

Senate Adds to NIH Request and Provides \$29.1 Billion Total

AAAS R&D Funding Update on R&D in FY 2005 NIH Senate Appropriations

Highlights

- **The Senate would add \$373 million to the FY 2005 request and House appropriation for the National Institutes of Health (NIH)** for a total NIH budget of \$29.1 billion, a 3.9 percent or \$1.1 billion increase (see Table 1).
- **The Senate would allow most NIH institutes to receive increases between 3.4 percent and 4.6 percent**, a percentage point more than the requested and House increases for the institutes.
- **NIH research (basic and applied) would increase 3.3 percent** to \$27.9 billion, far below the growth rates of the past six years.
- **The additional Senate funds would fall short of the amounts necessary to change NIH estimates that the total number of NIH Research Project Grants (RPGs) would barely increase next year by 1.4 percent;** the number of new grants would rise slightly, but only back to last year's level after falling this year. The RPG proposal success rate would fall to 27 percent in 2004 and stay there in 2005, down from 30 percent last year. The additional Senate funds could, however, let the average grant size rise 2 percent, above the 1 percent allowed for in the request and House appropriation but still below the 3.5 percent expected inflation rate for biomedical research.
- The Senate report accompanying the bill does not contain language found in the House version of the bill urging NIH to make scientific journal articles resulting from NIH-funded research publicly available. In response to the House, NIH has begun to formulate a new policy for public access to journal articles.
- R&D in the Department of Health and Human Services (HHS) would rise 4.4 percent to \$29.7 billion. Both the House and the Senate would boost R&D substantially in the Food and Drug Administration (FDA) and the Office of the HHS Secretary for biodefense (see Table 2).

NIH R&D in FY 2005 Senate Appropriations

On September 15, the Senate Appropriations Committee released its version of the Labor-HHS appropriations bill (S 2810) that would give \$29.1 billion to the National Institutes of Health (NIH) in FY 2005. Earlier, on September 9, the House approved its version of the bill providing \$28.8 billion, exactly matching NIH's request. The Senate bill would add \$373 million to the House and the request, allowing NIH to receive a \$1.1 billion or 3.9 percent increase over this year's budget (see Table). NIH classifies 97 percent of its budget as R&D, including R&D facilities (the remainder is for overhead costs and research training). The Senate plan would provide \$28.3 billion for NIH R&D, also a 3.9 percent increase over this year. (For details of the NIH request, see Chapter 8 of *AAAS Report XXIX: R&D FY 2005* or the February 20 AAAS R&D Funding Update. For details of the House appropriation, see the July 28 AAAS R&D Funding Update).

NIH and the NIH community are adjusting to diminished expectations after years of favored treatment. After a completed five-year doubling campaign involving 15 percent increases for each of the five years between 1998 and 2003 (see Figure 1), biomedical researchers hoped for a 'soft landing' in following years, or a gradual easing into slower growth rates. Instead, growth has slowed dramatically. NIH enjoyed steady budget growth over the past several decades, as shown in Figure 1, but growth accelerated sharply

after FY 1998 and continued to FY 2003 during the five-year NIH doubling campaign. But then growth slowed down to just ahead of the inflation rate in FY 2004, and would slow down some more in FY 2005 in the NIH request and the House plan. Even the Senate increase would fall short of recent increases.

