

## NIH Funding Flat in 2008 for Most Institutes

### AAAS R&D Funding Update on NIH R&D in FY 2008 Final Appropriations

#### Highlights

- Congress recently finalized a National Institutes of Health (NIH) budget for 2008 of \$29.5 billion, an increase of just 0.9 percent or \$275 million over last year (see Table 1), \$776 million less than an earlier appropriation President Bush vetoed in November.

- Because much of the increase would go to a larger transfer to the Global Fund for HIV/AIDS and increased funding for the NIH Common Fund, **nearly all NIH institutes and centers (IC's) would see their budgets remain flat in 2008**, falling far short of both economy-wide inflation and projected biomedical research inflation.

- NIH R&D spending, 97 percent of the total NIH budget except for some training and overhead costs, would increase just 0.9 percent or \$254 million to \$28.7 billion.

- The Office of the Director (OD) budget would climb to \$1.1 billion in 2008 to centralize NIH Common Fund (Roadmap) dollars. The Common Fund would total \$496 million in 2008, up 2.6 percent.

- Because an unusually large number of existing research grants would end, NIH expects to offer more than 10,000 new research grants in 2008 for the first time since 2004, but the final appropriation would most likely prevent NIH from offering any inflationary adjustments to new and continuing grants, and the total number of grants will decline.

- NIH grantees will be required to make their published research papers freely accessible within a year of publication.

- Total Department of Health and Human Services (HHS) R&D would be \$30.0 billion in the final 2008 appropriation, an increase of \$380 million or 1.3 percent (see Table 2). Although NIH dominates the HHS portfolio, there would be increases for other HHS agencies, including a 40 percent increase for R&D in the Office of the Secretary to \$154 million, primarily for R&D on biodefense countermeasures.

#### NIH R&D in FY 2008 Final Appropriations

On December 26, President Bush signed into law the FY 2008 omnibus appropriations bill (HR 2764) that had cleared Congress a week earlier, bringing the 2008 appropriations process to a close. The omnibus bill included a new version of the FY 2008 Labor-HHS appropriations bill that was billions of dollars less than the version the President vetoed in November. The Labor-HHS section of the omnibus bill, which funds the Departments of Labor, Health and Human Services, and Education, lost nearly \$6 billion between November and December. The National Institutes of Health (NIH), the largest R&D funding agency supported by the Labor-HHS bill, also lost significantly between the November and final appropriations. 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.

**The final FY 2008 NIH appropriation of \$29.5 billion, after adjusting for across-the-board reductions and rescissions in the omnibus bill, would be just 0.9 percent or \$275 million more than**

**the 2007 funding level (see Table 1).** The \$275 million increase becomes just a \$75 million increase after adjusting for an extra \$200 million to the Global Fund for HIV/AIDS on top of the usual \$100 million, money that would be transferred out of NIH. The congressional appropriation would be \$604 million more than NIH's budget request from last February, but \$776 million less than the vetoed appropriation.

