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*Federal R&D Funding Under a Continuing Resolution*

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## CRS Report for Congress

# Federal R&D Funding Under a Continuing Resolution

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### Summary

On February 15, 2007 President Bush signed into law P.L. 110-5 (H.J.Res 20), which provides funding for the nine outstanding regular appropriations bills through September 30, 2007. The 109<sup>th</sup> Congress passed two appropriations bills, the Department of Defense (P.L. 109-289, H.Rept. 109-676) and the Department of Homeland Security (P.L. 109-295, H.Rept. 109-699). P.L. 110-5 will fund most agencies at FY2006 levels through September 30, 2007. However, P.L. 110-5 contains some exceptions to those guidelines, including the centerpiece of the President's proposed FY2007 R&D budget, the American Competitiveness Initiative (ACI). Agencies are required to report their estimated FY2007 R&D funding levels to Congress by March 15, 2007.

The Bush Administration had requested \$137.7 billion in federal research and development (R&D) funding for FY2007. This sum represented a 2.4% increase over the estimated \$134.5 billion that was approved in FY2006. As in the recent past, the FY2007 increase over the FY2006 estimated funding levels was due to significant funding increases for the Department of Defense (DOD) and the National Aeronautics and Space Administration's (NASA's) space vehicles development program (see **Table 1**, below).

The centerpiece of the President's proposed FY2007 R&D budget was the National Research Council's (NRC) report entitled *Rising Above the Gathering Storm and Energizing and Employing America for a Brighter Future*. The report expressed growing concerns about America's ability to compete in the technological global market place.<sup>1</sup> In response to the NRC report, the President requested the American Competitiveness Initiative (ACI). As proposed, over the next 10 years, this \$136 billion initiative would commit \$50 billion for research, science education, and the modernization of research infrastructure. The remaining \$86 billion would finance a revised permanent research and

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<sup>1</sup> *Rising Above The Gathering Storm and Energizing and Employing America for a Brighter Economic Future*, The National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine, The National Academies, 500 Fifth Street, NW, Washington, DC 20001, 2005.

experimentation (R&E) tax incentive over the next 10 years. Congress approved a temporary research and experimental (R&E) tax credit that will expire on December 31, 2007.

## The Current Status of FY2007 R&D Appropriations

The 109<sup>th</sup> Congress passed two appropriations bills, the Department of Defense (P.L. 109-289, H.Rept. 109-289) and the Department of Homeland Security (P.L. 109-295, H.Rept. 109-699). On February 15, 2007 President Bush signed into law P.L. 110-5, (H.J.Res. 20) which provides funding for the nine outstanding regular appropriations bills through September 30, 2007. However, P. L.-110-5 contains some exceptions to those guidelines, including the centerpiece of the President's proposed FY2007 R&D budget, the American Competitiveness Initiative (ACI).

Total federal R&D could reach an estimated \$140 billion for FY2007. Despite the ACI, most of this increase can be attributed to large funding increases for development spending in defense and for the National Aeronautics and Space Administration. CRS estimates that total federal basic research funding could decline in FY2007. Five agencies account for 90% of all federal basic research expenditures. Total federal research funding (the sum of basic and applied research) is also projected to decline in FY2007.

**American Competitiveness Initiative (ACI).** As part of the \$50 billion for research initiatives, the President called for doubling the federal R&D funding over 10 years. This increase would include the physical sciences and engineering research in three agencies: the National Science Foundation (NSF), the Department of Energy's (DOE's) Office of Science, and the National Institute of Standards and Technology (NIST). Based on P. L. 110-5, H.J.Res. 20, both the House and Senate FY2007 appropriations actions would partially fund the President's ACI request. Based on House and Senate actions DOE's Office Science would receive \$200 million of ACI funding, while NSF is expected to receive an estimated \$217million, and NIST an estimated \$37 million, of ACI funding in FY2007.

**Homeland Security.** The Department of Homeland Security (DHS) requested \$1.552 billion for R&D in FY2007, an increase of 4.5% from FY2006. This total included \$1.002 billion for the Directorate of Science and Technology, \$536 million for the Domestic Nuclear Detection Office (DNDO), and \$14 million for Research, Development, Test, and Evaluation (RDT&E) in the U.S. Coast Guard. The request for DNDO was a 70% increase. The request for the S&T Directorate was a 13% decrease. The House provided \$956 million for the Directorate of Science and Technology; \$500 million for DNDO; and \$14 million for Coast Guard RDT&E. The Senate provided \$818 million for the S&T Directorate (less a rescission of \$200 million in unobligated prior-year funds); \$442 million for DNDO; \$18 million for Coast Guard RDT&E; and \$92 million for R&D in the Transportation Security Administration (transferred from S&T). The final bill provided \$973 million for S&T (less \$125 million in rescinded prior-year funds); \$481 million for DNDO, and \$17 million for Coast Guard RDT&E. The final total of \$1.371 billion (excluding the rescission of unobligated funds) was an overall 9%

reduction from FY2006, made up of a 16% decrease for S&T, a 53% increase for DNDO, and a 6% decrease for Coast Guard RDT&E.<sup>2</sup> (See P.L. 109-295, H.Rept. 109-699)

