

## Senate Offers Modest Increase for NSF

### AAAS R&D Funding Update on R&D in Senate FY 2006 NSF Appropriations

#### Highlights

- **The National Science Foundation (NSF) budget, after declining in 2005, would barely increase by 1.1 percent to \$5.5 billion next year** in the latest Senate plan, falling short of the \$5.6 billion in the House and Administration proposals and even falling short of the \$5.6 billion NSF had last year.
- All of the FY 2006 proposals would fall far short of the \$8.5 billion authorized by law.
- While the Senate would add \$12 million to the request for Research and Related Activities and \$10 million for education programs, R&D facilities construction funding would fall far short of the request. **NSF's total R&D funding would increase just 1.6 percent to \$4.1 billion** (see Table), falling short of the 2.0 percent expected inflation rate.
- **Most NSF research directorates would receive increases between 1 and 3 percent in 2006 in the Senate plan** (see Table), which would barely bring their budgets back to last year's levels.
- Most of NSF's education and training programs would suffer steep cuts for the second year in a row under the House, Senate, and Administration plans.
- **The small increases for the research directorates would squeeze NSF funding of competitively awarded research grants.** NSF expects to make awards to just one in five applications this year.

#### NSF R&D in FY 2006 Senate Appropriations

On June 23, the Senate Appropriations Committee approved its version of the FY 2006 Commerce, Justice, and Science appropriations bill (HR 2862), following full House approval of its version a week earlier. **The Senate bill would give NSF a total budget of \$5.5 billion in FY 2006, barely an increase of 1.1 percent or \$58 million above this year and below last year's (2004) budget.** 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 the FY 2006 Senate appropriation would fall \$3 billion short of the \$8.5 billion authorized funding level for FY 2006. Both the House and the Bush Administration request found slightly more for NSF than the Senate with \$5.6 billion. (For details of R&D in the FY 2006 request, please see Chapter 7 of *AAAS Report XXX: R&D FY 2006* or the February 28 AAAS R&D Funding Update. For details of NSF R&D in House appropriations, see the June 14 R&D Funding Update.)

Because of an extensive reorganization of appropriations bill jurisdictions, in FY 2006 the NSF and the National Aeronautics and Space Administration (NASA) will be funded for the first time with the Departments of Commerce and Justice. NSF and NASA were formerly funded in the now defunct VA-HUD appropriations bill alongside the Departments of Veterans Affairs and Housing and Urban Development. As a result, the former Commerce, Justice, and State appropriations bill in the House now has "Science" in its name. The Senate version of the bill, however, has a different group of agencies: although Commerce, Justice, NASA, and NSF are still funded together in the Senate, the Senate bill excludes the Department of State. The differing jurisdictions in the House and the Senate bills will make agreeing on a final (conference) bill extremely difficult.

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 at a time when the federal budget had just come from four years of surpluses, but with the return of budget deficits NSF appropriations have fallen far short of authorized amounts (see Figure 1). The gap widens in the FY 2006 Senate appropriation to \$3 billion, the distance between the \$5.5 billion appropriation and the \$8.5 billion authorized level, putting the NSF doubling goal well out of reach in these tough budgetary times.

