

## NIST Labs Surge but Other Programs Fall in 2008

### AAAS R&D Funding Update on R&D in the FY 2008 Commerce Budget

(This analysis is a preview of the Commerce section in the forthcoming *AAAS Report XXXII: Research and Development FY 2008*, a comprehensive look at the President's budget for R&D in FY 2008. This analysis contains revised AAAS estimates of Department of Commerce R&D, different from figures originally presented in the President's budget. More tables and continually updated supplemental materials on R&D in the FY 2008 budget can be found on the AAAS R&D Web site at <http://www.aaas.org/spp/rd>.)

(This analysis is preliminary and will be revised after detailed National Oceanic and Atmospheric Administration (NOAA) data become available)

#### Highlights

- **The intramural research activities of the National Institute of Standards and Technology (NIST) would be favored with substantial proposed increases in the 2008 budget** in the second year of the President's American Competitiveness Initiative. NIST's Scientific and Technical Research Services (STRS) would see its R&D funding increase 12.8 percent to \$420 million, while intramural Construction of Research Facilities (CRF) R&D would jump 60 percent to \$94 million after similar increases in 2007.

- **But proposed cuts in other Commerce R&D programs would more than offset the proposed gains.** Total Commerce R&D would fall 2.7 percent to \$1.1 billion (see Table II-14).

- Once again, **the Bush Administration proposes to eliminate NIST's external Advanced Technology Program (ATP).** The proposed budget would also slash the non-R&D Hollings Manufacturing Extension Partnership (MEP) program to less than half current funding levels. Congress just rejected both of these proposals in the recently finalized 2007 budget.

- **R&D in the National Oceanic and Atmospheric Administration (NOAA) would fall sharply by \$57 million or 9.5 percent** down to \$544 million (see Table II-14) from a 2007 total just finalized by Congress with an unexpected funding boost.

#### Commerce R&D in the FY 2008 Budget

President Bush's proposed FY 2008 budget continues substantial increases for key physical sciences research agencies as part of an "American Competitiveness Initiative" (ACI) that was first previewed in the 2006 State of the Union address in response to a growing wave of concern about the state of U.S. innovation. The ACI proposes to double funding for three key physical sciences agencies over the next decade, and after a mostly approved first installment in 2007 the 2008 budget continues to move forward with this ambitious plan. The National Institute of Standards and Technology (NIST) in the Department of Commerce is one of the three favored agencies (the others are the DOE Office of Science, and the National Science Foundation), and received a substantial increase in the 2007 budget and another large increase in 2008 after years of flat or declining funding.

The increases would go only to NIST's intramural laboratories and intramural construction, and would be offset by steep cuts in NIST's external programs. Commerce's other main R&D agency, the National Oceanic and Atmospheric Administration (NOAA) whose portfolio is oriented toward environmental R&D

rather than the physical sciences, would be in line for R&D funding cuts like most domestic programs in the declining overall domestic budget. **Total Commerce R&D would fall 2.7 percent or \$30 million to \$1.1 billion** (see Table II-14), with cuts in NOAA R&D and NIST external R&D offsetting large proposed increases for NIST's intramural portfolio.

The NIST laboratories in Maryland and Colorado would once again be favored in the 2008 R&D budget as part of the ACI. NIST intramural research would climb 12.8 percent to \$420 million within the Scientific and Technical Research and Services (STRS) account, while construction funding for NIST research facilities would jump 60 percent to \$94 million. The large proposed increases would allow for more of everything: there would be increases for R&D across the broad range of NIST programs, with particular emphasis on nanotechnology research, quantum information science, measurements and standards for climate change science, and disaster resilient structures. On the construction side, the large increase would allow for major renovations at NIST's Boulder (CO) site, repair for aging facilities, and continuing construction of NIST's Center for Neutron Research.

But once again, the increased investments for the NIST laboratories would be offset by cuts in other NIST programs, even though they all support the physical sciences and related research. **The Bush Administration once again proposes to eliminate NIST's extramural Advanced Technology Program (ATP)**, as it has in the past several budget requests. The ATP just won a total budget of \$79 million in FY 2007 in the recently finalized 2007 budget, after being on the verge of elimination for most of last year. The unexpected reprieve means that the ATP will be able to award new grants in 2007 for the first time in years. Congress has repeatedly saved the program from termination, and will be asked to do so again in the 2008 appropriations process. In another repeat of previous requests, the budget would cut the non-R&D Hollings Manufacturing Extension Partnership (MEP) by 56 percent down to \$46 million; an identical proposal was rejected in the 2007 appropriation. MEP is a program to operate a nationwide network of extension centers to disseminate better manufacturing technologies to small- and medium-sized manufacturers on a cost-shared basis with state governments and with users. The \$105 million current budget for MEP is in line with historical trends; the request would phase out the federal contribution to this federal-state partnership and leave MEP center funding heavily in state hands, a move that Congress has strongly resisted in past budgets.