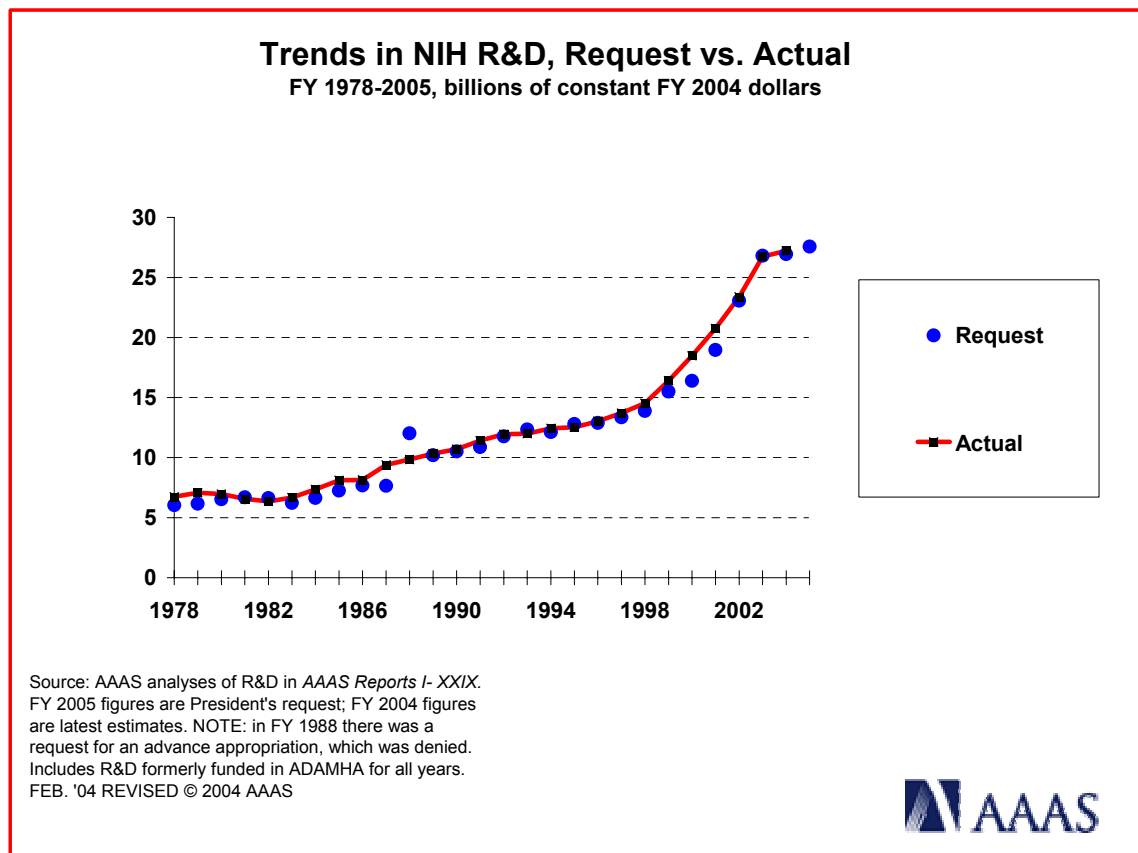


Figure 1. (click on the image to view or download a full-page color PDF version of the chart)

Most NIH institutes would receive increases in a range between 3.4 and 4.6 percent within the tight overall funding environment (see Table 1). There would be no clear favorites, unlike the past two years when biodefense research, mostly in the National Institute of Allergy and Infectious Diseases (NIAID), was heavily favored. While the House exactly matched the request, the Senate would add \$373 million to the request, giving most institutes an additional 1 percentage point increase over the request.

The majority of NIH's budget is distributed to external performers through Research Project Grants (RPGs), which are investigator initiated, peer reviewed, and competitively awarded (see Figure 2). **The House appropriation and the request would allow RPG funding to increase by 2.7 percent** in FY 2005 to reach \$14.9 billion. These funds would support a record 37,744 RPGs, an increase of 515 awards over FY 2004 (up 1.4 percent; see Figure 2). Because RPGs are multi-year grants, the number of new grants initiated in FY 2005 would be far smaller. In FY 2005, the number of new grants would rise slightly to 10,393, but only back to the FY 2003 level after falling this year. The Senate appropriation would not alter these estimates significantly.

The success rate for new grant applications would dip to 27 percent in FY 2004 and would stay there in FY 2005, down from a high of 32 percent in FY 2001 (see Figure 2) and the lowest since FY 1995 because of recent surges in the number of applications outpacing the number of grants awarded. Although the number of RPGs has increased from 25,000 in the early '90s to more than 35,000 (see Figure 2), the

number of grant applications has increased so fast that the success rate is now well below the success rates of the NIH doubling period 1998-2003 when they exceeded 30 percent.