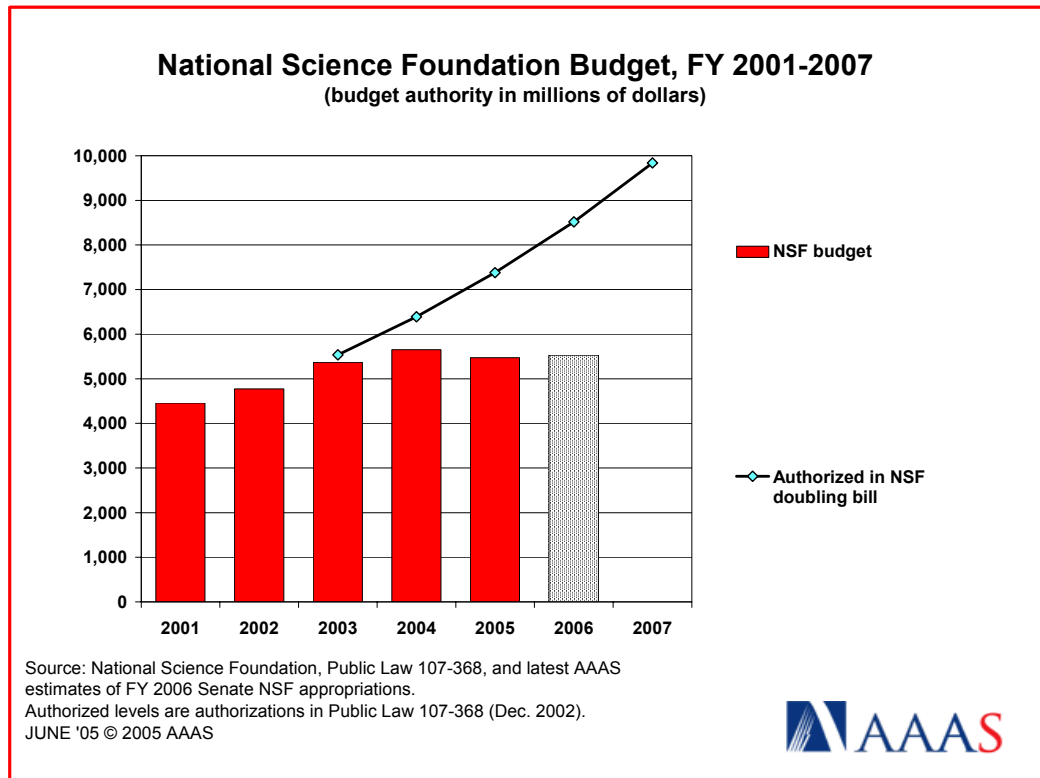


Figure 1. (click on the image for PDF)

**NSF's R&D funding, which excludes NSF's education and training activities and overhead costs, would total \$4.1 billion in the Senate bill, an increase of \$66 million or 1.6 percent that would bring NSF R&D funding back to the 2004 level after cuts in 2005 (see Table).** The House would provide a slightly larger 2.6 percent R&D increase.

In a sign of the extremely tight constraints on discretionary spending that Congress has agreed on, the Senate was able to add only \$12 million to the request for programs in the **Research and Related Activities (R&RA)** account, which funds most of NSF's R&D. R&RA funding would increase \$125 million or 3.0 percent over this year to \$4.3 billion, which should allow for increases between 1 and 3 percent for most of NSF's research directorates to bring funding just barely to 2004 levels after cuts in 2005, with no allowance for 2 years of inflation (see Table). Within the BIO directorate, the Senate would like NSF to provide \$100 million for the Plant Genome Research Program, up from \$94 million this year.

**The largest increase in R&RA would be a 12.4 percent boost to Polar Programs to \$387 million, but nearly all of the increase would fund a proposed transfer of \$48 million in non-R&D Coast Guard costs for icebreakers** to the NSF budget. Icebreaker ships necessary for research access to the Arctic and Antarctic have traditionally been funded by the Coast Guard, but in the FY 2006 budget request NSF would take over funding for these ships. So far, both the House and the Senate have agreed to this transfer in both the Coast Guard and NSF appropriations. Many in the polar research community are concerned about the financial implications of this transfer, partly for the extra costs in FY 2006 but mostly because of

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the far larger costs looming in the future to renovate or replace these aging icebreakers within a tight NSF budget. Although the budget envisions NSF paying the Coast Guard to keep operating these icebreakers, both the House and the Senate would give NSF the flexibility to make other arrangements if the Coast Guard is unable to do so next year or in future years.

**The Senate would join the House in trimming the request for Major Research Equipment and Facilities Construction (MREFC) account, but would still provide a \$20 million boost over the current funding level.** The \$193 million MREFC appropriation would be an 11.3 percent increase. Both chambers have now agreed with the NSF proposal to have no new starts in FY 2006, and would fund four out of the five existing projects. While both Commerce-Justice-Science bills would provide funding close to the request for the Scientific Ocean Drilling Vessel, the Atacama Large Millimeter Array, EarthScope, and the IceCube Neutrino Observatory projects, neither would fund the Rare Symmetry Violating Processes (RSVP) project in protest over escalating cost estimates for the project.