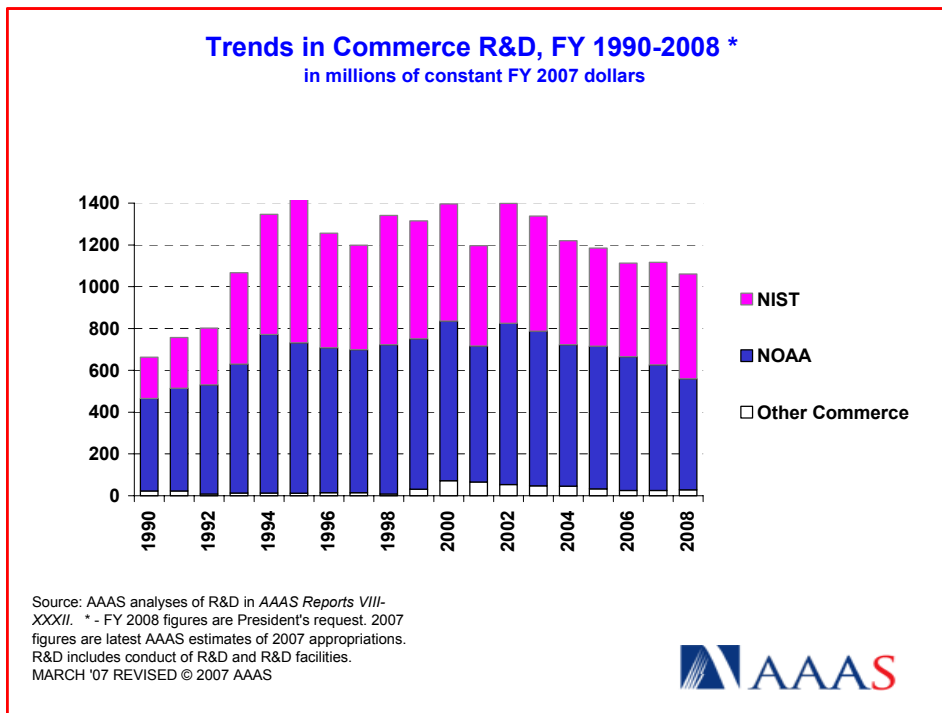


Figure 1. (click on the image for PDF)

The cuts to NIST's external programs leave the total NIST budget down \$34 million to \$641 million. Because the budget cuts affect the non-R&D MEP in the 2008 budget to balance out the large increases proposed for intramural R&D, total NIST R&D would increase 4.7 percent to \$514 million.

**National Oceanic and Atmospheric Administration (NOAA) R&D would fall \$57 million or 9.5 percent down to \$544 million** based on preliminary figures (see Table II-14). (These NOAA data are preliminary, and will be revised shortly to reflect more detailed NOAA data on R&D in the budget.)

### Impacts of Commerce R&D

Despite the good news for NIST's laboratories, a broader look at all Commerce R&D investments shows that the 2008 budget would continue a steady fall in Commerce R&D for most of this decade (see Figure 1). Since 2002, the Commerce R&D budget has declined in real terms every year, and would fall 24 percent below the 2002 funding level. Both NOAA and NIST have lost ground over the last several years.

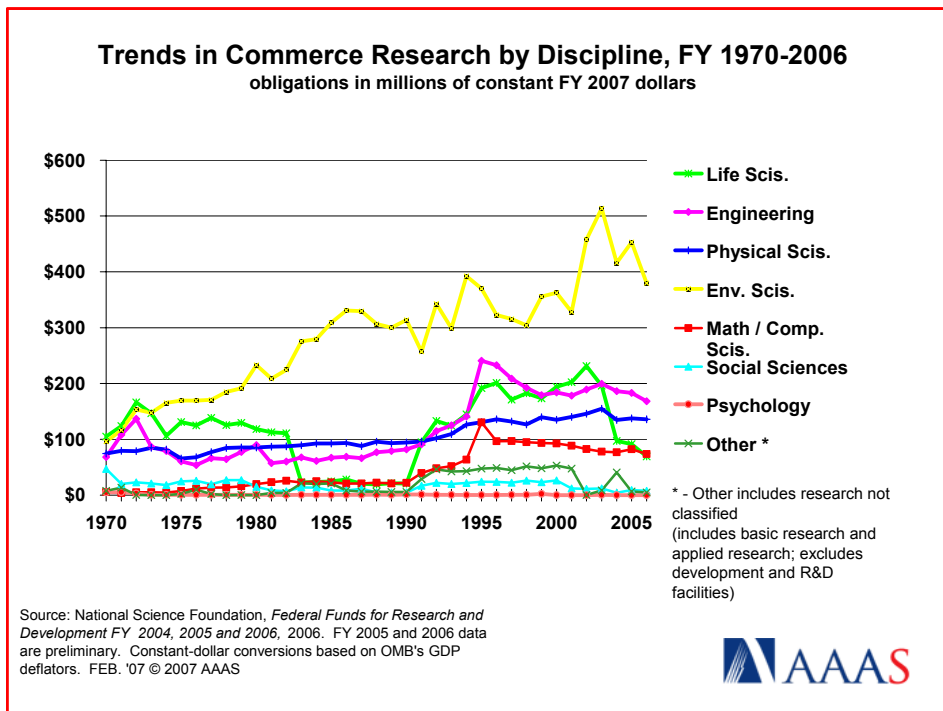


Figure 2. (click on the image for PDF)

