

Senate Adds \$1 Billion to 2009 NIH Budget

AAAS R&D Funding Update on NIH R&D in FY 2009 Senate Appropriations
Updated August 20 – updates in []

Highlights

- **The Senate would add \$1.0 billion to the 2009 request for the National Institutes of Health (NIH) budget for a total of \$30.5 billion, an increase of 3.0 percent over the current year (see Table 1). [In contrast to a request that would keep NIH institute funding flat, most of NIH's institutes and centers (IC's) would see their budgets increase by 2 to 2.5 percent in the Senate plan.]** NIH R&D would total \$29.7 billion, also \$1.0 billion more than the request (up 2.9 percent; see Table 1).
- **The Senate plan would reverse the trend of the NIH budget declining in real terms for four years in a row, and would allow NIH funding to stay ahead of economy-wide inflation for the first time since 2004.** The Senate plan would allow the NIH budget to just match the 3.5 percent projected rate for biomedical research inflation if the recently enacted 2008 supplemental is excluded.
- [Funding for the NIH Common Fund (NIH Roadmap) in the Office of the Director would be the largest growth area with a 14.0 percent increase to \$568 million in the Senate appropriation] (see Table 1).
- R&D in the other Department of Health and Human Services (HHS) agencies would also increase, primarily because of a \$175 million appropriation for biomedical countermeasures R&D for the Biomedical Advanced Research Development Authority (BARDA) in the Office of the Secretary, nearly double the \$102 million 2008 allocation though short of the \$275 million request (see Table 2).

NIH R&D in FY 2009 Senate Appropriations

[On June 26, the Senate Appropriations Committee approved its version of the FY 2009 Labor-HHS appropriations bill (S 3230) providing funding for the Departments of Labor, Health and Human Services (HHS), and Education, but as of August the full Senate has not scheduled floor time for the bill.] The Senate would spend \$7 billion more on these programs in 2009 than the President's request for a total of \$153 billion in discretionary funding. The National Institutes of Health (NIH) within HHS would get \$1 billion of the additional Senate dollars. NIH is the second-largest supporter of R&D in the federal government, after the Department of Defense. In its mission to promote biomedical research and other fundamental inquiries that may lead to medical advances, it is by far the largest federal supporter of basic research, applied research, and R&D at colleges and universities, and has a disproportionate impact on support for the biomedical life sciences and related fields.

The Senate would add \$1.0 billion to the 2009 request to bring NIH's total budget to \$30.5 billion, an increase of \$875 million or 3.0 percent over the current year (see Table 1). (Originally, the NIH 2009 request was exactly equal to the 2008 budget, but on June 30 NIH received an extra \$150 million in 2008 funding as part of a war-related supplemental appropriations bill. All figures include the \$150 million in the 2008 total. Without the supplemental, the Senate appropriation would be a \$1.0 billion or 3.5 percent increase over 2008.) The Senate's action could allow NIH funding to stay ahead of economy-wide inflation for the first time since 2004, and reflects Senate appropriators' concerns that NIH funding has declined significantly over the last several years, reducing researchers' chances of getting an NIH grant application approved to 1 in 5 and increasing the average age when investigators receive their first standard research grant to 42.

NIH classifies 97 percent of its budget as R&D, including R&D facilities. (The remainder is for overhead costs and research training.) NIH R&D would total \$29.7 billion next year in the Senate plan, an increase of \$838 million or 2.9 percent over the current year (including the recent supplemental). Recent budget trends of cuts or flat funding represent a sharp turnaround after a completed five-year doubling campaign involving 15 percent increases for each of the five years between 1998 and 2003 (see Figure 1). Growth in the NIH budget slowed sharply in 2004, and in inflation-adjusted terms NIH funding has declined since then. The 2009 budget request would continue the downward trend for the fifth year in a row within a shrinking overall domestic budget, but the Senate, working from a budget blueprint allowing the domestic budget to keep pace with inflation, would try to reverse recent trends with an increase ahead of the 2.0 percent projected inflation rate for 2009.

