



# America Competes 2010: FY2012 Funding and FY2008-FY2011 Funding Summary

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## Summary

The 112<sup>th</sup> Congress will make several budget and appropriations decisions that may affect implementation of the America COMPETES Reauthorization Act of 2010 (P.L. 111-358). Signed on January 4, 2011, this new law seeks to improve U.S. competitiveness and innovation by authorizing increased federal support for, among other things, research and development (R&D) in the physical sciences and engineering, and science, technology, engineering, and mathematics (STEM) education. P.L. 111-358 reauthorized the 2007 America COMPETES Act (P.L. 110-69), which enabled similar federal activities and programs from FY2008 to FY2010.

Funding for many 2007 America COMPETES Act programs was below authorized levels—in some cases substantially—during the law’s three-year authorization period. Further, although some commentators considered the FY2011 budget deal to be positive for science (on the whole) because cuts were not deeper, funding for many of the 2010 reauthorization act programs fell short of authorized levels. If Congress continues the growth rate established for these programs in FY2011, it will take approximately 15 years to achieve the so-called “budget doubling” for research in the physical sciences and engineering that the acts’ proponents seek. This pace is considerably slower than the seven-year doubling pace set by the original America COMPETES Act.

Some analysts argue that historic underfunding of federal R&D in the physical sciences and engineering and STEM education threatens the fundamental underpinnings of the economy and therefore justifies increasing national investment in these areas even in an era of fiscal constraint. Others see the national deficit and debt as greater threats to economic growth and assert that current U.S. fiscal conditions make cuts necessary.

Key budget and appropriations questions for the 112<sup>th</sup> Congress center on whether and how to fund America COMPETES 2010 provisions—including the doubling effort—in FY2012. Other FY2012 funding questions for Congress include whether and how to respond to the STEM education program changes that the Administration seeks at the National Science Foundation, Department of Education, and Department of Energy. **Table 1** (at the end of the report) summarizes the appropriations status of the 2010 law’s FY2012 funding provisions.

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On January 4, 2011, President Barack Obama signed P.L. 111-358, the America COMPETES Reauthorization Act of 2010. The new law responds to concerns about U.S. competitiveness by, among other things, increasing funding for research and development (R&D) in the physical sciences and engineering; and by authorizing certain federal science, technology, engineering, and mathematics (STEM) education programs. The new law reauthorized selected provisions of the 2007 America COMPETES Act (P.L. 110-69).<sup>1</sup>

The purpose of this report is to provide information on the President's FY2012 budget request—and the status of FY2012 Congressional appropriations actions—for the agencies, programs, and activities authorized by America COMPETES 2010.<sup>2</sup> It also provides information on funding for the new law in FY2011 appropriations measures, and summarizes funding levels for the previous authorization period (FY2008-FY2010). For general information on the America COMPETES Reauthorization Act of 2010, see CRS Report R41819, *Reauthorization of the America COMPETES Act: Selected Policy Provisions, Funding, and Implementation Issues*, by Heather B. Gonzalez.

## The America COMPETES Reauthorization Act of 2010

Like the 2007 America COMPETES Act, America COMPETES 2010 is designed to “invest in innovation through research and development, to improve the competitiveness of the United States, and for other purposes.”<sup>3</sup> In total, America COMPETES 2010 authorizes approximately \$45.6 billion in funding between FY2010 and FY2013 for federal R&D in the physical sciences and engineering, STEM education, and other programs.

Among other things, the 2010 law increases funding authorizations for the National Science Foundation (NSF), National Institute of Standards and Technology (NIST) laboratories,<sup>4</sup> and the Department of Energy (DOE) Office of Science, and authorizes new technology transfer and commercialization activities at these agencies. It also authorizes inducement prizes at federal agencies; establishes a loan guarantee program for manufacturers; and establishes a Regional Innovation Program. In STEM education, the 2010 reauthorization seeks to provide greater coordination of federal STEM education programs, authorizes support for academic programs that provide teacher certification concurrent with a bachelors degree in a STEM field, and repeals certain unfunded STEM education programs, among other things.

America COMPETES 2010 is an authorization measure. New programs—and funding increases for existing programs—authorized by the law will not be established or realized unless funded by an appropriations act.

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<sup>1</sup> This report refers to the America COMPETES Reauthorization Act of 2010 as “America COMPETES 2010” and to the America COMPETES Act as “America COMPETES 2007.”

<sup>2</sup> Numbers reported are rounded, therefore small inconsistencies may occur in some cases.

<sup>3</sup> P.L. 111-358, Purpose.

<sup>4</sup> NIST is part of the U.S. Department of Commerce.

## FY2011 Funding for America COMPETES 2010

America COMPETES 2010 was enacted after the FY2011 appropriations and budget processes had begun and during an extended Congressional debate about the federal budget, deficit, and debt. Many of its FY2011 funding authorizations were not fully realized in appropriations acts. This section provides an overview of FY2011 funding for the new law, including the status of so-called “doubling path” accounts and of selected new and existing programs.