The House and Senate plans would result in nearly every institute funding a smaller percentage of proposals in FY 2005 than in the past, despite the recent doubling of the NIH budget. Expected success rates vary by institute, each of which conducts its own grant solicitation process, from a low of 15 percent (NIBIB) to a not-so-high rate of 33 percent (NHLBI and NIDDK). Among the largest institutes, the National Cancer Institute (NCI) expects a success rate of just one in four applications (24 percent), down steadily from 33 percent in 1998 before the doubling campaign. The National Heart, Lung and Blood Institute (NHLBI)'s 33 percent success rate may be high among the institutes in FY 2005, but would be down from 36 percent three years ago. Even the National Institute of Allergy and Infectious Diseases (NIAID), whose budget has grown the most dramatically recently, has seen the pool of applications grow even faster so that its 27 percent expected success rate in FY 2005 would represent a steady downward trend from 43 percent in 1997, again before the NIH doubling campaign. **In fact, every NIH institute (except NIEHS) would have a lower success rate in FY 2005 than in at least one of the years just before the NIH doubling campaign.**

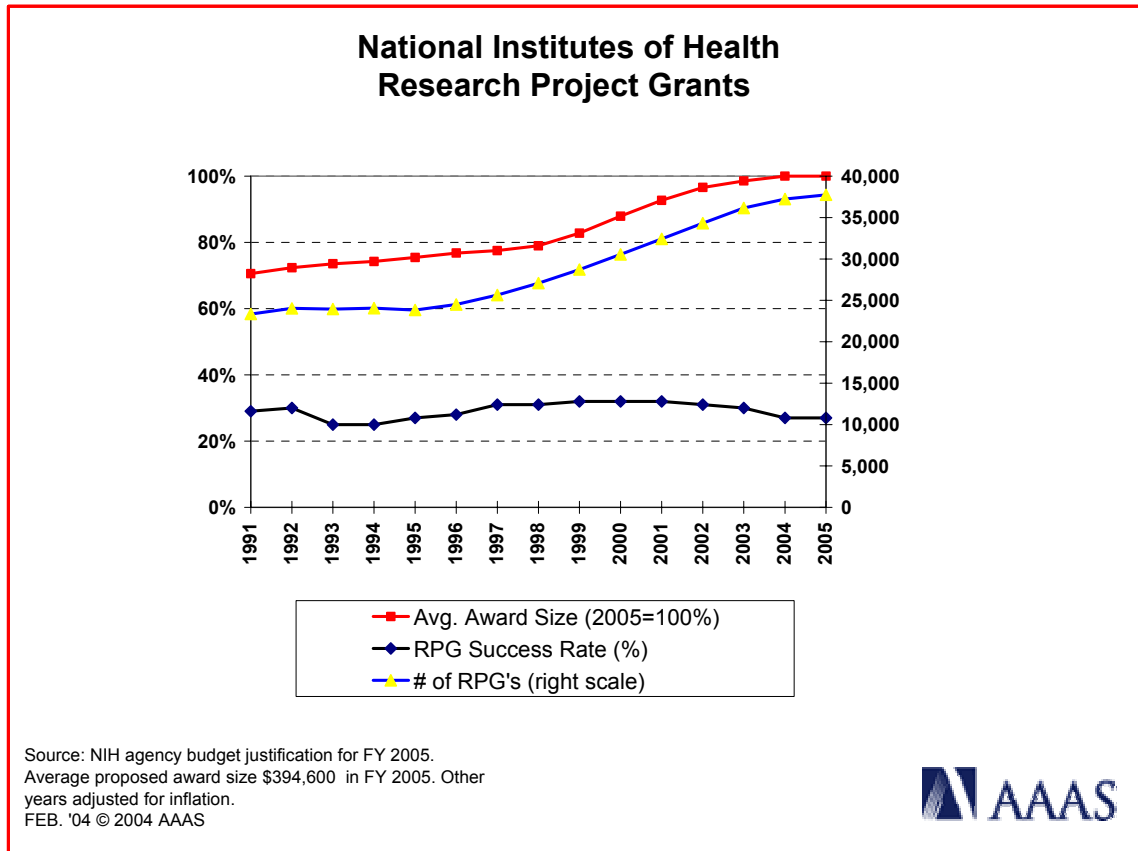


Figure 2. (click on the image to view or download a full-page color PDF version of the chart)

