

## House Cuts NSF Budget by 2 Percent

### AAAS R&D Funding Update on R&D in FY 2005 NSF House Appropriations

#### Highlights

- **A House committee has proposed to cut the National Science Foundation (NSF) budget next year.** The House would award NSF a budget of \$5.5 billion in FY 2005, \$278 million less than the request and \$111 million or 2.0 percent below the current year (see Table). **Most research directorates would see their budgets decline.**

- The NSF budget of \$5.5 billion would be far short of the \$7.4 billion FY 2005 authorization signed into law 19 months ago as part of a plan to double the NSF budget in the five years to FY 2007.

- **NSF's R&D funding would total \$4.0 billion in FY 2005, a cut of 0.9 percent** (see Table).

- Major Research Equipment and Facilities Construction (MREFC) would be the only account to enjoy a sizeable increase, going from \$155 million to \$208 million for five large projects.

- The House would move funding for the **Math and Science Partnerships** back to its traditional home in Education and Human Resources (E.H.R) instead of the NSF proposal to move it to the Research and Related Activities (R&RA) account, but would cut its funding from \$140 million down to \$82.5 million.

- **The House cuts to the research directorates would cut deeply into NSF funding of competitively awarded research grants.** The total number of NSF research grants would fall, and the competition for them would get more difficult. NSF already expects to make awards to less than one in four applications this year, and the House appropriation would result in even tougher odds.

#### NSF R&D in FY 2005 House Appropriations

On July 22, the House Appropriations Committee drafted its version of an FY 2005 VA/HUD appropriations bill that would cut funding for the National Science Foundation (NSF) in FY 2005. The House bill would provide NSF with a total budget of \$5.5 billion in FY 2005, \$111 million or 2.0 percent below FY 2004. An NSF authorization bill calling for a doubling of the NSF budget between FY 2002 and FY 2007 was signed into law in December 2003, but the FY 2005 House appropriation would fall almost \$2 billion short of the \$7.4 billion authorized funding level for FY 2005. The House appropriation would also be the first cut in the NSF budget in nearly a decade. (For details of R&D in the FY 2005 request, please see Chapter 7 of *AAAS Report XXIX: R&D FY 2005* or the February 26 AAAS R&D Funding Update.)

The House FY 2005 VA-HUD bill would provide \$93 billion for discretionary programs, almost \$1 billion more than the President's request and \$2 billion more than this year's funding level. The bill funds science agencies including NSF, the National Aeronautics and Space Administration (NASA), the Environmental Protection Agency (EPA), and non-R&D programs for veterans and housing. Although the overall bill total would increase, the House would devote all the additional funds and then some to veterans and housing programs, complaining that the Administration request significantly underfunds these needs. The House is constrained from adding even more funds to the VA-HUD bill because both the House and Senate are working with a total of \$822 billion for all discretionary programs in FY 2005 that is \$1 billion lower than the President's request, necessitating difficult choices in funding priorities.

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An NSF authorization bill calling for a doubling of the NSF budget between FY 2002 and FY 2007 was signed into law in December 2002, but this year's NSF budget falls \$1 billion short of the authorized \$6.6 billion funding level for FY 2004. **The gap widens in the FY 2005 request to \$1.6 billion, the distance between the \$5.7 billion request and the \$7.4 billion authorized level. Now the House would widen the gap to \$1.9 billion, putting the NSF doubling goal well out of reach in these tough budgetary times.**

**NSF's R&D funding, which excludes NSF's education and training activities and overhead costs, would total \$4.0 billion in the House bill, a cut of 0.9 percent or \$39 million (see Table).**

The House would impose cuts on the **Research and Related Activities (R&RA)** account, which funds most of NSF's R&D. R&RA funding would fall \$100 million or 2.3 percent down to \$4.2 billion, \$221 million short of the modest requested increase. **The budgets of the research directorates would fall between 2 and 3 percent**, except for Social, Behavioral, and Economic (SBE) Sciences with a 5.3 percent increase and Polar Programs, which would increase the requested 2.2 percent (see Table).