### The Doubling Path

America COMPETES 2010 pursues a so-called “doubling path” policy for the NSF, NIST laboratories and construction, and DOE Office of Science accounts (referred to herein as the “target accounts”)—albeit at a reduced rate of average annual growth and over a longer period of time than was implicitly established in the original America COMPETES Act.<sup>5</sup> As authorized by the new law, the average annual growth rate in combined funding for target accounts is 6.3%. At this pace, the doubling period would be approximately 11 years (from a FY2006 baseline).

FY2011 enacted appropriations for target accounts were below the levels authorized by America COMPETES 2010. At the funding levels established by the Department of Defense and Full-Year Continuing Appropriations Act, 2011, the average annual growth rate in combined funding for target accounts is 4.6%. At this pace, the doubling period would be approximately 15 years (from a FY2006 baseline).

### New and Existing Programs

In general, new programs authorized by America COMPETES 2010 were not explicitly funded by FY2011 appropriations acts. One existing program, Teachers for a Competitive Tomorrow, was reduced to zero.<sup>6</sup> Other existing programs were generally held at FY2010 levels, minus a 0.2% across-the-board rescission. (See **Table 1** at the end of this report.)

Two existing programs, the Advanced Research Projects Agency-Energy (ARPA-E) at the DOE and the Manufacturing Extension Program (MEP) at NIST, were funded at higher levels in FY2011 than in FY2010. For ARPA-E, funding from regular FY2010 appropriations was zero.<sup>7</sup> Funding in FY2011 for ARPA-E is \$179.6 million from regular appropriations, which represents the first regular appropriation for this program. For MEP, FY2011 appropriations are about 3.0% more than FY2010 levels (\$128.4 and \$124.7 million, respectively). (See **Table 1**.)

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<sup>5</sup> As authorized America COMPETES 2007, the average annual growth rate in combined funding for target accounts was 10.3%. At this pace, the doubling period would be approximately seven years (from a FY2006 baseline). Actual appropriations to the target accounts over the FY2008-FY2010 authorization period grew at a pace of 6.4%. At this rate of average annual growth, the doubling period would be approximately 11 years (from a FY2006 baseline).

<sup>6</sup> P.L. 112-10, Title VIII, Sec. 1842.

<sup>7</sup> However, ARPA-E received about \$415.0 million in FY2009 from regular appropriations and the American Recovery and Reinvestment Act (P.L. 111-5).

## **FY2008-FY2010 Funding for America COMPETES 2007**

America COMPETES 2007 authorized \$33.6 billion for federal programs and activities in R&D in the physical sciences and engineering and in STEM education, among other things, between FY2008 and FY2010. The law established new programs, such as the Math Now program; and reauthorized existing programs, such as the MEP program. The law also authorized increased funding levels for certain programs and activities, the largest of which were for the NSF, NIST laboratories, and the DOE Office of Science. This section provides an overview of funding for the 2007 law, including the status of appropriations for the so-called “doubling path” policy and a summary of appropriations during the authorization period.

### **The Doubling Path**

Actual appropriations for target accounts at the NSF, NIST laboratories and construction, and DOE Office of Science were less than the funding levels authorized by the 2007 law.<sup>8</sup> America COMPETES 2007 authorized a 10.3% average annual growth rate in funding for target accounts during the FY2008-FY2010 authorization period (from a FY2006 baseline). However, the actual average annual growth rate in appropriations during the authorization period was 6.4%. At that pace it would take about 11 years to achieve the doubling.

### **Appropriations Summary**

As with many authorization acts, America COMPETES 2007 was not fully funded and funding levels for its various provisions differed by agency, program, and fiscal year. In general, actual funding for the 2007 law was closest to authorized levels in 2009, when American Recovery and Reinvestment Act (ARRA, P.L. 111-5) funds augmented regular appropriations.<sup>9</sup> On an annual basis, appropriations during the law’s authorization period may be summarized as follows:

- In **FY2008**, Congress provided funds for the Teachers for a Competitive Tomorrow program (at NSF) and Technology Improvement Program (at NIST).<sup>10</sup> Most of the law’s other FY2008 authorizations went unfunded or were funded below authorized levels.<sup>11</sup>
- In **FY2009**, some America COMPETES Act programs were funded at authorized levels and others were not. For example, the NSF, NIST laboratories, and DOE’s

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<sup>8</sup> In 2006 President George W. Bush proposed a doubling path policy as part of the *American Competitiveness Initiative* (ACI). The President’s proposal would have increased funding for the NSF, NIST core, and DOE Office of Science over a 10-year period (from a FY2006 baseline). See, U.S. President (George W. Bush), Executive Office of the President, Office of Science and Technology Policy, *American Competitiveness Initiative*, 2006, [http://www.whitehouse.gov/files/documents/ostp/pdf/1pger\\_aci.pdf](http://www.whitehouse.gov/files/documents/ostp/pdf/1pger_aci.pdf).

