activities and will help the STEM education community learn what the Federal Government has to offer.

Finally, the bill will require an annual report to Congress including a description and funding level of the STEM education programs and activities at each of the participating federal agencies for both the previous and the current fiscal years.

I would like to thank Ranking Member Hall, Dr. Lipinski, and Dr. Ehlers, who have joined me in co-sponsoring this good bipartisan bill and urge my colleagues to support it.

I now recognize Mr. Hall to present any remarks on the bill.

PREPARED STATEMENT OF CHAIR BART GORDON

Science, Technology, Engineering, and Math (STEM) Education is one of the most critical issues facing our nation today. Difficult economic times serve to remind us of the importance of education, because we simply cannot compete in the increasingly global economy without a highly skilled 21st century workforce.

Real improvement in STEM education requires commitment at the local, State, and federal level. States, local school districts, and teachers all over the Nation are working in the trenches everyday to improve the quality of STEM education for our students.

Our federal science agencies, with their valuable S&T resources, can play an important role in supporting and educating students, teachers, and the general public. Unfortunately, we are not making the most effective use of those resources.

While the agencies all have worthwhile programs in place to share knowledge and passion for STEM with students, there is little communication or collaboration among the agencies with regard to their STEM education work.

It has become increasingly clear that rather than reinventing the wheel, agency by agency, there is a desperate need for a forum in which they can come together to discuss findings on the most effective, research-based educational programming, share tools for improved dissemination, create common metrics for evaluation, and avoid providing duplicative programs.

The bill we are taking up today, H.R. 1709, the *STEM Education Coordination Act of 2009* does just that.

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This valuable database will include assessments of the various programs and activities, and will help the STEM community learn what the Federal Government has to offer.

Finally, the bill would require an annual report to Congress including a description and funding level of the STEM Education programs and activities at each of the participating federal agencies for both the previous and current fiscal years.

I would like to thank Ranking Member Hall, Dr. Lipinski, and Dr. Ehlers who have joined me in co-sponsoring this good bipartisan bill, and I urge my colleagues to support it.

I now recognize Mr. Hall to present any remarks on the bill.

Mr. HALL. Mr. Chair, thank you, and STEM education is an issue that this committee takes very seriously and will continue to do so. It is just as imperative that we be able to identify those STEM Programs in the Federal Government that are effective and could serve as models for other agencies as it is, I guess, for us to eliminate those programs that are duplicative and wasteful.

This bill goes a long way in attaining both of these goals, and I am pleased to be an original co-sponsor. Again, I would like to yield the balance of my time to the distinguished Ranking Member of the Research and Science Education Subcommittee, Dr. Ehlers.

[The prepared statement of Mr. Hall follows:]

PREPARED STATEMENT OF REPRESENTATIVE RALPH M. HALL

STEM education is an issue that this committee takes very seriously and will continue to do so. It is just as imperative that we be able to identify those STEM programs in the Federal Government that are effective and could serve as models for other agencies—as it is for us to eliminate those programs that are duplicative and wasteful. This bill goes a long way in attaining both of those goals, and I am pleased to be an original co-sponsor. Again, I would like to yield the balance of my time to the distinguished Ranking Member of the Research and Science Education Subcommittee, Dr. Ehlers.

Mr. EHLERS. I thank the gentleman for yielding, and I strongly support the *Science, Technology, Engineering, and Math Education Coordination Act of 2009.*

I have been involved in STEM education since roughly 1967, and taught for 20 years, and by choice taught courses aimed at non-scientists. My scientist colleagues thought I was crazy for being willing to do that, but they were delighted, because it meant they didn't have to do it. But I felt one of the principle things I could do is educate teachers well enough so that they could teach well in the classroom, and that is how I took this path.

One of the simplest ways to improve STEM education at this point is to keep better track of what the Federal Government is doing already to strengthen our innovation capacity through programs spread across the Federal Government, and there are many such programs. The Academic Competitiveness Council report of 2007 revealed a snapshot of STEM programs across the Federal Government, but the information it provided was only the tip of the iceberg. A sustained, comprehensive inventory of federal STEM programs remained illusive.