Even for successful applicants, there would be some disappointments in the budget. **The 1.3 percent average increase for all grants between FY 2004 and FY 2005 would just match the expected rate of inflation for the economy as a whole (see Figure 2),** but would fall behind the NIH-calculated Biomedical Research and Development Price Index (BRDPI) that attempts to calculate the inflation rate for goods and services purchased by the NIH budget. Recently, NIH calculated the BRDPI increase for FY 2005 to be 3.5 percent. In recent years, the BRDPI inflation rate has outpaced the economy-wide inflation rate by more than 2 percent a year. (AAAS, and the federal government, uses the economy-wide GDP deflator to adjust R&D dollars for inflation.) The Senate would allocate most of the funds on top of the

request to increasing the grants inflation adjustment, but the Senate bill would only raise the average grant increase to 2 percent, still well short of the expected inflation rate.

The Senate would sharply increase NIH funding for R&D facilities and capital equipment in FY 2005 to \$392 million, up 74 percent from this year but still a sharp drop from \$1.1 billion last year. Much of this funding comes from the Buildings and Facilities account, which would rise to \$115 million in FY 2005; in 2003, this account was \$639 million because of a major investment in biodefense facilities construction. The B&F appropriation funds intramural construction at NIH facilities, while in the NIAID budget there would be \$150 million for extramural construction grants to build an additional 20 extramural biosafety (level 3) laboratories around the nation. The House would go along with this proposal, and in July President Bush signed into law the Project Bioshield Act (Public Law 108-276) that increases the federal share of these NIAID-funded projects to 75 percent from the current 50 percent. The NIAID funding would be the second phase after a one-year pause in FY 2004; in FY 2003, NIAID initiated the first round of extramural biosafety facilities construction with \$373 million mostly for BSL-4 facilities.

The Senate would reject NIH plans to discontinue a \$119 million program for extramural construction in the National Center for Research Resources (NCRR) in FY 2005. The Senate's \$119 million appropriation for this program would be a big chunk of the \$373 million addition to the request. The House, meanwhile, would agree with NIH in providing no money. Both the House and the Senate would provide the requested \$224 million in FY 2005 for another NCRR program, the Institutional Development Award (IDeA) program, up from \$215 million in FY 2004. IDeA provides support to enhance the research capacities of 23 states that have been underrepresented in winning NIH funds in the past.

The Senate bill does not contain language in the House version of the bill that could change how NIH-funded research is published. The report accompanying the House Labor-HHS bill includes nonbinding language calling on NIH to outline a policy by December to allow public access to all NIH-funded research results. Since the language first came to light in July, NIH has already held a number of meetings with scientific journal publishers and other interested groups. In early September, NIH published a notice announcing a draft policy for public comment that would respond to the report language. The draft policy would require that "grantees and supported Principal Investigators provide the NIH with electronic copies of all final version manuscripts upon acceptance for publication if the research was supported in whole or in part by NIH funding." NIH would then archive the manuscript in its PubMed Central database six months after publication, making it freely available to the public. Public comments will be accepted until early November.¹ Several scientific publishers, including AAAS (publisher of *Science*) are sending letters to key House members urging Congress to forego a legislative solution and let NIH's public review process determine the outcome, out of concern that granting immediate free access to scientific journal articles could undermine the financial foundations of scientific publishing.

NIH Priority Areas

Both the House and Senate would provide the necessary funds to carry out NIH plans to expand its Roadmap for Medical Research. Last year, NIH Director Elias Zerhouni introduced a Roadmap for Medical Research involving all the NIH institutes and centers and aimed at three areas of NIH research: improving clinical research (dubbed "Re-engineering the Clinical Research Enterprise"), encouraging interdisciplinary research ("Research Teams of the Future"), and providing new knowledge and research tools to assist other researchers ("New Pathways to Discovery"). Congress approved \$12 million in the Office of the Director (OD) to begin the Roadmap, but with contributions from the other ICs and other OD funds total Roadmap funding is \$128 million this year. Congress and NIH would agree to nearly double Roadmap funding to \$237 million in FY 2005.