The differing missions of NOAA and NIST mean that Commerce has a diverse research portfolio in terms of science and engineering disciplines. NOAA funds environmental sciences and life sciences research related to its oceanic and atmospheric missions, which are not favored in the ACI, while NIST funds more ACI-relevant engineering, physical sciences, mathematics, and computer sciences research. Although Commerce is not the leading funding source for any of the science and engineering disciplines, the department does provide key support for specific areas in oceanography, atmospheric sciences, standards research, measurement technologies, and physics most closely related to NIST and NOAA missions. Commerce funding for all of these disciplines has declined in recent years because of the downward trends in overall Commerce R&D funding (see Figure 2). Once the NIST 2007 and 2008 increases are spent, there may be an upswing in Commerce support for the physical sciences, engineering, and computer sciences.

Commerce R&D is highly concentrated geographically: fully half of Commerce's R&D is performed in Maryland and Colorado, where NIST's laboratories are located along with NOAA headquarters in Maryland and a major NOAA laboratory in Colorado. California and Washington also receive large

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portions because of the presence of several NOAA laboratories. Almost 80 percent of all Commerce R&D is performed in the department's own laboratories, while universities receive 18 percent of the total R&D portfolio, mostly from NOAA.

### **Outlook for the Commerce Budget**

Because the American Competitiveness Initiative continues to be a high priority in the 2008 budget, NIST would receive an increase even as most other domestic agencies face cuts within a declining domestic budget. The new Democratic majority in Congress has already demonstrated its strong support for both NIST and NOAA programs by boosting spending for both agencies in the recently finalized 2007 appropriations, trimming the request for NIST laboratory programs somewhat but restoring funding for the ATP and adding millions to requested cuts at NOAA. It is likely that the same appropriators will follow the same course in 2008 appropriations.

(More materials on R&D in the FY 2008 budget, historical data and charts, and more information on *AAAS Report XXXII: Research and Development FY 2008*, can be found on the AAAS R&D Web site at <http://www.aaas.org/spp/rd>.)

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AAAS R&D Budget and Policy Program

(202) 326-6607

AAAS R&D Web site: <http://www.aaas.org/spp/rd>



Table II-14. Department of Commerce R&D

**Table II-14.** R&D in the Department of Commerce  
(budget authority in millions of dollars)

	FY 2006 Actual	FY 2007 Estimate *	FY 2008 Budget	Change FY 07-08 Amount    Percent	
National Oceanic and Atmospheric Administration (NOAA - Non R&D excluded)					
<b>Total NOAA R&amp;D</b>	624	601	<b>544</b>	-57	-9.5%
National Institute of Standards and Technology (NIST - Non-R&D components excluded)					
Scientific & Technical Research	328	372	<b>420</b>	47	12.8%
Advanced Tech. Program R&D	60	60	<b>0</b>	-60	-100.0%
Construction of Res. Facils. 1/	48	59	<b>94</b>	35	60.0%
<b>Total NIST R&amp;D</b>	436	491	<b>514</b>	23	4.7%
<i>STRS Non-R&amp;D Activities</i>	66	60	<b>81</b>	20	33.6%
<i>ATP Non-R&amp;D Activities</i>	19	19	<b>0</b>	-19	-100.0%
<i>Non-R&amp;D Construction</i>	125	0	<b>0</b>	0	- -
<i>Manuf. Extens. Partnership</i>	105	105	<b>46</b>	-58	-55.7%
<i>Total NIST Budget</i>	752	675	<b>641</b>	-34	-5.1%
Dept. Administration	1	1	<b>1</b>	0	0.0%
Nat'l Telecomm. & Info. Admin.	2	2	<b>2</b>	0	0.0%
Bureau of the Census	22	22	<b>26</b>	4	18.2%
<b>Total Commerce R&amp;D</b>	1,085	1,117	<b>1,087</b>	-30	-2.7%

Source: OMB data for R&D, NOAA and NIST R&D documents, and agency documents.

1/ Excludes congressional earmarks of \$125 mil. (2006).

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

**Please see Chapter 13 for a discussion of Commerce R&D.**

**March 8, 2007 - revised**

**\* FY 2007 figures reflect estimates of final 2007 appropriations (P.L. 110-5).**