**Labor/HHS/ED.** The primary R&D agency under this appropriations bill is the National Institutes of Health (NIH). For the second fiscal year in a row, NIH is likely to see its budget decline in real dollars. The President requested a program level budget of \$28.487 billion for NIH for FY2007, essentially equal to the FY2006 final budget and \$66.8 million (0.2%) lower than the FY2005 level of \$28.553 billion. The FY2006 amount was the first decrease in NIH's appropriation since 1970. (NIH lost an additional \$19.5 million in FY2006 funds in June 2006 when the HHS Secretary exercised his transfer authority to give the Centers for Medicare and Medicaid a total of \$40 million from other HHS discretionary accounts, dropping the NIH program level to \$28.468 billion.) At the end of the 109<sup>th</sup> Congress, the House and Senate agreed on the first NIH reauthorization statute enacted since 1993, the NIH Reform Act of 2006 (P.L. 109-482). The law made managerial and organizational changes in NIH, focusing on enhancing the authority and tools for the NIH Director to do strategic planning, especially to facilitate and fund cross-institute research initiatives. H.J.Res. 20 would fund NIH at \$28.9 billion, a proposed increase of \$619.5 million. This would allow the agency to fund an additional 500 research grants and 1,500 first time investigators.

**Science-State-Justice-Commerce.** The House and Senate appropriations committees oversee the activities of four major R&D agencies. They include NSF and NIST (who are participating in the ACI), NASA, and the National Oceanic and Atmospheric Administration (NOAA) in the Department of Commerce. The House-passed bill H.R. 5672 would cut NOAA funding from \$610 million in FY2006, to \$510 million in FY2007. Concomitantly, the Senate Appropriations Committee reported H.R. 5672 (amended in the nature of a substitute), which included a recommendation of \$779 million for NOAA R&D funding in FY2007. The Administration's FY2007 budget includes \$581.3 million for NIST, almost 22.7% below the current fiscal year. Support for internal R&D activities under the Scientific and Technology Research and Services (STRS) account would increase 18.3% to \$467 million, most of which is related to the ACI. The House-passed FY2007 appropriations bill, H.R. 5672, provides NIST with \$627 million, a decrease of almost 16.6% from the current fiscal year. The version of H.R. 5672 reported from the Senate Committee on Appropriations would fund NIST at \$764 million, 1.6% above the current fiscal year. For the first time, both the House and Senate bills would not provide any funding for NIST's Advanced Technology Program. Under H.J.Res. 20, NIST would receive an additional \$50 million for research in its laboratories.

**Other Budget-related Issues.** The absence of an early House and Senate agreement on the FY2007 Budget Resolution (S.Con.Res. 83) and (H.Con.Res. 376) played a major role in delaying the passage of the remaining FY2007 appropriations bills. How the House and Senate resolve their differences regarding R&D funding remains to be seen. One approach that legislators have traditionally used is for the House and Senate to split the difference in their funding proposals. However, as indicated in **Table 1** below,

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<sup>2</sup> DNDO was funded within the S&T Directorate in FY2006. The percentage increases given here for DNDO are relative to its FY2006 funding within S&T. The percentage decreases for S&T are relative to its FY2006 funding, exclusive of DNDO.

this approach would result in some agencies either receiving no increases or having significant funding reductions in FY2007.

According to an article in *CQ*, 82 Republican and Democratic House Members have requested that NSF receive the \$6 billion the President had proposed for FY2007. In addition, Senators Lamar Alexander and Jeff Bingaman were circulating a letter containing the signatures of 43 Senators in both parties calling for the substantial increases in the CR for the Office of Science in DOE.<sup>3</sup>

In an article in the *Washington Post*, Representative David Obey, incoming Chairman of the House Appropriations Committee, and Senator Robert Byrd, incoming Chairman of the Senate Appropriations Committee, indicated that they intend to extend the current CR until end of the FY2007 fiscal year. If Congress approves extending the current CR to September 30, 2007, most agencies would see their FY2007 R&D budgets remain at FY2006 funding levels. Further, because agencies are usually not allowed to initiate new programs under a CR, the President's ACI may not be implemented in FY2007.<sup>4</sup>

**Limitations on R&D Activities.** The current CR allows agencies without enacted FY2007 appropriations to fund existing R&D programs and activities at FY2006 funding levels. However, if Congress approves a year-long continuing resolution, no new initiatives, including the President's ACI proposal, could be funded in FY2007. If Congress approves a year-long CR, funding for basic and applied research is estimated to decline 2% in real dollars. Further, based on current Congressional actions, such agencies as the Department of Agriculture, the Department of Energy, and NOAA would see their R&D budgets decline significantly in FY2007. The CR would also cancel most of the congressionally designated, performer-specific R&D projects (traditionally known as earmarks) that were pending in the unfinished 2007 appropriations bills.