Later in 2007, the National Science Board recommended the creation of a standing committee of the National Science and Technology Council with the responsibility of coordination of STEM education activities across the Federal Government.

I am pleased that this recommendation will be a reality when the legislation before us today is signed into law. I believe that increased transparency will be helpful to STEM practitioners in the Federal Government and to the public. It is very important that we recognize that there is strength and diversity of STEM education programs. Each one may have a unique goal for improving STEM education.

Conversely, programs with similar goals may reach a unique population or age group. Each one can successfully contribute to the broad goal of strengthening our nation's capacity for creativity and innovation. By shedding light on the various goals, methods, and successes of federal STEM education programs we will be able to better support our economic and national security.

The ultimate aim of all this coordination is, of course, to prepare superior materials and make them available to teachers across the Nation who can, through the means provided by this, be alert and aware of what is happening in the developments of science and math teaching. And I believe this bill will go a long way towards helping with that.

With that I yield back.

[The prepared statement of Mr. Ehlers follows:]

PREPARED STATEMENT OF REPRESENTATIVE VERNON J. EHLERS

I support the *Science, Technology, Engineering and Math (STEM) Education Coordination Act of 2009*. There are many steps that need to be taken to improve STEM Education in our country, but one of the simplest ones is keeping better track of what the Federal Government is already doing to strengthen our innovation capacity through programs spread across the Federal Government.

The Academic Competitiveness Council (ACC) report of 2007 revealed a snapshot of STEM programs across the Federal Government, but the information it provided was only the tip of the iceberg. A sustained, comprehensive inventory of federal STEM programs remained elusive. Later in 2007 the National Science Board recommended the creation of a standing committee of the National Science and Technology Council with the responsibility of coordination of STEM Education activities across the Federal Government. I am pleased that this recommendation will be a reality when the legislation before us today is signed into law.

I believe that increased transparency will be helpful to STEM practitioners in the Federal Government and to the public. It is very important that we recognize that there is strength in diversity of STEM education programs; each one may have a unique goal for improving STEM education. Conversely, programs with similar goals may reach a unique population or age group. Each one can successfully contribute to the broad goal of strengthening our nation's capacity for creativity and innovation. By shedding light on the various goals, methods, and successes of federal STEM Education programs we will be able to better support our economic and national security.

Chair GORDON. Thank you, Dr. Ehlers, for your comments and more importantly your work, long work in this area.

Does anyone else wish to be recognized?

Mr. BARTLETT. Mr. Chair.

Chair GORDON. Dr. Bartlett.

Mr. BARTLETT. I am a strong supporter of this bill. This year China will graduate seven times as many engineers as we graduate and about half of our engineering graduates will be Chinese students. So this clearly, clearly is an issue of national concern.

As important as this bill is and as hard as we work on this, what we really need in our country is a cultural change. A society gets what it appreciates, and the reality is that as a society we just don't appreciate academic achievers in these areas. Bright young boys are called geeks and nerds and pretty girls won't date them, and bright girls have to play dumb to get a date. Is this dumb? This is really dumb. We need a cultural change, and let us hope that it starts here.

Thank you very much, Mr. Chair.

Mr. EHLERS. Will the gentleman yield?

Mr. BARTLETT. Yes, sir. I would be happy to yield.

Mr. EHLERS. I just want to make it clear on the record that I am a nerd, and I am proud of it. And I also married a beautiful woman.

Mr. BAIRD. Would the gentleman yield?

Mr. BARTLETT. I would be happy to.

Mr. BAIRD. I better say the same thing on behalf of my spouse as well.

Chair GORDON. Okay. With unanimous consent you are all nerds, so does anyone else wish to be recognized?

Mr. ROHRABACHER. I am a surfer, Mr. Chair.

Chair GORDON. And a near-Earth object.

I ask unanimous consent that the bill is considered as read and open to the 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 the amendment offered by the gentlelady from Texas. Are you ready to proceed with your amendment?

Ms. JOHNSON. Yes.