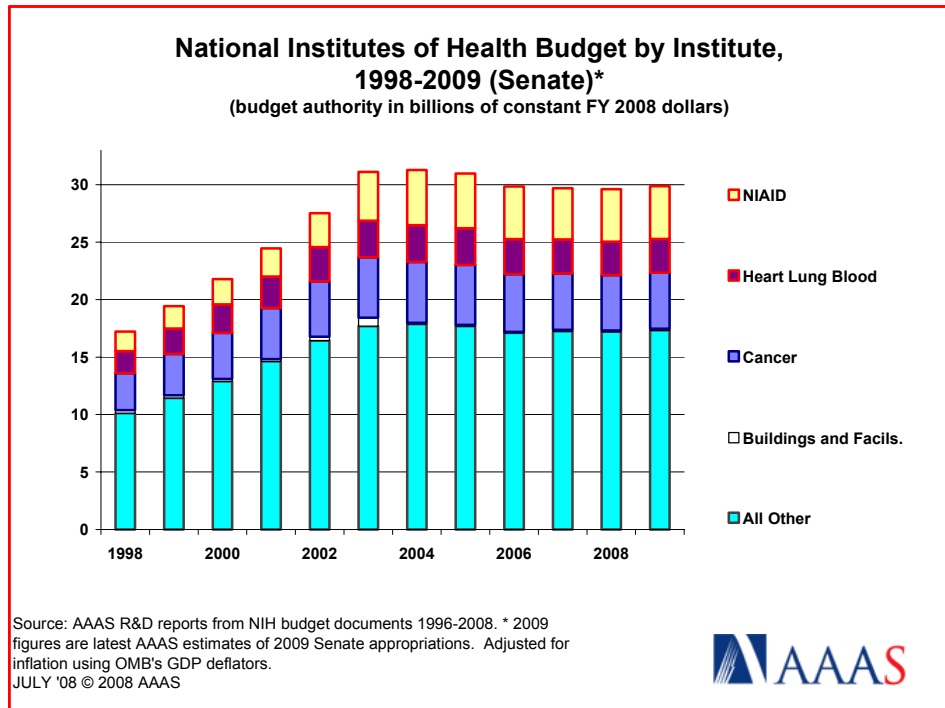


Figure 1. (click on the image for PDF)

The Senate plan would bring the 2009 NIH budget to 4.5 percent below the 2004 peak after adjusting for inflation, an improvement over the current year. The Senate plan would almost match NIH's own calculations of biomedical research inflation. NIH calculates a Biomedical Research and Development Price Index (BRDPI), an index that attempts to calculate the inflation rate for goods and services purchased by the NIH budget. Recently, NIH projected the BRDPI increase for FY 2009 to be 3.5 percent, the same rate as 2008. The Senate appropriation's 3.0 percent increase is a 3.5 percent increase if the recently enacted 2008 supplemental of \$150 million is excluded, so the increase would match the BRDPI inflation rate; if the Senate plan prevails, NIH funding would keep pace with biomedical research inflation for the first time since 2003. Using BRDPI, the 2009 Senate appropriation would be 10 percent less than the 2004 budget. (AAAS and the federal government generally use the economy-wide GDP deflator to adjust R&D dollars for inflation.)

NIH Institutes in the FY 2009 Senate Appropriation

The NIH budget is actually appropriated in 26 separate budget accounts, roughly corresponding to NIH's institutes and centers (IC's; see Table 1). There are 20 institutes with separate budgets, along with four centers, an Office of the Director (OD), and a Buildings and Facilities account. There are three other centers that are not separately budgeted.

