



CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

February 27, 2006

S. 2198 **Protecting America's Competitive Edge Through** **Education and Research Act of 2006**

As introduced on January 26, 2006

SUMMARY

S. 2198 would establish programs to encourage postsecondary students to complete degrees in mathematics, science, and engineering; improve mathematics and science education for K-12 teachers; and encourage and support basic research in mathematics and science. The bill would authorize the appropriation of \$9.8 billion in fiscal year 2007 and \$69.7 billion over the 2007-2011 period. CBO estimates that implementing S. 2198 would cost \$3.5 billion in 2007 and \$52.6 billion over the 2007-2011 period. In total, CBO estimates that S. 2198 would authorize the appropriation of \$108.5 billion over the 2007-2017 period. Enacting the bill would not have any significant impact on direct spending or revenues.

S. 2198 contains no intergovernmental or private-sector mandates as defined by the Unfunded Mandates Reform Act (UMRA); any costs to state, local, or tribal governments would result from complying with conditions of federal assistance.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of S. 2198 is presented in Table 1. The costs of this legislation fall within functions 050 (national defense), 250 (general science, space, and technology), 370 (commerce and housing credit), 500 (education, training, employment, and social services), and 750 (administration of justice).

Table 1. Estimated Budgetary Effects of S. 2198, the Protecting America’s Competitive Edge Through Education and Research Act of 2006

	By Fiscal Year, in Millions of Dollars				
	2007	2008	2009	2010	2011
CHANGES IN SPENDING SUBJECT TO APPROPRIATION					
Title I - 10,000 Teachers, 10,000,000 Minds K-12 Mathematics and Science Education					
Authorization Level	1,148	2,269	3,148	3,907	4,264
Estimated Outlays	317	1,173	2,203	3,095	3,665
Title II - Sowing the Seeds Through Science and Engineering Research					
Estimated Authorization Level	7,080	8,244	9,015	9,863	10,794
Estimated Outlays	2,764	5,928	7,694	8,775	9,710
Title V - Strengthening Basic Research at the Department of Defense					
Authorization Level	1,619	1,783	2,003	2,161	2,377
Estimated Outlays	405	1,174	1,627	1,911	2,132
Total Changes					
Estimated Authorization Level	9,846	12,296	14,165	15,931	17,434
Estimated Outlays	3,486	8,275	11,524	13,782	15,507

NOTE: Components may not sum to totals because of rounding.

BASIS OF ESTIMATE

For this estimate, CBO assumes that S. 2198 will be enacted during 2006 and that the specified and estimated amounts will be appropriated for each year.

CBO estimates that S. 2198 would authorize the appropriation of \$108.5 billion over the 2007-2017 period. The bill would authorize the appropriation of \$9.8 billion in 2007 and \$69.7 billion over the 2007-2011 period. CBO estimates that implementing the bill would cost \$3.5 billion in fiscal year 2007 and \$52.6 billion over the 2007-2011 period. Table 2 presents the budgetary effects for each section of S. 2198.

Table 2. Detailed Budgetary Effects of S. 2198, the Protecting America’s Competitive Edge Through Education and Research Act of 2006

	By Fiscal Year, in Millions of Dollars				
	2007	2008	2009	2010	2011
CHANGES IN SPENDING SUBJECT TO APPROPRIATION					
Title I - 10,000 Teachers, 10,000,000 Minds K-12 Mathematics and Science Education					
Section 121. Department of Education					
Grants for Baccalaureate Degrees for Mathematics and Science Teachers					
Authorization Level	30	90	190	290	390
Estimated Outlays	1	17	58	133	226
Section 122. Department of Education					
Grants for Master’s Degrees for Mathematics and Science Teachers					
Authorization Level	200	500	500	500	500
Estimated Outlays	4	110	320	446	500
Section 132. National Science					
Foundation Scholarships for Mathematics and Science Teachers					
Authorization Level	50	100	150	170	170
Estimated Outlays	6	32	72	114	143
Section 141. National Science					
Foundation Fellowships for Mathematics and Science Teachers					
Authorization Level	0	5	15	130	245
Estimated Outlays	0	1	4	23	86
Section 151. Advanced Placement and International Baccalaureate Programs					
Authorization Level	241	341	453	596	731
Estimated Outlays	5	127	252	384	510
Section 161. National Clearinghouse on Mathematics and Science Teaching Materials					
Authorization Level	20	20	20	20	20
Estimated Outlays	*	10	16	20	20
Section 171. Department of Energy					
Future American-Scientist Scholarships					
Authorization Level	375	750	1,125	1,500	1,500
Estimated Outlays	188	544	919	1,294	1,481
Section 181. Department of Energy					
Graduate Research Fellowships in Scientific Areas of National Need					
Authorization Level	225	450	675	675	675
Estimated Outlays	113	326	551	664	675