Chair GORDON. The Clerk will report——

Ms. JOHNSON. I have an amendment at the desk.

The CLERK. Amendment to H.R. 1709, amendment number 041, offered by Ms. Eddie Bernice Johnson of Texas.

Chair GORDON. I ask unanimous consent to dispense with the reading.

Without objection, so ordered.

I recognize the gentlelady for five minutes to explain the amendment.

Ms. JOHNSON. Thank you very much, Mr. Gordon, and our Ranking Member and fellow Members of the Committee.

My amendment to H.R. 1709 seeks to strengthen the coordinating committee that will be established within the National Science and Technology Council. As you know, this committee will be responsible for coordinating federal education programs in the area of science, technology, engineering, and math that is commonly called STEM courses. The committee also will be asked to develop a five-year strategic plan for STEM education.

My amendment indicates that common metrics will be used to assess progress in achieving the objectives of the strategic plan. And in addition, the amendment states that the Director of Office of Science and Technology Policy should encourage and monitor the efforts of participating agencies to ensure that this strategic plan is developed and executed effectively. And further, the amendment asks the Office of Science and Technology Policy to monitor the agencies to ensure that the objectives of the strategic plan are met.

In the report to Congress described in this bill my amendment also states that descriptions of progress shall include a description of the outcome of any program assessments completed in the previous year. It is clear that the Office of Science and Technology Policy will take a greater role in coordinating our federal STEM education programs.

And while I support this goal, I also believe that it is critical, of critical importance to measure the success of every dollar that we spend on STEM education. We must see quantifiable results. The

accountability must exist for every single program, and Members of this committee must answer to our constituents to ensure that federal investments are making a difference.

It is my hope that the Office of Science and Technology Policy takes on this coordinating role that will also encourage agencies to do regular performance assessments of all programs that we support. It is the responsibility of this committee to ensure these programs are succeeding. For only when we measure for failure or success can we make informed judgments the programs for which we advocate.

Thank you for considering this amendment, and I urge the support of it.

I yield back.

[The prepared statement of Ms. Johnson follows:]

PREPARED STATEMENT OF REPRESENTATIVE EDDIE BERNICE JOHNSON

Good morning, Chairman Gordon, Ranking Member Hall, and fellow Members.

My amendment to H.R. 1709 seeks to strengthen the coordinating committee that will be established within the National Science and Technology Council.

As you know, this committee will be responsible for coordinating federal education programs in the areas of science, technology, engineering, and math—also called STEM.

The committee will also be asked to develop a five-year strategic plan on STEM education.

My amendment indicates that common metrics will be used to assess progress in achieving the objectives of the strategic plan.

In addition, the amendment states that the Director of the Office of Science and Technology Policy shall encourage and monitor the efforts of participating agencies to ensure that this strategic plan is developed and executed effectively.

Furthermore, the amendment tasks OSTP to monitor the agencies to ensure that the objectives of the strategic plan are met.

In the report to Congress described in the bill, my amendment also states that descriptions of progress shall include a description of the outcome of any program assessments completed in the previous year.

Mr. Chairman, it is clear that OSTP will take on a greater role in coordinating our federal STEM education programs.

While I support this goal, I also believe that it is of critical importance to measure the success of every dollar that we spend on STEM education.

We must see quantifiable results. The accountability must exist for every single program.

Members of this committee must answer to our constituents to ensure that federal investments are making a difference.

It is my hope that as OSTP takes on this coordinating role that it will also encourage the agencies do regular performance assessments of all the programs that we support.

It is the responsibility of this committee to ensure these programs are succeeding.

For only when we measure for failure or success can we make informed judgments of the programs for which we advocate.

Thank you for considering this amendment. I urge its support and yield back my time.

Chair GORDON. Thank you, Ms. Johnson. We certainly want to get a dollar's worth, the benefit for a dollar spent, and this bill will help—your amendment will help with that.

Is there further discussion on the amendment?

If no, the vote occurs on the amendment. All in favor, say aye. Opposed, no. The ayes have it, and the amendment is agreed to.