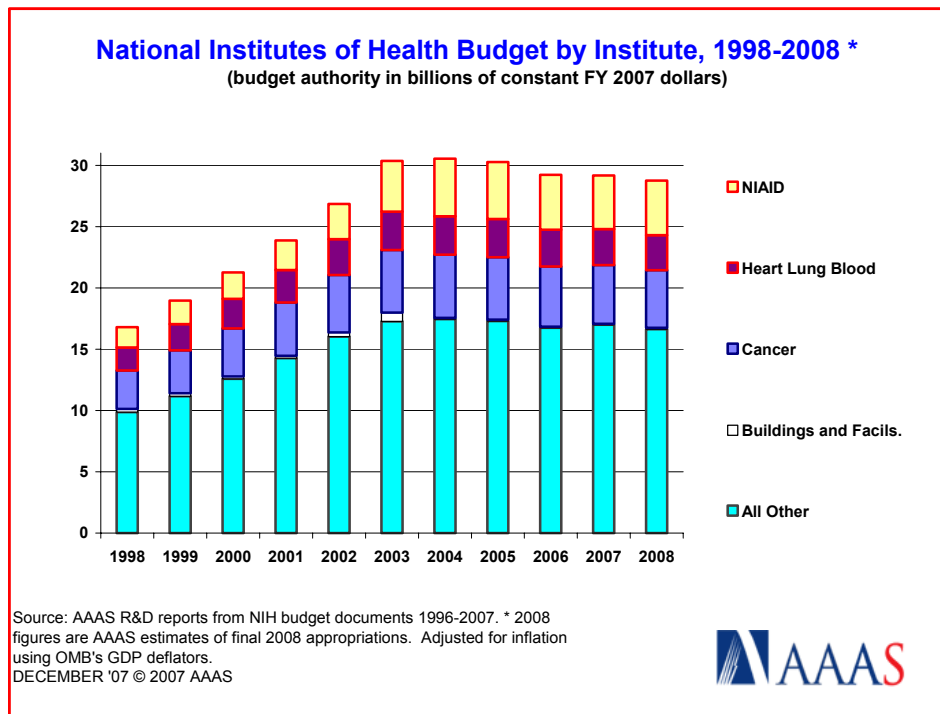


Figure 1. (click on the image for PDF)

Because of the increased Global Fund transfer and a large increase for trans-NIH initiatives in the Office of the Director, **nearly all of NIH's institutes and centers (IC's) would see their budgets remain flat in 2008** (see Table 1), well below the projected 2.4 percent inflation rate for the economy as a whole. As a result of the 2008 real cut and past budget cuts (see Figure 1), the 2008 NIH budget would be 5.8 percent below the 2004 budget in inflation-adjusted dollars. The modest 2008 increase would lag even further behind 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. NIH projects the BRDPI increase for FY 2008 to be 3.7 percent, the same rate as 2007. Using BRDPI, the 2008 NIH appropriation would be 10.1 percent less than the 2004 budget in biomedical inflation-adjusted terms. (AAAS and the federal government generally use the economy-wide GDP deflator to adjust R&D dollars for inflation.)

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 \$28.7 billion, a 0.9 percent increase.

### NIH Institutes in FY 2008 Final Appropriations

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 final FY 2008 appropriation, nearly all IC's would receive flat budgets (see Figure 1).** Among the 20 independent institutes, only the National Institute of Allergy and Infectious Diseases (NIAID) would receive an increase greater than 1 percent, of \$177 million (up 4.0 percent) to \$4.6 billion, but entirely

because of the extra \$200 million contribution to the Global Fund for HIV/AIDS. Without the Global Fund, NIAID funding would actually decline in 2008. Among the centers, only the National Center for Research and Resources (NCRR) would see an increase greater than 1 percent, a 1.4 percent increase to \$1.1 billion primarily to expand the Institutional Development Awards (IDeA) program to \$221 million instead of a requested cut down to \$211 million. The IDeA program aims to improve biomedical research capacity and infrastructure within the 23 states (and Puerto Rico) receiving the least NIH funding.