[In the FY 2009 Senate appropriation, nearly all IC's would see their budgets increase by 2 to 2.5 percent, instead of flat funding in the request. Among the 20 independent institutes, all would see an increase of at least 2.1 percent, and would allow most IC's stay ahead of economy-wide inflation for the first time since 2004. The National Cancer Institute, the largest institute, would approach its first \$5 billion budget with a \$5.0 billion appropriation, up \$128 million or 2.6 percent for its first real (inflation-adjusted) increase since 2004.]

The largest increase would go to the Buildings and Facilities account with \$147 million, up 23.2 percent over the current year. [The largest dollar increase would go to the Office of the Director, up \$164 million or 14.7 percent to \$1.3 billion instead of a requested cut, to boost funding for two key programs. Trans-NIH initiatives in the NIH Common Fund (or the NIH Roadmap for Medical Research), now centralized in the Office of the Director (OD), would climb \$70 million or 14.0 percent to \$568 million, well above the requested increase.] The Senate would also reverse the proposed cancellation of the National Children's Study with a \$192 million appropriation compared to a zero request, up from \$111 million from Congress in 2008. The Senate would also go along with OD request to increase funding of R&D on nuclear, radiological, and chemical countermeasures by \$19 million to \$113 million.

[The Senate would also award a larger-than-average increase to the National Center for Research Resources (NCRR) with a \$1.2 billion appropriation, 3.2 percent or \$37 million more than this year.] Part of the larger increase would be from the shift of some Clinical and Translational Science Awards (CTSA) funding from the Office of the Director to NCRR. Total CTSA funding would be \$475 million in the Senate plan, nearly all of it from NCRR, compared to \$472 million for the total program in 2008. The Senate also funds the Institutional Development Awards (IDeA) program within NCRR at \$226 million, up from \$218 million in 2008 and the 2009 request; the IDeA program aims to improve research competitiveness for states that have traditionally been underrepresented in winning NIH funds through programs to strengthen biomedical research capacity and capabilities.

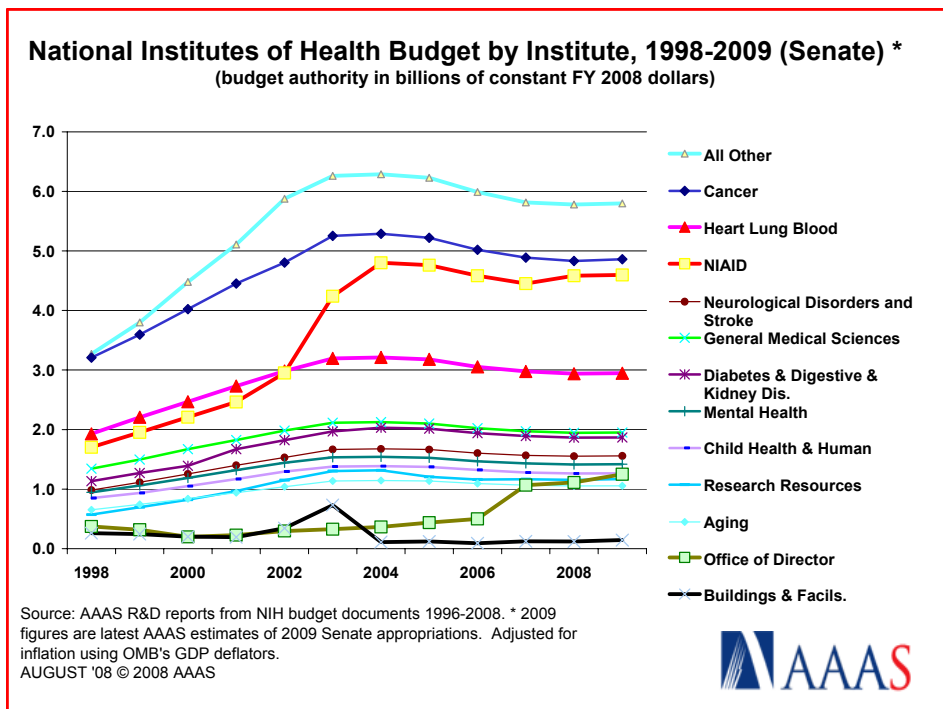


Figure 2. (click on the image for PDF)