The second amendment on the roster is an amendment offered by the gentlelady from Maryland, Ms. Edwards. Are you ready to proceed with your amendment?

Ms. EDWARDS. Yes, Mr. Chair. I have an amendment at the desk.

Chair GORDON. The Clerk will report the amendment.

The CLERK. Amendment to H.R. 1709 offered by Ms. Edwards of Maryland, amendment number 014.

Chair GORDON. I ask unanimous consent to dispense with the reading.

Without objection, so ordered.

I recognize the gentlelady for five minutes to explain her amendment.

Ms. EDWARDS. I thank the Chair for his recognition and leadership on this committee. This committee—call me a nerd because this committee handles about the most exciting and timely issues that really challenge each of us to be critical and strategic thinkers, and I think it is because of your oversight and leadership that we accomplish the work before us so effectively and efficiently and in bipartisan fashion and with a little bit of humor.

Mr. Chair, almost a year ago the National Action Council for Minorities and Engineering, NACME, released a report revealing the number of minority students pursuing STEM degrees and careers has flattened out or even declined in recent years. The report noted that the percentage of Bachelor's degrees in engineering awarded to African-American students declined significantly from 1995, to 2005, from 3.3 percent down to 2.5 percent.

It also found that while three key under-represented minority groups; African-Americans, Latinos, and Native Americans, constitute some 30 percent of overall undergraduate student population in the United States, they receive only about 12 percent of the degrees awarded in engineering.

My amendment would require the committee formed by the bill to establish, update, and maintain an inventory of the participation by under-represented minorities and federally-sponsored STEM programs and activities. This amendment will ensure that this committee has solid and up-to-date information on minority participation. And once we receive the information we can better assess the role this committee needs to take to increase minority participation in these programs.

President Obama has made a significant commitment to science and technology, which includes a commitment to STEM programs and we should take all steps necessary to make sure our minority students are not left behind in the field of science, math, and technology. This, in fact, I think will be our mark on the 21st century.

And I read just this morning that according to the Nation's report card by the National Assessment of Educational Progress, compared to 2004, there was no significant change in the gap in mathematic scores between white students, age nine, and their black and Hispanic counterparts. We really to close this gap.

Again, I thank the Chair and the staff for working with me on this amendment and for your commitment to the STEM programs, and I urge my colleagues to support the amendment.

[The prepared statement of Ms. Edwards follows:]

PREPARED STATEMENT OF REPRESENTATIVE DONNA F. EDWARDS

I thank the Chairman for his recognition and his leadership on this committee. This committee handles the most exciting and timely issues that challenge each of us to be critical and strategic thinkers. Mr. Chairman, I believe it is because of your

oversight and leadership that we accomplish the work before us so effectively and efficiently and in a bipartisan fashion.

Mr. Chairman, almost a year ago, the National Action Council for Minorities in Engineering (NACME) released a report revealing the number of minority students pursuing STEM degrees and careers has flattened out or even declined in recent years. The report noted that the percentage of Bachelor's degrees in engineering awarded to African American students declined significantly from 1995 to 2005, from 3.3 percent to 2.5 percent. It also found that while three key under-represented minority (URM) groups—African Americans, Latinos, and Native Americans—constitute some 30 percent of the overall undergraduate student population in the United States, they receive only about 12 percent of the degrees awarded in engineering.

My amendment would require the committee formed by the bill to establish, update, and maintain an inventory of the participation by under-represented minorities in federally sponsored STEM programs and activities. This amendment will ensure that this committee has solid and up-to-date information on minority participation.

Once we get this information, we can better assess the role this committee needs to take to increase minority participation in these programs. President Obama has made a commitment to Science and Technology, which includes a commitment to the STEM programs. We should take all steps necessary to make sure our minority students are not left behind in the fields of science, math, and technology this will be our mark on the 21st century. I read this morning that according to the *Nation's Report Card* by the National Assessment of Educational Progress, compared to 2004, there was no significant change in the gap in mathematic scores between white students age nine and their black and Hispanic counterparts. We need to close this gap.