<sup>9</sup> In the America COMPETES Act context, most analysts have treated ARRA funds as a one-time supplement, not as an agency or program baseline.

<sup>10</sup> The Technology Improvement Program replaced the Advanced Technology Program.

<sup>11</sup> This may be attributable, at least in part, to the fact that P.L. 110-69 passed after much of the FY2008 appropriations process had already taken place.

Office of Science were funded at or above authorized levels in FY2009 (including both regular and ARRA appropriations).<sup>12</sup> ARRA funds augmented regular appropriations for several America COMPETES Act programs in FY2009, including a \$400 million additional investment in ARPA-E.<sup>13</sup> Other programs, including certain STEM education programs, received no funding.

- In **FY2010**, actual appropriations for P.L. 110-69 were generally below authorized levels. Actual appropriations were closest to authorized levels at NIST. Other than the Teachers for a Competitive Tomorrow program, STEM education programs at the Department of Education (ED) were not specifically funded.<sup>14</sup>

## The President's FY2012 Budget Request

The Administration's FY2012 budget request includes funding for many existing programs and agencies reauthorized by America COMPETES 2010. For example, the Administration's FY2012 budget requests for the doubling path target accounts are near or above the levels authorized by America COMPETES 2010. However, many of the 2010 law's STEM education provisions are not explicitly funded in the Administration's FY2012 budget request or are funded below authorized levels. The FY2012 budget request also eliminates or merges certain STEM education programs at the Departments of Education and Energy, including programs authorized by America COMPETES 2010.

Of the new programs with specific funding authorizations in America COMPETES 2010, only the Regional Innovation Program (RIP) at the Department of Commerce was explicitly included in the Administration's FY2012 budget request. The President's request for the RIP includes funding for both the program as a whole, as well as a separate request for the Science Park Infrastructure Loan Guarantee component.

The following section discusses the President's FY2012 budget request for programs and agencies authorized by America COMPETES 2010. **Table 1** provides a program-specific comparison of the President's FY2012 budget request, America COMPETES 2010 authorization levels for FY2012, enacted FY2011 appropriations, and related Congressional actions.

## Research

This section highlights the Administration's FY2012 requests for selected agencies and programs included in America COMPETES 2010 and examines the budgetary status of the target accounts.

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<sup>12</sup> Excluding ARRA funds, the NSF and DOE Office of Science were funded below FY2009 authorized levels. The target accounts at NIST—e.g., the Scientific and Technology Research and Services (STRS) and the Construction of Research Facilities (CRF) accounts—were funded above authorized levels in regular appropriations acts *and* also received supplemental funding from ARRA.

<sup>13</sup> For more information, see CRS Report RL34396, *The America COMPETES Act and the FY2009 Budget*, by Deborah D. Stine.

<sup>14</sup> For more information, see CRS Report R40519, *America COMPETES Act and the FY2010 Budget*, by John F. Sargent Jr.

## Selected Agencies and Programs

President Obama's FY2012 budget request for the NSF's Research and Related Activities (R&RA) account—which is the primary source of research funding at the Foundation—is \$6.254 billion. This amount is \$20.0 million more than the authorized level of \$6.234 billion. Within the R&RA account the President requests \$160.5 million for the Experimental Program to Stimulate Competitive Research (EPSCoR) program, and \$9.2 million for the Partnerships for Innovation program. America COMPETES 2010 reauthorizes but does not specify funding levels for these programs.

The Administration's FY2012 budget request for the **DOE Office of Science** is \$5.416 billion. This funding level is close to the authorized level in America COMPETES 2010 (\$5.614 billion). The Administration also seeks \$650.0 million for the ARPA-E account at the DOE,<sup>15</sup> \$344.0 million more than the amount authorized in America COMPETES 2010 (\$306.0 million).

At **NIST**, the Administration requests a total of \$1.001 billion in FY2012, \$30.2 million more than the authorized level of \$970.8 million. Within the NIST budget the President requests \$678.9 million, \$17.8 million more than the authorized level of \$661.1 million, for the Scientific and Technology Research and Services (STRS) account; and \$84.6 million, \$0.3 million less than authorized, for Construction of Research Facilities (CRF) account. Within the NIST Industrial Technology Services (ITS) account, the Administration requests \$142.6 million for MEP, or \$12.5 million less than the \$155.1 million authorized; and \$7.7 million for the Malcolm Baldrige Quality Award program, \$2.6 million less than the authorized amount of \$10.3 million. The Administration does not specifically request funds for the NIST Green Jobs Act (Title VII of America COMPETES 2010).