The Integrative Activities (IA) account within R&RA would fall \$26 million to \$118 million. **The House would reject the Administration proposal to transfer the Math and Science Partnerships from Education and Human Resources (E.H.R.) to IA.** The House would keep the Partnerships in E.H.R. at a level of \$82.5 million, down substantially from \$139 million this year but \$2.5 million more than the request. The MSP program, run jointly by NSF and the Department of Education, encourages academic institutions and schools to work together to improve math and science education. The House would agree with the Bush Administration's desire to shift the emphasis of the program toward ED, even as it keeps the NSF share in E.H.R. The FY 2005 budget requested \$269 million for the Department of Education's (ED) share of the program, up dramatically from \$149 million this year; the House would go along with the ED request. Combined, the MSP programs would receive \$351.5 million in FY 2005 from the House, up from \$288 million this year. Elsewhere in the IA account, the House would agree to a requested cut in the Major Research Instrumentation (MRI) from \$109 million down to \$90 million. The MRI program awards competitive grants to universities and colleges to purchase scientific and engineering equipment and instrumentation to be used for research and training. To find savings within a tight budget, the House would not provide the requested \$30 million in start-up funds in IA for a new group of Science and Technology Centers, nor the requested \$5 million for a new Innovation Fund.

NSF's **Education and Human Resources (EHR)** programs would receive \$843 million, down more than 10 percent from this year. Most of the decline is due to the shift in **Math and Science Partnerships (MSP)** funding to the Department of Education. The FY 2005 House appropriation contains \$94 million for the Experimental Program to Stimulate Competitive Research (EPSCoR), the same level as year. EPSCoR assists research institutions and states that have traditionally been underrepresented in federal R&D funding to build research capacity. The program is currently open to 24 states, Puerto Rico, and the U.S. Virgin Islands.

**The one bright spot in the House bill would be NSF's support of R&D facilities.** There would be \$208 million for the **Major Research Equipment and Facilities Construction (MREFC)** account, up dramatically from \$155 million this year. The House would agree to two of the three proposed starts (the Scientific Ocean Drilling Vessel and Rare Symmetry Violating Processes (RSVP)), with the other proposed start (the National Ecological Observatory Network (NEON)) a casualty of tight budget constraints. The House bill would keep planning and design for NEON alive in the R&RA account at \$6 million in anticipation of future MREFC funding. The House would boost funding for the IceCube Neutrino Detector Observatory from \$42 million this year to \$51 million in FY 2005 in order to accelerate the timetable for this project at the South Pole.

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## NSF Funding Mechanisms

**The House-proposed cuts to the research directorates would seriously squeeze NSF funding of competitively awarded research grants. Even with the requested increase for NSF proposed by the Bush Administration in February, NSF estimated that the success rate for research grant applications would dip to 23 percent** in FY 2005, down one percentage point from the past few years. Among some directorates, the odds of success would be even lower. The Engineering directorate (ENG) expected to fund only 15 percent of its research grant applications, while Biological Sciences (BIO) would fund less than one in five (19 percent), both down one percentage point from this year. The House appropriation, if it becomes final, would almost certainly lead to far lower success rates.

Although the number of research grants awarded has been on a steady upward trend in recent years, **NSF expected in its request to fund only 6,145 research grants in FY 2005, down by 72 from this year's expected total; NSF research grants could dip below 6,000 if the House appropriation prevails.** Even with the requested increase, BIO and ENG expected large declines, and Mathematical and Physical Sciences (MPS) a small decline. The House appropriation would also jeopardize NSF plans to increase the average duration of a research grant from 2.9 years to 3.0 years.