**The Senate would do little to reverse steep proposed cuts in NSF's education programs.** NSF proposed an **Education and Human Resources (EHR)** budget of just \$737 million, down a dramatic \$104 million from this year after an identical cut in the 2005 budget. The House would add back \$70 million for a budget of \$807 million, still 4.1 percent below FY 2005, but the Senate's \$10 million addition would leave the EHR budget down 11 percent. Although the Senate protests the Bush Administration's efforts to transition the Math and Science Partnerships (MSP) program from a joint Department of Education-NSF program to an Education-only one, the Senate appropriation would only provide \$64 million for NSF's MSP program, less than half the \$139 million NSF received last year. (The Senate has not yet acted on the Education MSP program.) Only the Experimental Program to Stimulate Competitive Research (EPSCoR) program would increase in the Senate plan, to \$100 million. 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. Other education programs would decline dramatically.

### **NSF Funding Mechanisms**

**The small increases for the research directorates in the Senate appropriation would squeeze NSF funding of competitively awarded research grants. The success rate for NSF research grant applications would be 21 percent** in FY 2006 in the request, essentially unchanged from 2005 and 2004. The small boost over the request in the Senate R&RA appropriation would do little to alter this projection. ENG expects to fund only 18 percent of its research grant applications, while CISE would fund 16 percent; both directorates' success rates would be up from just 15 percent last year and this year.

### **Next Steps and Possible Impacts**

NSF has enjoyed mostly steady budget growth over the past several decades, as shown in Figure 2, but in recent times NSF's budget has stagnated and even declined. 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 budget over five years, culminating in the NSF authorization bill of December 2002. But when the budget surplus years of 1998-2001 were followed by the current string of budget deficits, budget growth slowed down to just ahead of the inflation rate in FY 2004 and reversed with FY 2005 budget cuts. The FY 2006 Senate appropriation would fail to keep pace with inflation, and would bring NSF R&D below the 2003 funding level in inflation-adjusted dollars. As noted earlier, these smaller increases or cuts in recent years have put the NSF budget further and further behind the authorized doubling path and have created downward pressures on NSF grant sizes and success rates.

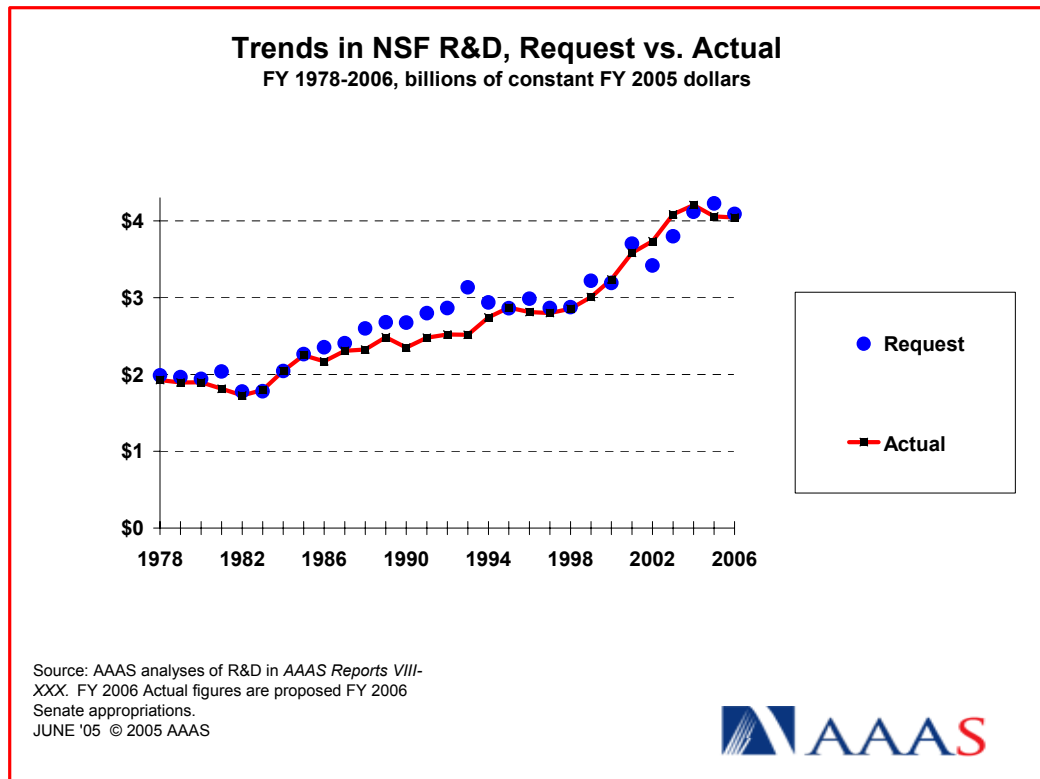


Figure 2. (click on the image for PDF)

The Senate is expected to debate and approve the Commerce, Justice, and Science appropriations bill in July. Because the House-approved version of the bill includes the Department of State, which the Senate would fund in another appropriations bill entirely, the House-Senate conference to resolve differences is expected to be extremely difficult and may not conclude until the fall.