As part of H.J.Res. 20, NSF's research account would increase \$335 million to \$4.7 billion. According to NSF this increase is a down-payment towards enhancing U. S. global competitiveness by investing in basic science research. However, according to NSF, the loss of the ACI will result in the reduction of 600 new research grants. Also, NSF notes, assuming research proposal pressure remains stable at 2006 levels, there would be a decline of successful research funding rates from 21% in 2006 to an estimated 18% in 2007. NSF also indicated that funding for the EPSCoR program would be frozen, rather than allowed to increase as recommended by both the full House and Senate appropriations committees. In addition, the CR would result in the loss of 40 planned Graduate Research Fellowships occurring at such a time, according to NSF, when many experts are calling for significant increases in this program. According to NSF, without these fellowships, these best and brightest students from all fields of science and engineering may be forced to seek other funding or apply their talents to non-research fields.

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<sup>3</sup> Liriel Higa and Alan K. Ota, *C. Q. Today*, Requests for Extra Money in "CR" Multiply, January 25, 2007.

<sup>4</sup> Shailagh Murray and Jonathan Weisman, "Democrats Freeze Earmarks for Now," *The Washington Post*, December 12, 2006, p. A3.

According to DOE, H. Jes. 20, includes a \$200 million increase for the Office of Science, as part of its FY2007 contribution to the ACI.

**The Ratio of Civilian and Defense R&D.** When President Bush took office in 2001, the ratio of defense to civilian R&D was 52% to 48%. If the FY2007 House passed appropriations legislation becomes law, defense related R&D would reach \$81.2 billion, or 58% of federal R&D, while civilian R&D would decline to \$58.8 billion, or to 42% of total federal R&D spending.<sup>5</sup> This represents the largest discrepancy between defense and civilian R&D spending since the early 1990s. Some argue that defense R&D has little impact on the discovery of new knowledge and the transfer of technological innovation to the commercial market place. This issue was raised during the Reagan Administration when defense research reached 68% of total federal R&D spending in the late 1980s. One of the major recommendations in the NRC's report, *Rising Above the Gathering Storm*, calls for an increase in federal investment in long-term basic research, ideally through reallocation of existing funds, but also if necessary via new funds by consenting to an increase of 10% annually over the next seven years. The report noted that special attention should go to the physical sciences, engineering, mathematics, and information sciences and to DOD basic research funding. According to the report, this special attention does not mean that there should be a disinvestment in such important fields as the life sciences or the social sciences. Instead, the report contends a balanced research portfolio in all fields of science and engineering research is critical to U.S. prosperity.<sup>6</sup>

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<sup>5</sup> This CRS estimate is based on Defense R&D as the sum of DOD's RDT&E programs, the Department of Energy's defense related R&D activities, and an estimated \$400 million in homeland security R&D.

<sup>6</sup> *Rising Above The Gathering Storm and Energizing and Employing America for a Brighter Economic Future*, The National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine, The National Academies, 500 Fifth Street, NW Washington, DC 20001, 2005, p.5.

**Table 1. Estimated Federal R&D Appropriations  
in the 109<sup>th</sup> Congress**  
(millions \$)

<b>Agency</b>	<b>FY2006 Est.</b>	<b>FY2007 Request</b>	<b>FY2007 House</b>	<b>FY2007 Senate</b>	<b>Approp. 2007 Est.</b>
Department of Defense	71,152	73,157	75,337	72,998	75,435 <sup>a</sup>
Homeland Security	1,505	1,552	1,470	1,370	1,371 <sup>b</sup>
Nat. Institutes of Health	28,468	28,487	28,489	28,688 <sup>c</sup>	
NASA	11,475	12,336	12,260	12,300 <sup>d</sup>	
Nat. Science Foundation	5,581	6,020	6,020	5,992 <sup>d</sup>	
NIST	552	581	627	764 <sup>d</sup>	
NOAA	610	533	510	779 <sup>d</sup>	
Dept. of Interior	634	598	630	643 <sup>e</sup>	
EPA	730	788	808	793 <sup>e</sup>	
Dept. Energy	8,848	9,153	9,394	9,891 <sup>f</sup>	
Dept. of Transportation	752	581	627	764 <sup>g</sup>	
Dept. of Agriculture	2,451	2,108	2,388	2,433 <sup>h</sup>	
Other	1,840	1,831	1,855	1,865 <sup>i</sup>	
<b>Total</b>	<b>134,515</b>	<b>137,770</b>	<b>140,415</b>	<b>139,280</b>	

a. P.L. 109-289, H.Rept. 109-676.

b. P.L. 109-295, H.Rept. 109-699.

c. Labor-HHS-Education, H.Rept. 109- 485; S.Rept. 109-287.

d. Science-State-Justice-Commerce, H.Rept. 109-520; S. Commerce-Justice-Science, S.Rept. 109-280.

e. Interior-Environment, H.Rept. 109-465; S.Rept. 109-275.

f. Energy-Water, H.Rept. 109-474; S.Rept. 109-274.

g. Transportation-Treasury-HUD-Judiciary-D.C., H.Rept. 109-495; S.Rept. 109-293.

h. Agriculture, H.Rept. 109-463, Part 1&2; S.Rept. 109-266.

i. "Other" includes Education, Veterans, Agency for International Development, Nuclear Regulatory Commission, Smithsonian, Justice, Treasury, TVA, and the U.S. Postal Service.