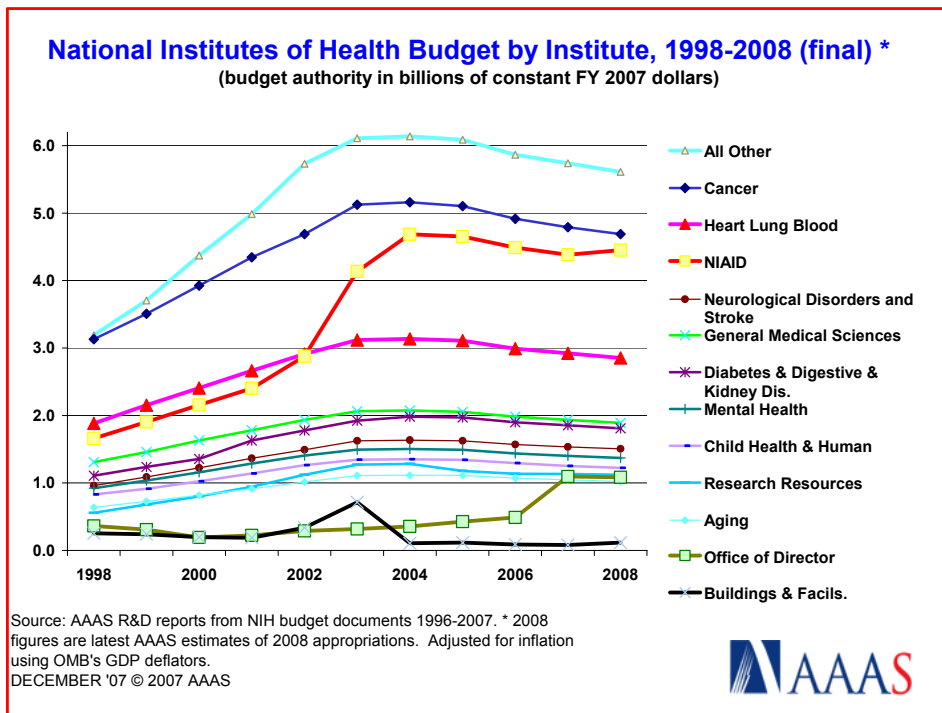


Figure 2. (click on the image for PDF)

**The Office of the Director (OD) does slightly better in 2008 than most IC's with an increase of 1.2 percent or \$14 million to \$1.1 billion.** The amount is more than double the request because Congress allocated all funding for the trans-NIH Common Fund within OD. The 2008 OD appropriation includes, in addition to \$496 million for the Common Fund (up 2.6 percent), \$113 million for the second full year of the National Children's Study (transferred last year from the National Institute of Child Health and Development (NICHD)), and \$96 million for R&D on radiological, nuclear, and chemical countermeasures.

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 over the last four years (see Figure 2). The largest institute, the National Cancer Institute (NCI), would receive \$4.8 billion in 2008, 9.1 percent below the 2004 funding level in real terms. The National Heart, Lung, and Blood Institute (NHLBI) would have \$2.9 billion in 2008, a 9.0 percent inflation-adjusted loss compared to 2004. The other NIH institutes would see similar losses. Even 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, has lost ground in more recent years with a \$4.6 billion 2008 appropriation, 5.0 percent below its 2004 budget in real terms but even further below after adjusting for the increased Global Fund transfer. (The losses would be even greater if calculated with the biomedical research BRDPI inflation index.)

### NIH Priority Areas and Policy Changes

NIH continues to expand funding for clinical research, high-risk basic research, new research tools, and multidisciplinary collaborative research in the NIH Roadmap for Biomedical Research, renamed the **NIH**

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**Common Fund** in last year's NIH authorization bill. The Common Fund, after increasing from \$240 million to \$329 million in 2006, increased to \$483 million in 2007, and would increase by 2.6 percent to \$496 million in 2008 (see Table 1). Common Fund money started out distributed among all the IC's, but in 2007 Congress chose to appropriate all Common Fund money in the Office of the Director (OD). NIH's 2008 budget request proposed to have each IC contribute 1.3 percent of its budget, with OD kicking in \$122 million, but the 2008 congressional appropriation would continue the 2007 practice of having all funding come from the Office of the Director and would expand the Common Fund to nearly 1.7 percent of the total NIH budget.

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 the number of stem cell lines eligible for federal funding was vetoed by President Bush last summer, and a nearly identical bill was vetoed again in June. The Senate tried to attach the vetoed bill to its version of the Labor-HHS bill, but the stem cell provision was removed on the Senate floor and is absent from the omnibus bill. In the meantime, NIH reports that its funding of human embryonic stem cell research using the pre-August 2001 approved stem cell lines could be \$37 million in 2008. But total NIH-funded stem cell research has been growing and could reach \$639 million this year, mostly on non-human stem cells or on human non-embryonic cells.