I, again, thank the Chairman and the staff for working with me on this amendment and for his commitment to the STEM programs. I urge my colleagues to support this important amendment.

Chair GORDON. Thank you, Ms. Edwards. Clearly when we look at improving our STEM education, there is no place we can get a better bump than with minorities and women. Ms. Woolsey and Ms. Johnson have been leaders in that for some time. This committee, I mean, we can witness ourselves. As we tried to build a staff here, we have had difficulty in those areas, and so that is why, one of the reasons that we have worked to try to increase the representation within minorities and women, and again, it is good for our country, and it is the right thing to do.

Is there further discussion on the amendment?

If no, the vote occurs upon the amendment. All in favor, say aye. Opposed, no. The ayes have it. The amendment is agreed to.

The third amendment on the roster is the amendment offered by the gentlelady from Ohio, Ms. Fudge. Are you ready to proceed with your amendment?

Ms. FUDGE. Yes, Mr. Chair. I have an amendment at the desk.

Chair GORDON. The Clerk will report the amendment.

The CLERK. Amendment to H.R. 1709, amendment number 012, offered by Ms. Fudge of Ohio.

Chair GORDON. I ask unanimous consent to dispense with the reading.

Without objection, so ordered.

I recognize the gentlelady for five minutes to explain the amendment.

Ms. FUDGE. Thank you, Mr. Chair.

My amendment will direct the proposed committee under the National Science and Technology Council to describe in its annual report how we can better disseminate federally-supported STEM resources throughout the country. This will ultimately nurture teach-

er talent, increase professionalism, and provide teachers with the new ideas to increase STEM participation.

The demand for a STEM-literate workforce will only increase in the future. The Bureau of Labor Statistics estimates that science and technology jobs will increase by 26 percent compared to 15 percent for all other occupations from 2002, to 2012.

Additionally, computer science and mathematics are projected to increase by 39 percent. The more support a teacher receives, the more organized, well planned, and well prepared they will be. We must increase awareness of what is available to train teachers in science, technology, engineering, and math so we can provide our nation's future with better materials and ideas that improve lesson plans.

In order to raise standards, prepare strong educators, and motivate more students to pursue STEM, it is imperative to effectively distribute the available federally-supported resources for our nation's teachers. Children who are taught by educators with proper certification and mentored by professionals are more likely to succeed and prosper in an increasingly technically-advanced society.

Mr. Chair, I do ask for support of this amendment, and I yield back.

[The prepared statement of Ms. Fudge follows:]

PREPARED STATEMENT OF REPRESENTATIVE MARCIA FUDGE

Mr. Chairman, I have an amendment to the *STEM Education Coordination Act of 2009*. My amendment will direct the proposed committee under the National Science and Technology Council to describe in its annual report how we can better disseminate federally supported STEM resources throughout the country. This will ultimately nurture teacher talent, increase professionalism, and provide teachers with new ideas to increase STEM participation.

The demand for a STEM-literate workforce will only increase in the future. The Bureau of Labor Statistics estimates that science and technology jobs will increase by 26 percent, compared to 15 percent for all occupations, from 2002 to 2012. Additionally, computer science and mathematics are projected to increase by 39 percent. The more support a teacher receives the more organized, well planned and well prepared they will be. We must increase awareness of what is available to train teachers in Science, Technology, Engineering, and Math so they can provide our nation's future with better materials and ideas that improve lesson plans.

In order to raise standards, prepare strong educators, and motivate more students to pursue STEM, it is imperative to effectively distribute the available federally supported resources for our nation's teachers. Children who are taught by educators with proper certification and mentored by professionals are more likely to succeed and prosper in an increasingly technologically advanced society.

Chair GORDON. Is there further discussion on the amendment?

If no, the vote occurs on the amendment. All in favor, say aye. Opposed, no. The ayes have it, and the amendment is agreed to.

Are there any other amendments?

If no, then the vote is on the bill, H.R. 1709, as amended. All those in favor, say aye. All those opposed, no. In the opinion of the Chair the ayes have it.

I now recognize myself to offer a motion.