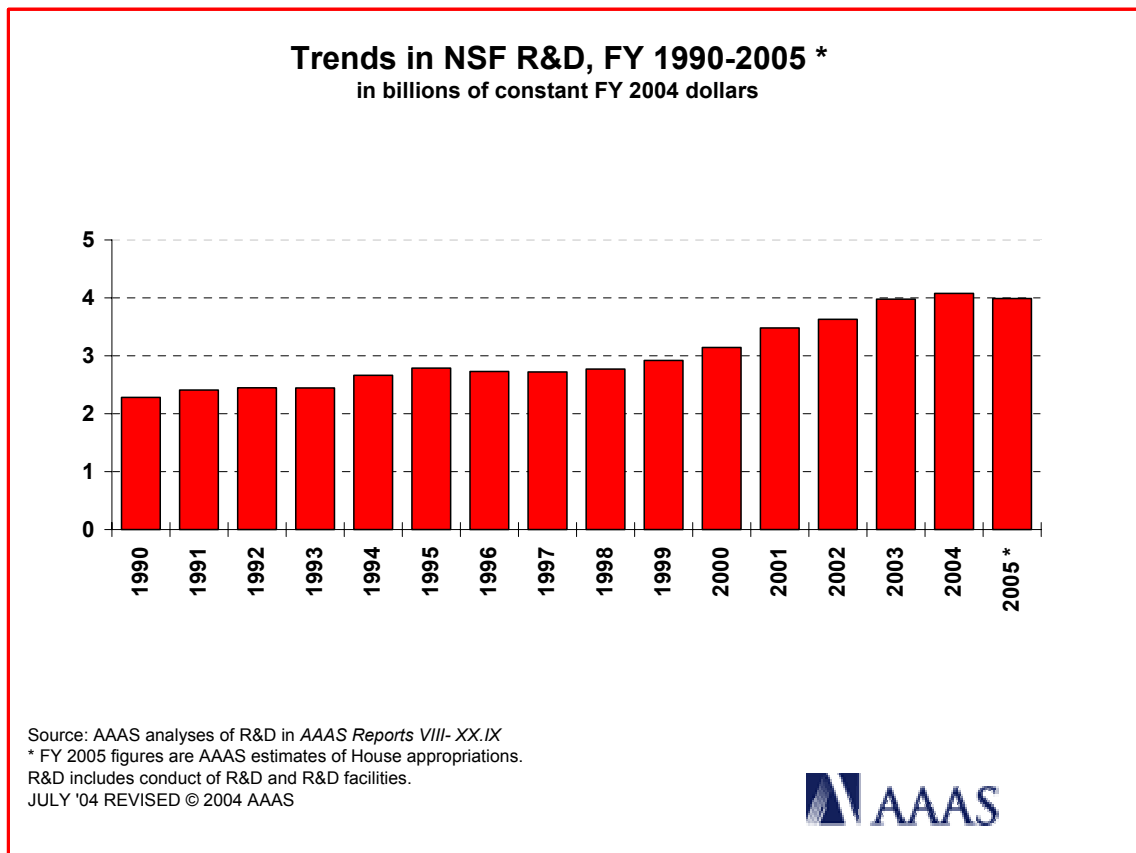


Figure 1. (click on the image to view or download a color, full-page PDF version of the chart)

## Outlook and Historical Trends

NSF has enjoyed mostly steady budget growth over the past 15 years, as shown in Figure 1. After declines in the mid-1990s in the push toward a balanced budget, growth resumed after FY 1998 and momentum began to build to double the NSF budget over five years, culminating in the NSF authorization bill of December 2002. But NSF budget growth slowed down to just ahead of the inflation rate in FY 2004, and would slow down further in the FY 2005 request and reverse in the House plan. As noted earlier, these

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smaller increases put the NSF budget further and further behind the authorized doubling path and have created downward pressures on NSF grant sizes and success rates. While there is strong political pressure for Congress to approve a budget more consistent with the authorized funding track, lawmakers have been stymied by tight restraints on overall domestic discretionary spending. In FY 2005, with overall domestic spending proposed to increase by just 0.5 percent, the restraints are even tighter.

**The House-proposed cuts for next year could be a taste of further cuts in the future.** With Congress and the President apparently committed to reducing the budget deficit in half within the next five years primarily through holding down domestic spending, the consequences for NSF are becoming clearer. The FY 2005 budget contains preliminary projections for the NSF budget out to FY 2009. **By FY 2009, the NSF budget would be \$5.7 billion**, still below the FY 2005 budget. **After adjusting for expected inflation, the five-year Bush budget would leave NSF's R&D investments 4.7 percent below this year's funding level in 2009.** **The House VA-HUD bill would take NSF well below even these budget projections.** (For more on the five-year projections for federal R&D, see the April 22 (revised May 7) AAAS Analysis of the Outyear Projections for R&D in the FY 2005 Budget.)

### Next Steps

The House VA-HUD bill's proposed cuts to NSF, NASA, and EPA look so steep, especially in an election year, that the bill may be rejected by the full House. If that looks likely, the House leadership may prevent the bill from reaching the House floor in September. The Senate, facing the same fiscal constraints, may not draft its VA-HUD bill at all. Thus, the bill is almost certain to be included in a year-end omnibus appropriations bill. There is already talk that funding for NSF and NASA will have to be boosted through the infusion of additional funds in a year-end budget deal. Where the additional funding might come from, however, is uncertain, and it is possible that these House-proposed funding levels could eventually prevail in the final FY 2005 appropriations package.