**The final 2008 NIH appropriation contains a provision that would require NIH-funded researchers to make their research papers freely accessible.** NIH-funded researchers will have 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 follows non-binding report language in previous appropriations bills calling on NIH to make PubMed Central a central, open-access repository for all NIH-funded research findings. Until now, such submissions had been voluntary, and Congress had been frustrated by the low percentages of researchers who have submitted their papers.

### **NIH Funding Mechanisms**

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. Based on its budget request, NIH projected a decline in the number of RPG's in 2008, from a high of 37,060 in 2004 down to a projected 36,205 next year. Because of a large number of existing RPG's ending this year, NIH expects to offer 10,188 new RPG's in 2008, the first time since 2004 that new RPG's would exceed 10,000. The final appropriation should allow NIH to at least meet its numerical projections, but will likely force NIH to reduce the average size of new and continuing research grants.

### **R&D in Other HHS Agencies**

**Total R&D in the Department of Health and Human Services (HHS) would be \$30.0 billion in FY 2008, a 1.3 percent increase** instead of a requested cut (see Table 2). NIH dominates the HHS R&D portfolio, but the rest of HHS (excluding NIH) would fund a still-substantial \$1.4 billion in R&D in FY 2008, an increase of 10 percent. The largest part of the non-NIH increase would go to the Office of the Secretary, which would see its R&D funding increase 40 percent from \$110 million to \$154 million, falling short of even greater increases in the request. As part of its expanding effort to fund anthrax research and other R&D related to defenses against terrorist threats, Congress gave the Office of the Secretary \$102 million for biodefense R&D in the newly created Biodefense Advanced Research and Development Authority (BARDA) in FY 2008, well short of the \$189 million request but double the 2007 funding level. BARDA will fund advanced research and development of new biodefense countermeasures as part of an HHS-wide effort to secure an adequate supply of such countermeasures for the Strategic National Stockpile.

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There would also be a boost in R&D in the Health Resources and Services Administration (HRSA) to \$35 million, triple last year's funding level, primarily because of the return of earmarked biomedical research facilities in 2008 after a two-year moratorium on earmarked projects.

### **Outlook and Next Steps**

NIH and its sister HHS agencies enter calendar year 2008 with their final FY 2008 budgets, just weeks before the early February release of the President's FY 2009 budget request. Because of burgeoning numbers of grant applications and shrinking budgets, NIH faces another year of declining success rates in grant competitions. From being able to fund 1 out of 3 grant applications at the beginning of the decade, NIH can fund fewer than 1 out of 5 applications now, with several institutes looking at success rates as low as 1 out of 10. Although Congress attempted to boost NIH funding in its earlier 2008 appropriations, the November presidential veto and the subsequent jettisoning of billions of dollars to meet the President's objections result in yet another disappointing year for biomedical research.

(This analysis is one of a series of AAAS R&D Funding Updates on FY 2008 congressional appropriations. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D in FY 2008 appropriations, is available on the AAAS R&D Web Site (<http://www.aaas.org/spp/rd>) in the "FY 2008 R&D" or the "What's New" sections.)

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Table 1. National Institutes of Health R&amp;D in FY 2008 House-Senate Conference (REVISED)

**Table 1. National Institutes of Health  
House-Senate Conference on R&D in the FY 2008 Budget (REVISED)  
(budget authority in millions of dollars)**