## The Doubling Path

At the time of its release, the FY2012 *President's Plan for Science and Innovation (Plan)* stated that the FY2012 budget request “maintains the President's commitment to double the budgets of three key science agencies”<sup>16</sup> (i.e., the target accounts at NSF, NIST laboratories and construction, and the DOE Office of Science). However, it is unclear whether the Obama Administration still intends to support doubling of the target accounts; and, if so, over what period. The FY2012 *Plan* refers to the doubling policy, but is silent about the timeframe.<sup>17</sup> The FY2010 version of the *Plan* set a 10-year doubling path; the FY2011 version set an 11-year doubling path. Assessed against the FY2006 baseline, the President's FY2012 request seeks funding consistent with a 12-year doubling. However, future year budget projections published by the Office of Management and Budget show FY2016 aggregate funding for the target accounts would be consistent with a doubling path of nearly 20 years. (See **Figure 1**.)

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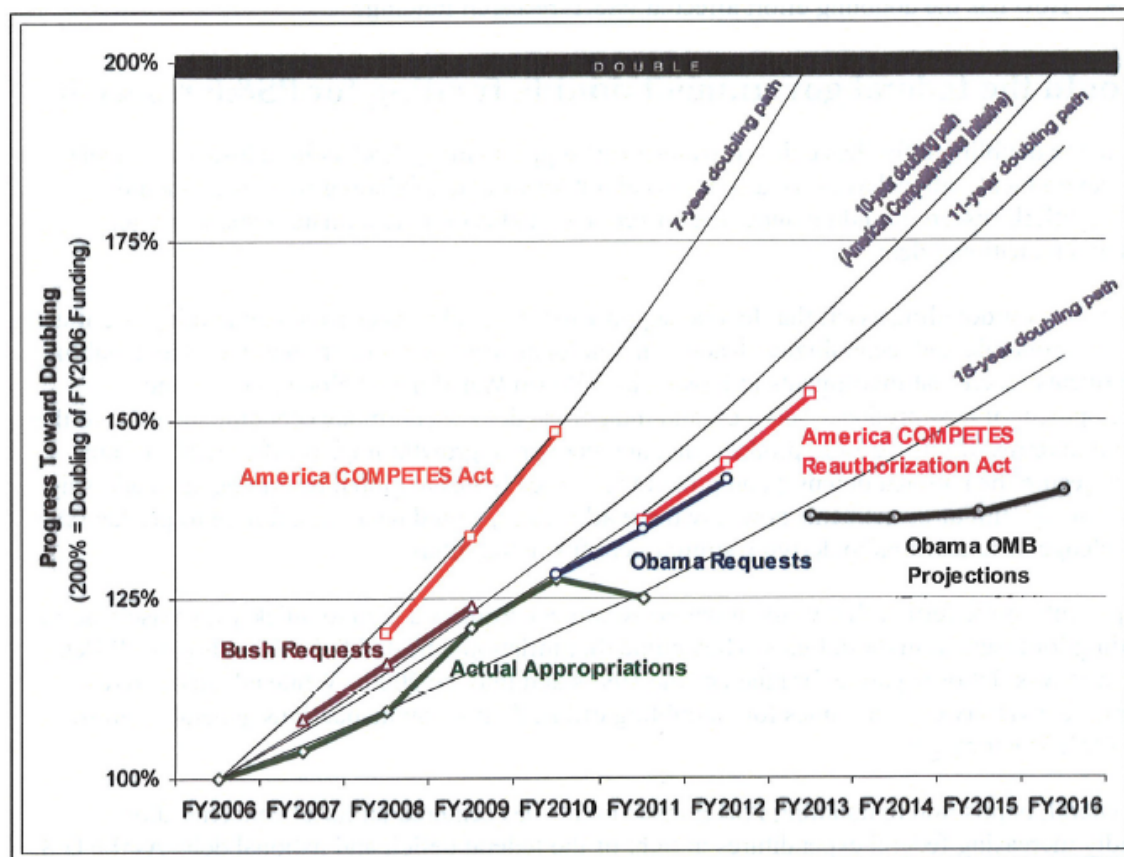
<sup>15</sup> This amount includes \$550.0 million in regular appropriations and \$100.0 million from the Administration's proposed Wireless Innovation (WIN) fund.

<sup>16</sup> U.S. President Barack Obama, Executive Office of the President, Office of Science and Technology Policy, “The President's Plan for Science and Innovation: Doubling Funding for Key Science Agencies in the 2012 Budget,” press release, February 14, 2011, <http://www.whitehouse.gov/sites/default/files/microsites/ostp/FY12-doubling-fs.pdf>.

<sup>17</sup> Executive Office of the President, Office of Science and Technology Policy, “The President's Plan for Science and Innovation: Doubling Funding for Key Science Agencies in the 2012 Budget,” press release, February, 14, 2011, <http://www.whitehouse.gov/sites/default/files/microsites/ostp/FY12-doubling-fs.pdf>.