(This analysis is one of a series of AAAS R&D Funding Updates on the FY 2005 congressional appropriations process. This analysis includes information on R&D in House appropriations for the National Science Foundation. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D by agency in FY 2005 appropriations, is available on the AAAS R&D Web Site (<http://www.aaas.org/spp/rd>) in the "FY 2005 R&D" or the "What's New" sections.)

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Table. NSF R&amp;D in FY 2005 House Appropriations

**Table. National Science Foundation  
House Appropriations Committee Action on R&D in the FY 2005 Budget  
(budget authority in millions of dollars)**

	FY 2004 Estimate	FY 2005 Request	Action by House				
			FY 2005 House	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 2004 Amount	Chg. from FY 2004 Percent
Research and Related Activities <sup>1</sup> :							
Mathematical and Physical Sciences	1,092	1,116	<b>1,064</b>	-51	-4.6%	-27	-2.5%
Engineering	565	576	<b>549</b>	-27	-4.7%	-16	-2.9%
Biological Sciences	587	600	<b>573</b>	-27	-4.5%	-14	-2.4%
Geosciences	713	729	<b>696</b>	-33	-4.5%	-17	-2.4%
Computer and Info. Science and Eng.	605	618	<b>588</b>	-30	-4.9%	-17	-2.8%
Social, Behavioral and Econ. Scis.	204	225	<b>215</b>	-10	-4.5%	11	5.3%
US Polar Programs	342	350	<b>350</b>	0	0.0%	8	2.2%
Integrative Activities <sup>2</sup>	144	160	<b>118</b>	-42	-26.4%	-26	-18.3%
Total Research and Related Activities <sup>1</sup>	4,251	4,372	<b>4,152</b>	-221	-5.0%	-100	-2.3%
Major Research Equipment	155	213	<b>208</b>	-5	-2.4%	53	34.3%
Education and Human Resources R&D	137	132	<b>133</b>	1	0.8%	-5	-3.5%
Less Non-R&D in R&RA <sup>1</sup>	-467	-491	<b>-454</b>	37	-7.6%	13	-2.7%
<b>TOTAL NSF R&amp;D</b>	4,077	4,226	<b>4,038</b>	-187	-4.4%	-39	-0.9%
Non-R&D Programs and Activities:							
Non-R&D in R&RA <sup>1</sup>	467	491	<b>454</b>	-37	-7.6%	-13	-2.7%
Other Education and Human Res. <sup>2</sup>	802	720	<b>710</b>	-9	-1.3%	-91	-11.4%
( Total E.H.R. Budget ) <sup>2</sup>	939	851	<b>843</b>	-8	-1.0%	-96	-10.2%
Salaries and Expenses <sup>3</sup>	219	294	<b>250</b>	-44	-15.0%	31	14.3%
National Science Board	4	4	<b>4</b>	0	0.0%	0	1.8%
Inspector General	10	10	<b>10</b>	0	0.0%	0	1.7%
Total NSF Non-R&D Activities	1,501	1,519	<b>1,429</b>	-91	-6.0%	-72	-4.8%
<b>Total NSF Budget</b>	5,578	5,745	<b>5,467</b>	-278	-4.8%	-111	-2.0%

AAAS estimates based on FY 2005 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2004 and FY 2005 request figures based on OMB R&D data and supplemental agency budget data.

Figures are rounded to the nearest million. Changes calculated from unrounded figures.

<sup>1</sup> R&RA funds are not appropriated by directorate. The FY 2005 House directorate figures are AAAS estimates based on report language in the FY 2005 VA-HUD appropriations bill.

<sup>2</sup> The FY 2005 request proposes to move funding for the Math and Science Partnerships from E.H.R. to Integrative Activities in R&RA; the House would reject the proposal. The table keeps funding in E.H.R. for all years for comparability.

<sup>3</sup> The House would transfer \$26 million from R&RA and \$5.5 mil. from E.H.R. to Salaries and Expenses for administrative costs in FY 2005.

**July 23, 2004 - House Appropriations Committee-approved funding levels.**

**These funding levels may be amended or rejected by the full House.**