Because of stagnant and declining funding in recent budgets, all NIH IC's, except the Office of the Director, have lost ground significantly in inflation-adjusted terms (see Figure 2) but the Senate appropriation could represent a slight turnaround in their fortunes. The National Heart, Lung, and Blood

Institute (NHLBI) would have \$3.0 billion in 2009 under the Senate plan for the first real increase since 2004. [The National Institute of Allergy and Infectious Diseases (NIAID), which received billions of dollars in additional funds in the aftermath of the fall 2001 anthrax attacks to become the second-largest NIH institute, would receive \$4.7 billion from the Senate, a gain of 2.3 percent.]

NIH Funding Mechanisms and Priority Areas

The majority of NIH's budget is distributed to external performers through Research Project Grants (RPG's), which are investigator initiated, peer reviewed, and competitively awarded throughout the NIH budget. NIH projects a decline in the number of RPG's, from a high of 37,060 in 2004 down to a projected 36,516 next year. NIH expects to offer just 9,757 new (competing) RPG's in 2009 based on its request, below the 10,000+ new grants awarded in 2003 and 2004. (RPG's last 3.8 years on average, and nearly all are funded a year at a time in successive budgets.) But the Senate appropriation could allow NIH to make 10,471 new RPG's in 2009, which would be the most ever. The additional Senate-funded RPG's would most likely allow the success rate of new grant applications to be significantly higher than the 18 percent rate NIH is currently projecting for 2009.

NIH continues to expand funding for clinical research, high-risk basic research, new research tools, and multidisciplinary collaborative research in the **NIH Common Fund, also known as the Roadmap for Biomedical Research**. Total roadmap funding increased from \$483 million in 2007 to \$498 million in 2008 and would increase a further \$70 million or 14.0 percent to \$568 million in the 2009 Senate plan (see Table 1), well above the \$534 million request. The Roadmap started out with funding from all of NIH's IC's, but since 2007 funding has been centralized in the Office of the Director under the Common Fund.

Within the Roadmap, funding for the Director's Pioneer Awards, which are five-year awards to individual investigators to encourage high-risk basic research, would increase \$9 million in the Senate plan to \$45 million. The Director's New Innovator Awards, similar to the Pathway to Independence program in that it supports new investigators, would receive \$108 million in the Senate appropriation, nearly double the \$56 million 2008 allocation and 2009 request. And the Senate would provide \$50 million for a new program in Transformative Research Project Grants to fund 'transformative' investigator-initiated proposals.

HIV/AIDS research continues to be another focus area in the budget. The HIV/AIDS R&D portfolio would remain stable at \$2.9 billion for the fifth year in a row in the 2009 request but could top \$3 billion if the Senate appropriation is enacted. The majority of this research would be funded by NIAID, the lead institute for AIDS research. Included in the FY 2009 budget and the Senate appropriation is \$300 million 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, up \$5 million from 2008 but nearly triple the funding level for 2007 and earlier years.

Among other research areas, an area small in funding but large in policy interest is embryonic stem cell research. Since President Bush's announcement in August 2001 that NIH would fund human embryonic stem cell research only on stem cell lines that were created before that date and approved by NIH, there has been ongoing controversy over how the policy might limit progress on stem cell research. A bill to greatly expand stem cell lines eligible for federal funding has been vetoed twice by President Bush. In the meantime, NIH reports that its funding of human embryonic stem cell research using the pre-August 2001 approved stem cell lines is \$42 million this year. But total NIH-funded stem cell research has been growing and could reach \$656 million this year, mostly on non-human stem cells or on human non-embryonic cells. The Senate bill is silent on the stem cell policy question.