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Table 2. CONTINUED

	By Fiscal Year, in Millions of Dollars				
	2007	2008	2009	2010	2011
Section 191. National Science Foundation					
Early-Career Research Grants					
Authorization Level	7	13	20	26	33
Estimated Outlays	1	6	11	17	24
Title I, subtotal					
Authorization Level	1,148	2,269	3,148	3,907	4,264
Estimated Outlays	317	1,173	2,203	3,095	3,665
Title II - Sowing the Seeds Through Science and Engineering Research					
Section 211. Coordination of Science, Mathematics, and Engineering Education Programs					
Estimated Authorization Level	1	1	1	1	1
Estimated Outlays	1	1	1	1	1
Section 212. National Coordination Office for Advanced Research Instrumentation and Facilities					
Authorization Level	0	507	507	507	507
Estimated Outlays	0	235	435	483	495
Section 213. High-Risk, High-Payoff Research					
Estimated Authorization Level	1	0	0	0	0
Estimated Outlays	1	0	0	0	0
Section 214. President's Innovation Award					
Authorization Level	1	1	1	1	1
Estimated Outlays	1	1	1	1	1
Section 221. NASA Early-Career Research Grants					
Authorization Level	5	9	14	18	23
Estimated Outlays	3	7	12	16	20
Section 222. NASA Basic Science Research					
Authorization Level	2,768	3,044	3,349	3,684	4,052
Estimated Outlays	1,827	2,756	3,157	3,514	3,879
Section 241. Development of Science Parks					
Authorization Level	110	68	68	68	68
Estimated Outlays	8	25	57	73	73
Section 251. National Science Foundation Research					
Authorization Level	4,195	4,614	5,076	5,584	6,143
Estimated Outlays	923	2,903	4,032	4,687	5,240

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Table 2. CONTINUED

	By Fiscal Year, in Millions of Dollars				
	2007	2008	2009	2010	2011
Title II, subtotal					
Estimated Authorization Level	7,080	8,244	9,015	9,863	10,794
Estimated Outlays	2,764	5,928	7,694	8,775	9,710
Title V - Strengthening Basic Research at the Department of Defense					
Section 501. Department of Defense					
Early-Career Research Grants					
Authorization Level	3	5	8	10	13
Estimated Outlays	1	2	5	7	10
Section 502. Department of Defense					
Basic Research					
Authorization Level	1,616	1,778	1,995	2,151	2,364
Estimated Outlays	404	1,172	1,622	1,904	2,123
Title V, subtotal					
Authorization Level	1,619	1,783	2,003	2,161	2,377
Estimated Outlays	405	1,174	1,627	1,911	2,132
Total Changes					
Estimated Authorization Level	9,846	12,296	14,165	15,931	17,434
Estimated Outlays	3,486	8,275	11,524	13,782	15,507

NOTE: * = less than \$500,000.

Title I - 10,000 Teachers, 10,000,000 Minds K-12 Mathematics and Science Education

Title I of S. 2198 would authorize the appropriation of \$1.1 billion for fiscal year 2007 and \$14.7 billion over the 2007-2011 period. Those appropriations would be used for new grant programs to be operated by the Department of Education and the National Science Foundation, primarily to improve teacher preparation in mathematics and science and to encourage teachers to pursue careers in those subjects. CBO estimates that implementing this title would cost \$317 million in fiscal year 2007 and \$10.5 billion over the 2007-2011 period.

Title II - Sowing the Seeds Through Science and Engineering Research

Title II would authorize the appropriation of \$7.1 billion for fiscal year 2007 and \$45 billion over the 2007-2011 period. The bulk of these new funds would go to the National Science Foundation and the National Aeronautics and Space Administration to support basic research. CBO estimates that implementing these provisions would cost \$2.8 billion in fiscal year 2007 and \$34.9 billion over the 2007-2011 period.

Title III - Ensuring the Best and Brightest Remain in the United States

Title III would establish a new nonimmigrant visa for doctoral students in mathematics, engineering, technology, and the physical sciences. Enacting the bill would increase visa fees collected by the Department of Homeland Security (DHS) to adjudicate applications for the new visas and any subsequent applications by these students for permanent U.S. residence. Because DHS and other federal agencies are authorized to spend such fees without further appropriation, CBO estimates that the net impact on federal spending for implementing this provision would not be significant.

Title IV - Reforming Deemed Exports

Title IV would express the sense of the Senate that the use of technology by an institution of higher education in the United States should not be treated as an export of that technology for purposes of section 5 of the Export Administration Act of 1979. CBO estimates that this would have no impact on federal spending.

Title V- Strengthening Basic Research at the Department of Defense

Title would authorize the appropriation of \$1.6 billion in fiscal year 2007 and \$9.9 billion over the 2007-2011 period for the Department of Defense. CBO estimates that implementing these provisions would cost \$405 million in 2007 and \$7.2 million over the 2007-2011 period.

INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT

S. 2198 contains no intergovernmental or private-sector mandates as defined by UMRA. The bill would authorize grant funds that would benefit public institutions of higher education.

Any costs to those institutions or to state, local, or tribal governments would result from complying with conditions of federal assistance.

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