**Figure I. Doubling of Research Funding for Targeted Accounts**  
(Appropriations/Request vs. Selected Rates)



**Source:** Prepared by the Congressional Research Service (CRS) using agency budget justifications for fiscal years 2008, 2009, 2010, 2011, and 2012; the President’s FY2012 budget request; P.L. 112-10; America COMPETES Act (P.L. 110-69); America COMPETES Reauthorization Act of 2010 (P.L. 111-358); and Office of Management and Budget, Historical Tables, Table 5.2, published as part of the President’s FY2012 request. Data and calculations are available upon request.

**Notes:** In 2009 Congress provided additional funding for the America COMPETES Act (P.L. 110-69) through the American Recovery and Reinvestment Act (ARRA, P.L. 111-5). The “Actual Appropriations” line does not include ARRA funds.

Adding to the uncertainty over the President’s commitment to doubling, following enactment of the 2011 budget White House Communications Director Dan Pfeiffer stated on The White House Blog,

Even though we will no longer double the funding of key research and development agencies, you will still see strong investments in National Institute of Standards and Technology, National Science Foundation and the [DOE] Office of Science.<sup>18</sup>

However, in Congressional hearings held after this comment was posted, the Administration argued for full funding of its FY2012 budget request, including funding for target accounts.<sup>19</sup>

<sup>18</sup> Dan Pfeiffer, “Details of the Bipartisan Budget Deal,” *The White House Blog*, April 9, 2011, <http://www.whitehouse.gov/blog/2011/04/09/details-bipartisan-budget-deal>.

## STEM Education

The President's FY2012 budget proposal for STEM education provisions in America COMPETES 2010 includes funding requests for existing programs at NSF, and funding and changes in existing programs at the Departments of Education and Energy.<sup>20</sup> The Administration's FY2012 budget does not include specific requests for new STEM education programs authorized by America COMPETES 2010, such as the STEM-Training Grant Program.

For NSF the Administration requests \$911.2 million in FY2012 for the Education and Human Resources account, which is the primary source of funds for STEM education programs at the Foundation.<sup>21</sup> This amount is \$67.8 million (6.9%) less than the America COMPETES 2010 authorized level of \$979.0 million and \$50.2 million (5.8%) more than the FY2011 enacted level of \$861.0 million. (See **Table 1**.) The Administration highlights its proposed FY2012 increases for the Graduate Research Fellowship program (\$198.1 million), which would fund 2,000 new awards; the Advanced Technological Education program (\$64.0 million), which focuses on technical education at community colleges; and the new Widening Implementation and Demonstration of Evidence-based Reforms (WIDER) program (\$20.0 million), which would seek to broadly implement undergraduate STEM education reforms.

The FY2012 NSF budget request also includes funding for existing STEM education programs that are authorized under America COMPETES 2010, but for which the act does not specify funding levels. These include the Integrative Graduate Education and Research Traineeship (IGERT), the Robert Noyce Teacher Scholarship (Noyce) program, Research Experiences for Undergraduates (REU), and the STEM Talent Expansion Program (STEP), among others. The Administration's FY2012 requests for these programs are \$62.5 million for IGERT, \$45.0 million for Noyce, \$66.0 million for REU, and \$35.5 million for STEP.

Both America COMPETES 2007 and the 2010 reauthorization include provisions authorizing a program to support Hispanic-serving institutions (HSIs) at the NSF. Section 7033 of America COMPETES 2007 directed the Foundation to establish a program for HSIs. Section 512 of America COMPETES 2010 directs the NSF to maintain its HSI program—and all other similar programs, such as the Historically Black Colleges and Universities Undergraduate Program—as separate programs.<sup>22</sup> As directed by the 2010 law, the Administration's FY2012 budget request for NSF maintains the Foundation's minority-serving institution programs as separate programs, albeit within a new “framework” called Broadening Participation at the Core (BPAC). However, the Foundation has not established an HSI-specific program—either within or apart from the BPAC framework—as directed by either America COMPETES 2007 or 2010. NSF's FY2012 budget incorporates a \$20.0 million request for a new program—Transforming Broadening

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(...continued)

<sup>19</sup> <http://www.aip.org/fyi/2011/057.html>

<sup>20</sup> See Executive Office of the President, Office of Science and Technology Policy, “Winning the Race to Educate Our Children,” press release, February 14, 2011, <http://www.whitehouse.gov/sites/default/files/microsites/ostp/FY12-STEM-fs.pdf>.

<sup>21</sup> The NSF Research and Related Activities account also supports some STEM education activities.

<sup>22</sup> The Foundation previously proposed consolidating its minority-serving institution programs. Congressional authorizers and appropriators both rejected that proposal.