The Senate bill contains a provision that affirms a policy requiring NIH-funded researchers to make their research papers freely accessible. Since a similar provision was included in the final 2008 NIH appropriation, NIH-funded researchers have had to submit electronic versions of their final published research papers to NIH as soon as possible but no later than 12 months after publication, so that NIH-funded research results can be freely accessible to the public in NIH's PubMed Central digital archive. The

legally binding language calls on NIH to make PubMed Central a central, open-access repository for all NIH-funded research findings.

Although the Senate Labor-HHS bill does not contain any binding legal language on the issue, the report accompanying the bill urges the NIH Director to continue efforts to strengthen conflicts of interest and financial disclosure guidelines for NIH employees and NIH-funded researchers.

R&D in Other HHS Agencies

Total R&D in the Department of Health and Human Services (HHS) would be \$30.9 billion in the FY 2009 Senate Labor-HHS bill, a 3.0 percent increase (see Table 2). NIH dominates the HHS R&D portfolio, but the rest of HHS (excluding NIH) would fund a still-substantial \$1.2 billion in R&D in FY 2009, an increase of \$69 million or 6.1 percent because of a substantial increase from \$102 million to \$175 million for biodefense countermeasures R&D funded by the relatively new Biomedical Advanced Research Development Authority (BARDA) in the Office of the Secretary. The request was for \$275 million. BARDA, which was officially created a little more than a year ago, works with the more research-oriented biodefense efforts in NIH to develop countermeasures against bioterror threats that could potentially be added to the Strategic National Stockpile for mass distribution in the event of a terrorist attack.

Outlook and Next Steps

[The full Senate could debate and approve the Labor-HHS bill in September, but it is increasingly likely not to debate it at all before the November elections.] The House Appropriations Committee has marked up a counterpart version with a similar \$1 billion in additional funding for NIH, but has not released the draft yet because of the House's doubts as to whether the bill will receive floor time and debate. There is now almost no chance that Congress will send a final version of the bill to President Bush before the October 1 start of FY 2009. The President has threatened to veto any 2009 appropriations bill that exceeds his request; since both the House and Senate versions of the bill do so and since Congress is not inclined to do the heavy lifting of negotiating a House-Senate compromise bill only to see it vetoed, the bill may have a long way to go before its funding levels become final. The promised Senate increase for NIH in 2009, if it happens at all, could be delayed until next January.

(This analysis is one of a series of AAAS R&D Funding Updates on FY 2009 congressional appropriations. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D in FY 2009 appropriations, is available on the AAAS R&D Web Site (<http://www.aaas.org/spp/rd>) in the "FY 2009 R&D" or the "What's New" sections.)

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Table 1. National Institutes of Health R&D in FY 2009 Senate Appropriations

**Table 1. National Institutes of Health
Senate Appropriations Committee Action on R&D in the FY 2009 Budget
(budget authority in millions of dollars)**