Biodefense R&D continues to be a high priority in the NIH portfolio. NIH identifies \$1.8 billion for biodefense R&D in FY 2005, up 4.5 percent from this year. As recently as two years ago, the NIH

¹ See <http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-04-064.html> for more on this issue.

investment was only \$162 million. Most NIH biodefense R&D is funded by the National Institute of Allergy and Infectious Diseases (NIAID), which became the second-largest NIH institute in the aftermath of the fall 2001 anthrax attacks. NIAID would continue to award biodefense research grants in FY 2005, complete the establishment of 10 extramural Regional Centers of Excellence in Biodefense and Emerging Infectious Disease Research (RCE) with the designation of the final 2 centers, provide \$150 million for the second phase of extramural construction grants for biosafety level (BSL) 3 and 4 laboratories around the nation, and conduct animal and clinical trials of various candidate vaccines. In addition to funds in the NIH budget, there would be an additional \$47 million in new funds from the Office of the (HHS) Secretary for NIH to spend on developing medical countermeasures against nuclear or radiological terrorist attacks.

HIV/AIDS research is another priority in the budget. The NIH HIV/AIDS R&D portfolio would expand 2.8 percent in FY 2005 to reach \$2.9 billion. The majority (\$1.5 billion) of this research would be funded by NIAID, the lead institute for AIDS research. Included in the FY 2005 budget and affirmed by the House is \$100 million (the same as FY 2003 but down \$50 million from this year) to be transferred to the **Global Fund to Fight HIV/AIDS, Malaria, and Tuberculosis** – an international public-private partnership to provide grants for the prevention, treatment, and cure of these diseases. The Senate would add to the request to bring the FY 2005 Global Fund contribution to \$149 million, this year's funding level.

R&D in other HHS Agencies

Although 95 percent of total R&D funding at the Department of Health and Human Services (HHS) comes from the NIH, there is also significant research funded by other HHS agencies (see Table 2). Funding at the **Centers for Disease Control and Prevention (CDC)** is primarily aimed at non-R&D activities such as public health and health promotion activities and more recently in biodefense for programs such as increasing state and local preparedness and improving security, but CDC also has a strong intramural research program at CDC laboratories. The Senate would provide \$556 million in a strong endorsement of CDC R&D activities, up 6.8 percent from FY 2004. CDC (and NIH) also receive research funds from the Office of the HHS Secretary (see Table 2) for a variety of biodefense-related research activities; these activities would jump 61.5 percent to \$189 million in the Senate plan.

Outlook and Next Steps

The Senate Labor-HHS bill could clear the Senate in the next week as part of a rush to complete FY 2005 appropriations before October 1. The House approved its version on September 9. But with time running short for a House-Senate conference, the bill is almost certain to be included in a year-end omnibus appropriations bill, which could be delayed until well after October 1.

(This analysis is one of a series of AAAS R&D Funding Updates on the FY 2005 congressional appropriations process. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D 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 1. National Institutes of Health R&D in FY 2005 Senate Appropriations

**Table 1. National Institutes of Health
Senate Appropriations Committee Action on R&D in the FY 2005 Budget
(budget authority in millions of dollars)**