Participation through STEM (TBPS)—that would include “increased engagement with Hispanic-serving institutions,”<sup>23</sup> but does not appear to be exclusively focused on HSIs.

The President’s FY2012 budget request for **ED** reorganizes the department (as previously proposed in the FY2011 request).<sup>24</sup> The proposed reorganization eliminates and consolidates certain programs, including America COMPETES 2010 programs.<sup>25</sup> For example, under the reorganization plan, both the Teachers for a Competitive Tomorrow (TCT) and Advanced Placement (AP) programs would be eliminated. TCT and AP program functions and activities would be absorbed into the newly created Teacher and Leader Pathways and College Pathways and Accelerated Learning programs, respectively.<sup>26</sup> The FY2012 request for Teacher and Leader Pathways is \$250.0 million.<sup>27</sup> The FY2012 request for College and Accelerated Learning Pathways is \$86.0 million.<sup>28</sup>

Similarly, the Administration’s FY2012 request for **DOE** proposes both funding for and changes to the department’s STEM education programs. DOE typically does not request specific funding for America COMPETES Act-authorized STEM education programs. However, the department says it operates programs that correspond with its responsibilities under the law.<sup>29</sup> According to the DOE, the Academies Creating Teacher Scientists (DOE ACTS) program corresponds with the Summer Institutes program from America COMPETES 2007 and 2010.<sup>30</sup> In accordance with the recommendations of a 2010 DOE Committee of Visitors report, the Administration seeks to terminate DOE ACTS in FY2012.<sup>31</sup> DOE also asserts that the Computational Science Graduate Fellowship and the Office of Science Graduate Fellowship programs are consistent with the Protecting America’s Competitive Edge (PACE) graduate fellowship program authorized by both America COMPETES 2007 and the 2010 reauthorization.<sup>32</sup> The Administration’s FY2012 requests for the Computational Science and Office of Science graduate fellowship programs are \$6.0 and \$16.1 million, respectively.

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<sup>23</sup> National Science Foundation, *NSF FY 2012 Budget Request to Congress*, February 14, 2011, p. EHR-19, [http://www.nsf.gov/about/budget/fy2012/pdf/01\\_fy2012.pdf](http://www.nsf.gov/about/budget/fy2012/pdf/01_fy2012.pdf).

<sup>24</sup> Congress must authorize this reorganization for it to take effect. The FY2011 appropriation to ED retained the existing department structure and organization. Legislative debate about the President’s proposal has continued in the context of the proposed reauthorization of the Elementary and Secondary Education Act of 1965, as amended by the No Child Left Behind Act. That debate began in the 111<sup>th</sup> Congress and continues in the 112<sup>th</sup>.

<sup>25</sup> For more information, see CRS Report R41355, *Administration’s Proposal to Reauthorize the Elementary and Secondary Education Act: Comparison to Current Law*, by Rebecca R. Skinner et al.

<sup>26</sup> It is not clear how the Department of Education would operate these merged programs or what their future functional relationship would be to the separate programs as they exist now.

<sup>27</sup> This amount includes funding for five existing programs, including Transition to Teaching, Teacher Quality Partnership, Teachers for a Competitive Tomorrow, Teach for America, and School Leadership.

<sup>28</sup> This amount includes funding for three existing programs, including the High School Graduation Initiative, Advanced Placement, and Javits Gifted and Talented Education.

<sup>29</sup> Telephone and e-mail communications between the author and Patricia Temple, Office of Congressional and Intergovernmental Affairs, U.S. Department of Energy, April 11, 2011.

<sup>30</sup> P.L. 110-69, Title V, Sec. 5003, as amended by P.L. 111-358, Title IX, Sec. 901.

<sup>31</sup> U.S. Department of Energy, Report of the Committee of Visitors of the Office of Workforce Development for Teachers and Scientists (WDTS) in the Department of Energy, May 17-19, 2010, [http://science.energy.gov/~media/bes/besac/pdf/Wdts\\_cov\\_2010\\_f.pdf](http://science.energy.gov/~media/bes/besac/pdf/Wdts_cov_2010_f.pdf).

<sup>32</sup> P.L. 110-69, Title V, Sec. 5009, as amended by P.L. 111-358, Sec. 902.

## Other Provisions

The President's FY2012 budget request includes funding for other America COMPETES 2010 provisions as well. These include \$40.0 million for a new Regional Innovation Program and \$7.0 million for a new Science Park Infrastructure Loan Guarantee program at the Department of Commerce's Economic Development Administration.<sup>33</sup> The Administration's FY2012 budget request does not include specific funding for the new Federal Loan Guarantees for Innovative Technologies in Manufacturing program at the Department of Commerce<sup>34</sup> or for the NIST Green Jobs Act of 2010, both of which were authorized by America COMPETES 2010.<sup>35</sup>

## Congressional Action

Funding for America COMPETES 2010 programs and agencies is typically included in three regular appropriations acts:<sup>36</sup>

- *Commerce, Justice, Science, and Related Agencies (CJS)*, for NSF, NIST, and other Department of Commerce programs;<sup>37</sup>
- *Energy and Water Development (Energy-Water)*, for DOE programs;
- *Labor, Health and Human Services, Education, and Related Agencies (Labor-HHS-Education)*, for ED programs.