I move that the Committee favorably report H.R. 1709 as amended to the House with the recommendation that the bill do pass. Furthermore, I move that the staff be instructed to prepare the legislative report and make necessary technical and conforming changes, and that the Chair take all the necessary steps to bring the bill before the House for consideration.

The question is on the motion to report the bill favorably. Those in favor of the motion will signify by saying, aye. The ayes have it. The bill is favorably reported.

Without objection, the motion is reconsidered. It is laid upon the table. The Members will have two subsequent calendar days in which to submit supplemental, Minority, or additional views on the measure.

And let me point out to everyone, particularly our newer Members, we won't file this bill until next week, and so if any of you would like to become co-sponsors of any of these bills, we welcome that. I think you should all go home, take credit for these. These are good bills, and once again, I hope you are not disappointed that we are not arguing and fighting, and you know, and having a big rumpus here, but that doesn't mean that these aren't good, thoughtful bills. They went to the regular order, a law that was taken care of at the Subcommittee level, and so, again, we welcome all to be co-sponsors, and I want to thank the Members for their attendance.

This concludes our markup.

[Whereupon, at 10:51 a.m., the Committee was adjourned.]

Appendix:

Amendment Roster

COMMITTEE ON SCIENCE AND TECHNOLOGY
FULL COMMITTEE MARKUP
APRIL 29, 2009

AMENDMENT ROSTER

H.R. 1709, the STEM Education Coordination Act of 2009

No.	Sponsor	Description	Results
1	Ms. Johnson	Amends Section 3 to clarify that the STEM education strategic plan must specify the "common" metrics which are to be used to assess progress toward achieving the objectives; requires the Director of the Office of Science and Technology Policy to encourage and monitor the efforts of the participating agencies to ensure that the strategic plan is developed and executed effectively and that the objectives of the strategic plan are met; and, ensures that the annual reports required in the bill will include a description of the outcome of any program assessments completed in the previous year.	Agreed to by voice vote.
2	Ms. Edwards	Amends Section 3 to require that the inventory of federally sponsored STEM education programs and activities document the rates of participation by underrepresented minorities in such programs and activities.	Agreed to by voice vote.
3	Ms. Fudge	Amends Section 3 to require the annual report to include a description of how the participating Federal agencies will disseminate information about federally supported resources for STEM education practitioners, including teacher professional development programs, to States and to STEM education practitioners, including to teachers and administrators in high-need schools.	Agreed to by voice vote.

AMENDMENT TO H.R. 1709
OFFERED BY MS. EDDIE BERNICE JOHNSON OF TEXAS

Page 3, line 1, strike "metrics" and insert "common metrics".

Page 3, after line 16, insert the following (and redesignate subsequent subsections accordingly):

1 (c) RESPONSIBILITIES OF OSTP.—The Director of
2 the Office of Science and Technology Policy shall encour-
3 age and monitor the efforts of the participating agencies
4 to ensure that the strategic plan under subsection (b)(2)
5 is developed and executed effectively and that the objec-
6 tives of the strategic plan are met.

Page 4, line 9, strike "plan" and insert "plan, including a description of the outcome of any program assessments completed in the previous year,".

AMENDMENT TO H.R. 1709

OFFERED BY MS. EDWARDS OF MARYLAND

Page 3, line 16, strike the period at the end and insert the following: "and rates of participation by underrepresented minorities in such programs and activities."

AMENDMENT TO H.R. 1709

OFFERED BY MS. FUDGE OF OHIO

Page 4, line 6, strike "and".

Page 4, line 10, strike the period and insert "; and".

Page 4, after line 10, add the following new paragraph:

1 (4) a description of how the participating Fed-
2 eral agencies will disseminate information about fed-
3 erally supported resources for STEM education
4 practitioners, including teacher professional develop-
5 ment programs, to States and to STEM education
6 practitioners, including to teachers and administra-
7 tors in schools that meet the criteria described in
8 subsection (c)(1)(A) and (B) of section 3175 of the
9 Department of Energy Science Education Enhance-
10 ment Act (42 U.S.C. 7381j(c)(1)(A) and (B)).