	FY 2008 Estimate	FY 2009 Request	Action by Senate				
			FY 2009 Senate	Chg. from Request		Chg. from FY 2008	
				Amount	Percent	Amount	Percent
Cancer	4,831	4,810	4,959	149	3.1%	128	2.6%
Allergy and Infectious Diseases 1/	4,583	4,569	4,689	120	2.6%	105	2.3%
Heart, Lung and Blood	2,938	2,925	3,006	81	2.8%	69	2.3%
General Medical Sciences	1,946	1,938	1,992	54	2.8%	46	2.3%
Diabetes, Digestive and Kidney 2/	1,866	1,858	1,906	47	2.6%	40	2.2%
Neurological Disorders	1,552	1,545	1,588	43	2.8%	36	2.3%
Mental Health	1,413	1,407	1,446	39	2.8%	33	2.3%
Child Health & Human Dev.	1,261	1,256	1,291	35	2.8%	29	2.3%
Research Resources	1,156	1,160	1,193	32	2.8%	37	3.2%
Office of the Director 4/	1,112	1,057	1,275	218	20.7%	164	14.7%
Aging	1,053	1,048	1,077	29	2.8%	25	2.3%
Drug Abuse	1,006	1,002	1,030	28	2.8%	24	2.3%
Environmental Health Sciences 3/	723	720	738	18	2.5%	15	2.1%
Eye	671	668	687	20	2.9%	17	2.5%
Arthritis /musculoskeletal	511	509	523	14	2.8%	12	2.3%
Human Genome	489	488	501	14	2.8%	12	2.5%
Alcohol Abuse and Alcoholism	439	437	449	12	2.8%	10	2.3%
Deafness and Communication	396	395	406	11	2.8%	10	2.5%
Dental Research	392	391	401	11	2.8%	9	2.3%
National Library of Medicine	322	323	330	7	2.2%	8	2.4%
Biomed/Bioengineering	300	300	307	7	2.3%	7	2.3%
Minority Health / Disparities	201	200	205	6	2.8%	5	2.3%
Nursing Research	138	138	141	4	2.8%	3	2.3%
Buildings and Facilities	119	126	147	21	16.7%	28	23.2%
Complementary and Alt	122	122	125	3	2.8%	3	2.3%
Fogarty International Center	67	67	68	2	2.8%	2	2.3%
Total NIH Budget	29,607	29,457	30,482	1,025	3.5%	875	3.0%
<i>subtract:</i>							
- Training and Overhead	781	791	819	28	3.5%	37	4.8%
Total NIH R&D	28,826	28,666	29,664	997	3.5%	838	2.9%
<i>[NIH Roadmap for Medical Res.]</i>	<i>498</i>	<i>534</i>	<i>568</i>	<i>34</i>	<i>6.4%</i>	<i>70</i>	<i>14.0%</i>

AAAS estimates based on FY 2009 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2008 and FY 2009 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.

FY 2008 figures include funds enacted in FY 2008 supplemental (Public Law 110-252).

1/ Includes transfers to the Global Fund for HIV/AIDS (\$295 mil. '08; \$300 mil. '09).

2/ Includes \$150 million each year in mandatory diabetes funds.

3/ Includes separate appropriations for Superfund-related activities. FY '09 Senate assumes request.

4/ Trans-NIH initiatives (Roadmap) are consolidated in OD.

July 9, 2008 (updated August 20) - AAAS estimates of Senate Appropriations

Committee-approved appropriations. These figures may be amended or rejected by the full Senate.

Table 2. Department of Health and Human Services R&D in FY 2009 Senate Appropriations

**Table 2. Department of Health and Human Services
Senate Appropriations Committee Action on R&D in the FY 2009 Budget
(budget authority in millions of dollars)**

	FY 2008 Estimate	FY 2009 Request	Action by Senate				
			FY 2009 Senate	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 2008 Amount	Chg. from FY 2008 Percent
National Institutes of Health 2/	28,826	28,666	29,664	997	3.5%	838	2.9%
Centers for Disease Control	441	441	441	0	0.0%	0	0.0%
Food and Drug Administration	128	131	131	0	0.0%	3	2.3%
Centers for Medicare & Medicaid Svcs.	31	31	34	3	8.1%	3	8.1%
Health Resources and Services Admin.	12	12	41	29	238.4%	29	238.4%
Healthcare Research and Quality 1/	362	353	362	9	2.5%	0	0.0%
Administration for Children & Families	44	44	35	-9	-20.5%	-9	-20.5%
Office of the Secretary	122	295	195	-100	-33.9%	73	59.8%
Total HHS R&D	29,966	29,973	30,902	928	3.1%	936	3.1%

AAAS estimates based on FY 2009 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2008 and FY 2009 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/ Figures reflect estimated R&D program levels from all receipts, not just appropriated BA.

2/ Includes funds from recently enacted supplemental (Public Law 110-252).

July 9, 2008 (updated August 20) - AAAS estimates of Senate Appropriations

Committee-approved appropriations. These figures may be amended or rejected by the full Senate.