**Table 1** summarizes the FY2012 appropriations status of America COMPETES 2010 provisions. It, as well as this section, will be updated to reflect House and Senate FY2012 regular appropriations acts when those bills pass their respective chambers.

## Issues for Congress

Passage of the America COMPETES Reauthorization Act of 2010 raises several FY2012 funding and policy questions for Congress. Among these are whether to continue funding the doubling path (and, if so, at what rate); and whether and how to respond to the STEM education program authorizations and changes that the Administration seeks at the NSF, ED, and DOE. Given the current federal fiscal condition and debate over the federal budget, larger questions focus on where funding for America COMPETES 2010 fits amidst competing federal priorities and on the role science and technology should play in ensuring national competitiveness during this period of economic and budgetary uncertainty.

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<sup>33</sup> P.L. 111-358, Title VI, Sec. 603.

<sup>34</sup> P.L. 111-358, Title VI, Sec. 602.

<sup>35</sup> P.L. 111-358, Title VII, Sec. 703.

<sup>36</sup> For more information on the appropriations process, see CRS Report 97-684, *The Congressional Appropriations Process: An Introduction*, by Sandy Streeter.

<sup>37</sup> For more information on FY2012 CJS appropriations, see CRS Report R41721, *Commerce, Justice, Science, and Related Agencies: FY2012 Appropriations*, coordinated by Nathan James, Oscar R. Gonzales, and Jennifer D. Williams.

**Table I. America COMPETES Reauthorization Act of 2010 (P.L. 111-358):  
FY2012 Programs and Appropriations Status**

(in millions of dollars)

Programs	FY2011 Appropriation (P.L. 112-10)	FY2012 Authorization (P.L. 111-358)	FY2012 Request	House	Senate	FY2012 Final
<b>Department of Commerce</b>						
Federal Loan Guarantees for Innovative Technologies in Manufacturing (New, Sec. 602)	n/d	\$20.0	n/d			
Regional Innovation Program (New, Sec. 603)	\$0.0	\$100.0	\$40.0			
Loan Guarantees for Science Park Infrastructure (New, Sec. 603)	n/d	\$7.0	\$7.0			
<b>Department of Education</b>						
Teachers for a Competitive Tomorrow – Baccalaureate (Sec. 1003)	\$0.0	\$2.0	\$0.0 <sup>a</sup>			
Teachers for a Competitive Tomorrow – Master's (Sec. 1003)	\$0.0	\$2.0	\$0.0 <sup>a</sup>			
Advanced Placement and International Baccalaureate Programs (Sec. 1003)	n/d	\$75.0	\$0.0 <sup>b</sup>			
Alignment of Education Programs (Sec. 1003)	n/d	\$120.0	n/d <sup>c</sup>			
<b>Department of Energy</b>						
Summer Institutes (Sec. 901)	n/d	\$25.0	\$0.0 <sup>d</sup>			
Nuclear Science Program Expansion Grants for Institutions of Higher Education (Sec. 902)	n/d	\$10.1	n/d			
Nuclear Science Competitiveness Grants for Institutions of Higher Education (Sec. 902)	n/d	\$8.5	n/d			
Hydrocarbon Systems Science Talent Program (Expansion Grants, Sec. 902)	n/d	\$10.1	n/d			
Early Career Awards (Sec. 902)	n/d	\$25.0	n/d <sup>e</sup>			

Programs	FY2011 Appropriation (P.L. 112-10)	FY2012 Authorization (P.L. 111-358)	FY2012 Request	House	Senate	FY2012 Final
Protecting America's Competitive Edge (PACE) Graduate Fellowship Program (Sec. 902)	n/d	\$21.2	n/d <sup>f</sup>			
Distinguished Scientist Program (Sec. 902)	n/d	\$32.0	\$0.0 <sup>g</sup>			
Basic Research (Office of Science, Sec. 903)	\$4,847.2	\$5,614.0	\$5,416.1			
Advanced Research Projects Agency—Energy (Sec. 904)	\$179.6	\$306.0	\$650.0 <sup>h</sup>			
<b>National Institute of Standards and Technology</b>						
Total (Sec. 402)	\$854.9	\$970.8	\$1,001.0			
Scientific & Technical Research & Services	\$507.0	\$661.1	\$678.9			
Construction of Research Facilities	\$69.9	\$84.9	\$84.6			
Industrial Technology Services	\$173.3	\$224.8	\$237.6			
<i>Manufacturing Extension Partnership</i>	\$128.4	\$155.1	\$142.6			
<i>Malcolm Baldrige National Quality Award</i>	\$9.6	\$10.3	\$7.7			
NIST Green Jobs Act of 2010 (New, Sec. 703)	n/d	\$7.0	n/d			
<b>National Science Foundation</b>						
Total (Sec. 503)	n/d	\$7,800.0	\$7,767.0			
Research & Related Activities	\$5,563.9	\$6,234.3	\$6,253.5			
Education & Human Resources	\$861.0	\$979.0	\$911.2			
Major Research Equipment and Facilities Construction	\$117.1	\$225.5	\$224.7			
Agency Operations & Award Management	\$299.4	\$341.7	\$357.7			
National Science Board	\$4.5	\$4.8	\$4.8			
Office of the Inspector General	\$14.0	\$14.7	\$15.0			
STEM-Training Grant Program (New, Sec. 556)	n/d	\$10.0	n/d			