(This analysis is one of a series of AAAS R&D Funding Updates on FY 2006 congressional appropriations. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D in FY 2006 appropriations, is available on the AAAS R&D Web Site (<http://www.aaas.org/spp/rd>) in the "FY 2006 R&D" or the "What's New" sections.)

- June 29, 2005  
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Table. NSF R&amp;D in FY 2006 Senate Appropriations

**Table. National Science Foundation  
Senate Appropriations Committee Action on R&D in the FY 2006 Budget  
(budget authority in millions of dollars)**

	FY 2005 Estimate	FY 2006 Request	FY 2006 House	FY 2006 Senate	Senate Action		Chg. from FY 2005		
					Chg. from Request Amount	Percent	Amount	Percent	
Research and Related Activities (R&RA) 1/ :									
Mathematical and Physical Sciences	1,070	1,086	1,097	<b>1,089</b>	3	0.3%	20	1.8%	
Engineering	561	581	587	<b>582</b>	2	0.3%	21	3.8%	
Biological Sciences	577	582	588	<b>584</b>	2	0.3%	7	1.2%	
Geosciences	694	709	716	<b>711</b>	2	0.3%	17	2.5%	
Computer and Info. Science and Eng.	614	621	627	<b>622</b>	2	0.3%	9	1.4%	
Social, Behavioral and Econ. Scis.	197	199	201	<b>199</b>	1	0.3%	2	1.3%	
International Programs	34	35	35	<b>35</b>	0	0.3%	1	2.6%	
US Polar Programs 2/	344	387	391	<b>387</b>	0	0.0%	43	12.4%	
Integrative Activities	130	135	136	<b>135</b>	0	0.3%	5	4.1%	
Total R&RA 1/	4,221	4,333	4,378	<b>4,345</b>	12	0.3%	125	3.0%	
Major Research Equipment	174	250	193	<b>193</b>	-57	-22.7%	20	11.3%	
Education and Human Resources R&D	140	115	126	<b>115</b>	0	0.0%	-25	-17.9%	
Less Non-R&D in R&RA 1/	-477	-529	-534	<b>-530</b>	-1	0.2%	-53	11.1%	
<b>TOTAL NSF R&amp;D</b>	4,057	4,170	4,163	<b>4,124</b>	-46	-1.1%	66	1.6%	
Non-R&D Programs and Activities:									
Non-R&D in R&RA 1/	477	529	534	<b>530</b>	1	0.2%	53	11.1%	
Other Education and Human Res.	701	622	681	<b>632</b>	10	1.6%	-69	-9.9%	
( Total E.H.R. Budget )	841	737	807	<b>747</b>	10	1.4%	-94	-11.2%	
Salaries and Expenses	223	269	250	<b>230</b>	-39	-14.5%	7	3.0%	
National Science Board	4	4	4	<b>4</b>	0	0.0%	0	0.8%	
Inspector General	10	12	12	<b>12</b>	0	0.0%	1	14.7%	
Total NSF Non-R&D Activities	1,416	1,435	1,480	<b>1,407</b>	-28	-1.9%	-8	-0.6%	
<b>Total NSF Budget</b>	5,473	5,605	5,643	<b>5,531</b>	-74	-1.3%	58	1.1%	

AAAS estimates based on FY 2006 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2005 and FY 2006 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.

1 R&RA funds are not appropriated by directorate. The FY 2006 House and Senate directorate figures are AAAS estimates based on report language in FY 2006 appropriations bills.

2 FY 2006 Request, House, and Senate figures include transfer of polar icebreakers costs from the Coast Guard.

**June 28, 2005 - AAAS estimates of Senate Appropriations Committee-approved bills.**

**These figures may be amended or rejected by the full Senate.**