

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.

NIST intramural research, performed in NIST facilities in Maryland and Colorado, would climb 16.1 percent to \$447 million within the Scientific and Technical Research and Services (STRS) account. Construction funding for NIST research facilities appears to fall, but subtracting \$30 million in 2008 funding that would go to extramural construction outside of NIST results a \$20 million increase in NIST construction from \$69 million to \$99 million in 2009. The large proposed increase for intramural research would start new initiatives in nanotechnology for environmental health and safety measurements, biosciences measurements and standards, cybersecurity, and optical communications and computing. The increase would also allow for expansion and improvements for the NIST Center for Neutron Research, and augmented current NIST efforts in areas such as astrophysics research, quantum information science, climate change measurements and standards, metrology, and measurement science. The \$99 million construction request would include funding for operational maintenance and repair of NIST facilities and three new initiatives, including a \$44 million extension of state-of-the-art laboratory space at NIST's Building 1 in Boulder, CO. Congress added \$50 million in 2008 to the normally intramural construction account specifically for new extramural laboratory facilities grants, to be awarded on a competitive basis to universities and other nonprofit research institutions performing R&D related to NIST activities. There would also be \$51 million in the construction account for non-R&D extramural earmarked projects for specific performers, bringing total Construction funding to \$160 million in 2008, but the 2009 request would eliminate external spending to concentrate on intramural construction.

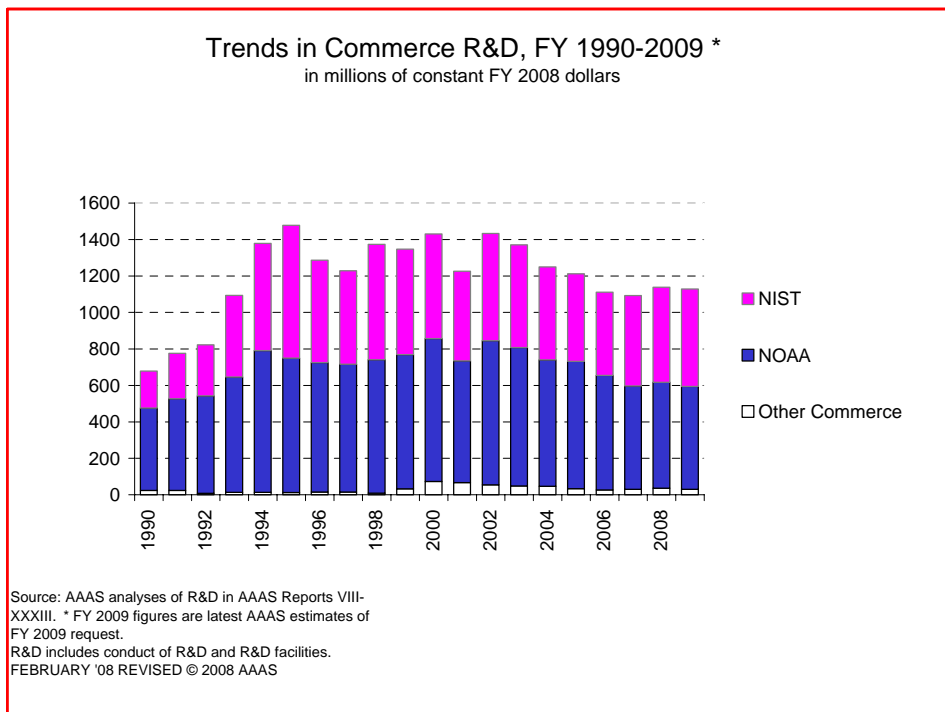


Figure 1. (click on the image for PDF)

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 Technology Innovation Program (TIP), as it has in the past several budget requests. The TIP was formerly the Advanced Technology Program (ATP) but was restructured, authorized, and renamed the Technology Innovation Program (TIP) in the August 2007 America COMPETES; the TIP received a 2008 appropriation of \$46 million, down 40 percent from the previous year but the 2009 request would bring funding down to zero. The 2009 request would also eliminate the R&D-Hollings Manufacturing Extension Partnership

(MEP) with \$4 million just for close-out costs instead of the roughly \$100 million annual appropriations of recent years. 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. Commerce has repeatedly saved these programs from elimination, and will try to do so again in the 2009 appropriations season.

The proposed cuts to NIST's external programs would leave the total NIST budget down \$99 million to \$638 million. But total NIST R&D would increase 4.7 percent to \$546 million.

National Oceanic and Atmospheric Administration (NOAA) R&D would fall \$5 million or 0.9 percent down to \$576 million based on preliminary data (see Table II-14). Within Oceanic and Atmospheric Research (OAR), the Climate Research program would increase by \$3 million to \$195 million, with increases for the competitive research program partially offset by cuts in earmarks and intramural programs. The National Sea Grant College Program would see its funding decline \$2 million down to \$55 million, and the National Undersea Research Program (NURP) would be merged with the Ocean Exploration and Research program and a funding level of \$28 million, down slightly from 2008.

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 2009 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 except 2008, and would fall 21 percent below the 2002 funding level if the 2009 request is enacted as is. Both NOAA and NIST have lost ground over the last several years, although NIST has begun to rebound thanks to the ACI.