**Sources:** U.S. Department of Commerce, Economic Development Administration, *FY2012 Congressional Budget Request*, no date, [http://www.osec.doc.gov/bmi/budget/12CJ/EDA\\_FY\\_2012\\_Congressional\\_Submission.pdf](http://www.osec.doc.gov/bmi/budget/12CJ/EDA_FY_2012_Congressional_Submission.pdf); U.S.

Department of Education, *FY 2012 Department of Education Justifications of Appropriation Estimates to the Congress*, March 31, 2011, <http://www2.ed.gov/about/overview/budget/budget12/justifications/index.html>; U.S. Department of Energy, *FY2012 Congressional Budget Request: Budget Highlights*, February 2012 [sic], <http://www.cfo.doe.gov/budget/12budget/Content/FY2012Highlights.pdf>; National Institute of Standards and Technology, *Fiscal Year 2012 Budget Submission to Congress*, January 28, 2010, [http://www.osec.doc.gov/bmi/budget/12CJ/2012\\_NIST\\_&\\_NTIS\\_Cong\\_Budget.pdf](http://www.osec.doc.gov/bmi/budget/12CJ/2012_NIST_&_NTIS_Cong_Budget.pdf); National Science Foundation, *NSF FY 2012 Budget Request to Congress: Overview*, no date, [http://www.nsf.gov/about/budget/fy2012/pdf/01\\_fy2012.pdf](http://www.nsf.gov/about/budget/fy2012/pdf/01_fy2012.pdf); Department of Defense and Full-Year Continuing Appropriations Act, 2011 (P.L. 112-10), Consolidated Appropriations Act, 2010 (P.L. 111-17), Energy and Water Development and Related Agencies Appropriations Act, 2010 (P.L. 111-85), America COMPETES Reauthorization Act of 2010 (P.L. 111-358), and e-mail and telephone communication between the author and Patricia Temple, U.S. Department of Energy, April 14, 2011.

**Notes:** n/d = not defined; CRS was unable to identify a specific, defined appropriation or budget request for the authorization. Funding levels for FY2011 include 0.2% across-the-board rescission as per P.L. 112-10, Sec. 119. Programs designated as “new” are new to the America COMPETES Act. Totals may not add due to rounding.

- a. The FY2012 budget request for ED merges these programs into the proposed new program, Teacher and Leader Pathways (TLP). The FY2012 request for TLP is \$250.0 million.
- b. The FY2011 appropriations acts do not include a definite funding level for Advanced Placement (AP) programs. The Administration’s FY2012 request would merge AP programs into the proposed new program, College Pathways and Accelerated Learning (CPAL). The FY2012 request for CPAL is \$86.0 million.
- c. ED has similar programs and activities but does not rely on P.L. 111-358 for general statutory authority to undertake its alignment activities. The exception to this rule is for state education data system elements, for which ED relies on P.L. 110-69, Section 6401.
- d. According to the DOE, this program corresponds with the DOE Academies Creating Teacher Scientists (ACTS) Program. DOE’s FY2012 request proposes eliminating the DOE ACTS program.
- e. According to DOE, there is no line item for Early Career Awards but funds were requested for both FY2011 and FY2012. The agency initiated the program in FY2010 with American Recovery and Reinvestment Act funds.
- f. According to DOE, the agency manages at least two programs that are consistent with PACE provisions: (1) the Computational Science Graduate Fellowship (CSGF) in the Office of Science, Advanced Scientific Computing Research, and (2) the Graduate Fellowship program in the Office of Science, Workforce Development for Teachers and Scientists. The FY2012 request for CSGF is \$6.0 million, and the FY2012 request for the Graduate Fellowship is \$16.1.
- g. According to the DOE, no funds have been requested or appropriated for this activity.
- h. The FY2012 request for ARPA-E includes \$100 million from the Wireless Innovation (WIN) fund.

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