	FY 2004 Estimate	FY 2005 Request	FY 2005 House	Action by Senate				
				FY 2005 Senate	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 2004 Amount	Chg. from FY 2004 Percent
Cancer	4,736	4,870	4,870	4,895	25	0.5%	159	3.4%
Heart, Lung and Blood	2,878	2,964	2,964	2,986	22	0.7%	108	3.7%
Dental and Cranofacial Research	383	394	394	399	5	1.3%	16	4.2%
Diabetes, Digestive and Kidney ¹	1,821	1,876	1,876	1,889	13	0.7%	68	3.7%
Neurological Disorders and Stroke	1,501	1,546	1,546	1,569	23	1.5%	68	4.6%
Allergy and Infectious Diseases ²	4,303	4,440	4,440	4,456	16	0.4%	153	3.6%
General Medical Sciences	1,905	1,960	1,960	1,976	16	0.8%	71	3.7%
Child Health & Human Development	1,242	1,281	1,281	1,289	8	0.6%	47	3.8%
Eye	653	672	672	680	9	1.3%	28	4.2%
Environmental Health Sciences ³	709	731	731	736	5	0.7%	26	3.7%
Aging	1,025	1,056	1,056	1,095	39	3.7%	70	6.8%
Arthritis & Musculoskeletal & Skin	501	515	515	521	6	1.1%	20	4.0%
Deafness and Comm. Disorders	382	394	394	399	5	1.4%	17	4.5%
Mental Health	1,381	1,421	1,421	1,437	16	1.1%	56	4.0%
Drug Abuse	991	1,013	1,013	1,026	13	1.3%	35	3.6%
Alcoholism and Alcohol Abuse	428	442	442	445	3	0.7%	16	3.8%
Nursing Research	135	139	139	140	1	0.7%	5	4.1%
Research Resources	1,179	1,094	1,094	1,213	119	10.9%	34	2.9%
Human Genome Research	479	493	493	496	4	0.8%	18	3.7%
Fogarty International Center	65	67	67	68	0	0.6%	2	3.5%
National Library of Medicine	308	317	317	317	0	0.0%	8	2.7%
Office of the Director	327	360	360	364	4	1.2%	37	11.3%
Buildings and Facilities	99	100	100	115	15	15.1%	16	15.7%
Complementary & Alternative Med.	117	121	121	122	1	0.6%	5	4.2%
Biomed. Imaging/Bioengineering	289	298	298	301	3	1.1%	12	4.1%
Minority Health & Health Disparities	191	197	197	198	1	0.6%	6	3.4%
Total NIH Budget	28,028	28,757	28,757	29,131	373	1.3%	1,102	3.9%
<i>subtract:</i>								
- Estimated Research Training	749	764	764	774	10	1.3%	25	3.3%
- Other Non-R&D	59	71	71	71	1	1.3%	12	20.6%
Total NIH R&D	27,220	27,923	27,923	28,286	363	1.3%	1,066	3.9%

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.

¹ Includes \$150 million in FY 2004 and FY 2005 in mandatory funding for juvenile diabetes.

² Includes \$149 mil. in FY 2004 and FY 2005 Senate, and \$100 mil. in FY 2005 Request and House for the Global Fund for HIV/AIDS, Tuberculosis and Malaria.

³ Funding for all years includes Superfund-related transfers and appropriations from the VA-HUD bill.

September 22, 2004 - Senate Appropriations Committee-approved funding levels.

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

Table 2. Department of Health and Human Services R&D in FY 2005 Senate Appropriations

**Table 2. Department of Health and Human Services
Senate Appropriations Committee Action on R&D in the FY 2005 Budget
(budget authority in millions of dollars)**

	FY 2004 Estimate	FY 2005 Request	FY 2005 House	Action by Senate				
				FY 2005 Senate	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 2004 Amount	Chg. from FY 2004 Percent
National Institutes of Health	27,220	27,923	27,923	28,286	363	1.3%	1,066	3.9%
Centers for Disease Control	521	530	532	556	26	4.9%	35	6.8%
Food and Drug Administration	135	161	155	156	-5	-3.3%	21	15.3%
Centers Medicare & Medicaid Services	78	68	68	78	10	14.4%	0	-0.3%
Health Resources and Services Admin.	22	57	22	22	-35	-61.4%	0	0.0%
Healthcare Research and Quality	327	327	327	342	15	4.6%	15	4.6%
Administration for Children & Families	41	98	82	84	-14	-14.3%	43	104.9%
Office of Aging	3	0	0	0	0	--	-3	-100.0%
Office of the Secretary	122	197	189	197	0	0.0%	75	61.5%
Total HHS R&D	28,469	29,361	29,299	29,720	359	1.2%	1,251	4.4%

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.

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