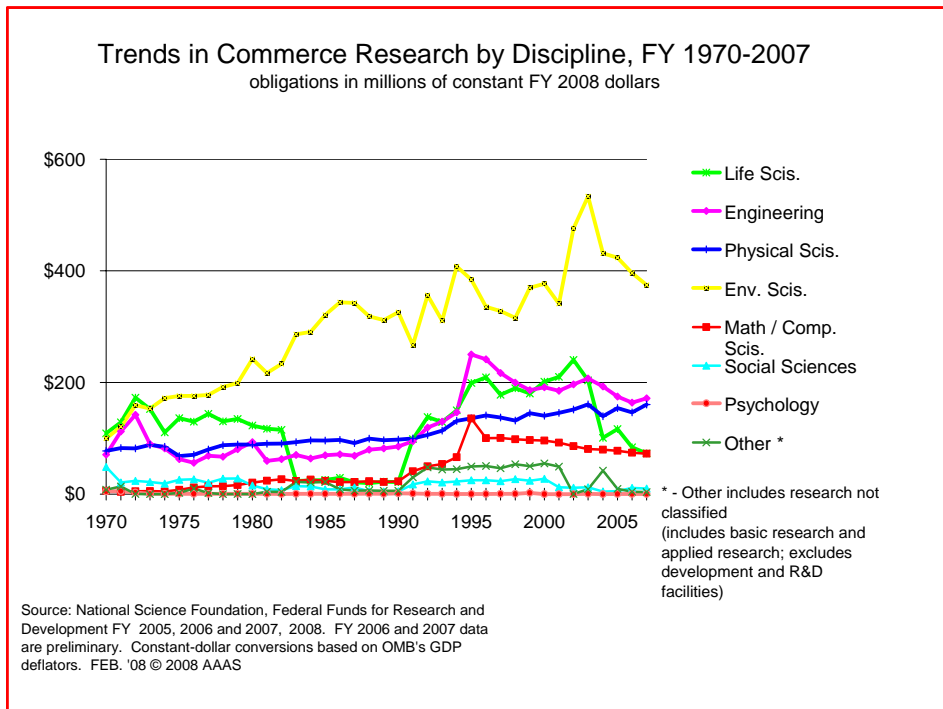


Figure 2. (click on the image for PDF)

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 and if the 2009 request makes it through Congress, there should be an upswing in Commerce support for the physical sciences, engineering, and computer sciences.

Commerce R&D is highly concentrated geographically: more than 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 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 19 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 2009 budget, NIST would receive an increase even within an extremely tight domestic budget. The Democratic Congress has already demonstrated its strong support for both NIST and NOAA programs by boosting spending for both agencies in the 2007 and 2008 appropriations, trimming the request for NIST laboratory programs somewhat but restoring funding for the ATP/TIP and adding millions to requested cuts at NOAA. It is likely that the same appropriations will follow the same course in 2009 appropriations.

(More materials on R&D in the FY 2009 budget, historical data and charts, and more information on *Report XXXIII: Research and Development FY 2009*, can be found on the AAAS R&D Web site at <http://www.aaas.org/spp/rd>.)

- March 10, 2008 (revised March 21)
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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 2007 Actual	FY 2008 Estimate	FY 2009 Budget	Change FY 08-09 Amount Percent	
National Oceanic and Atmospheric Administration (NOAA - Non R&D excluded)					
National Ocean Service	56	58	58	-1	-0.9%
Nat'l Marine Fisheries Srv.	50	52	52	0	-0.9%
Oceanic and Atmos. Res.	279	291	288	-3	-0.9%
National Weather Service	22	23	23	0	-0.9%
Nat'l Env. Satellite & Data Info	28	29	29	0	-0.9%
Program Support	123	128	127	-1	-0.9%
Total NOAA R&D	557	581	576	-5	-0.9%
National Institute of Standards and Technology (NIST - Non-R&D components excluded)					
Scientific & Technical Research	376	385	447	62	16.1%
Tech. Innovation Prog. R&D 1/	52	27	0	-27	-100.0%
Construction of Res. Facils. 2/	59	109	99	-10	-9.3%
Total NIST R&D	487	521	546	25	4.7%
<i>STRS Non-R&D Activities</i>	<i>58</i>	<i>55</i>	<i>88</i>	<i>33</i>	<i>58.7%</i>
<i>TIP Non-R&D Activities</i>	<i>27</i>	<i>19</i>	<i>0</i>	<i>-19</i>	<i>-100.0%</i>
<i>Non-R&D Construction</i>	<i>0</i>	<i>51</i>	<i>0</i>	<i>-51</i>	<i>-100.0%</i>
<i>Manuf. Extens. Partnership</i>	<i>105</i>	<i>90</i>	<i>4</i>	<i>-86</i>	<i>-95.5%</i>
<i>Total NIST Budget</i>	<i>677</i>	<i>737</i>	<i>638</i>	<i>-99</i>	<i>-13.4%</i>
Nat'l Telecomm. & Info. Admin.	7	7	2	-5	-71.4%
Bureau of the Census	22	29	28	-1	-3.4%
Total Commerce R&D	1,073	1,138	1,152	14	1.2%

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

1/ Formerly the Advanced Technology Program. FY 08 includes rescission.

2/ Excludes congressional earmarks of \$51 mil. (2008).

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

Please see Chapter 12 for a discussion of Commerce R&D.

February 27, 2008 - revised