	FY 2007 Estimate	FY 2008 Request	House-Senate Conference				
			FY 2008 CONF.	Chg. from Request		Chg. from FY 2007	
				Amount	Percent	Amount	Percent
Cancer	4,793	4,782	<b>4,805</b>	23	0.5%	12	0.2%
Allergy and Infectious Diseases 1/	4,383	4,592	<b>4,561</b>	-32	-0.7%	177	4.0%
Heart, Lung and Blood	2,922	2,925	<b>2,923</b>	-2	-0.1%	1	0.0%
General Medical Sciences	1,936	1,941	<b>1,936</b>	-6	-0.3%	0	0.0%
Diabetes, Digestive and Kidney 2/	1,855	1,858	<b>1,853</b>	-5	-0.3%	-2	-0.1%
Neurological Disorders	1,535	1,537	<b>1,544</b>	7	0.4%	9	0.6%
Mental Health	1,404	1,405	<b>1,404</b>	-1	-0.1%	1	0.1%
Child Health & Human Dev.	1,254	1,265	<b>1,255</b>	-10	-0.8%	1	0.1%
Research Resources	1,133	1,112	<b>1,149</b>	37	3.3%	16	1.4%
Aging	1,047	1,047	<b>1,047</b>	0	0.0%	1	0.1%
Drug Abuse	1,000	1,000	<b>1,001</b>	0	0.0%	1	0.1%
Environmental Health Sciences 3/	720	716	<b>720</b>	4	0.5%	-1	-0.1%
Eye	667	668	<b>667</b>	-1	-0.1%	0	0.1%
Office of the Director 4/	1,096	517	<b>1,109</b>	592	114.5%	14	1.2%
Arthritis /musculoskeletal	508	508	<b>509</b>	1	0.1%	1	0.1%
Human Genome	486	484	<b>487</b>	2	0.5%	1	0.2%
Alcohol Abuse and Alcoholism	436	437	<b>436</b>	0	-0.1%	0	0.1%
Deafness and Communication	393	394	<b>394</b>	0	0.1%	1	0.2%
Dental Research	389	390	<b>390</b>	0	0.0%	0	0.1%
National Library of Medicine	320	313	<b>321</b>	8	2.7%	1	0.3%
Biomed/Bioengineering	297	300	<b>299</b>	-2	-0.6%	2	0.6%
Minority Health / Disparities	199	194	<b>200</b>	5	2.6%	0	0.1%
Nursing Research	137	138	<b>137</b>	0	-0.2%	0	0.1%
Buildings and Facilities	81	136	<b>119</b>	-17	-12.5%	38	46.7%
Complementary and Alt	121	122	<b>122</b>	0	-0.1%	0	0.1%
Fogarty International Center	66	67	<b>67</b>	0	-0.1%	0	0.3%
<b>Total NIH Budget</b>	<b>29,178</b>	<b>28,850</b>	<b>29,453</b>	<b>604</b>	<b>2.1%</b>	<b>275</b>	<b>0.9%</b>
<i>subtract:</i>							
- Estimated Research Training	764	761	<b>777</b>	16	2.1%	12	1.6%
- Other Non-R&D	15	23	<b>24</b>	0	2.1%	9	56.5%
<b>Total NIH R&amp;D</b>	<b>28,399</b>	<b>28,066</b>	<b>28,653</b>	<b>587</b>	<b>2.1%</b>	<b>254</b>	<b>0.9%</b>
<i>[ NIH Common Fund ]</i>	<i>483</i>	<i>486</i>	<i>496</i>	<i>10</i>	<i>2.0%</i>	<i>13</i>	<i>2.6%</i>

AAAS estimates based on FY 2008 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2007 and FY 2008 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 transfers to the Global Fund for HIV/AIDS (\$100 mil. '07; \$300 mil. '08 request, '08 Senate and '08 House).

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

3/ Includes separate appropriations for Superfund-related activities.

4/ FY 2007 Estimate and FY 2008 Conference consolidate funding for trans-NIH initiatives (Roadmap) in OD.

FY 2008 Conference adjusted to reflect general reductions in the 2008 omnibus appropriations bill.

**December 17, 2007 - AAAS estimates of REVISED House-Senate Conference appropriations.**

**These appropriations may be rejected by the House or Senate, and may be vetoed by the President.**

Table 2. Department of Health and Human Services R&amp;D in FY 2008 House-Senate Conference (REVISED)

**Table 2. Department of Health and Human Services  
House-Senate Conference on R&D in the FY 2008 Budget (REVISED)  
(budget authority in millions of dollars)**

	FY 2007 Estimate	FY 2008 Request	House-Senate Conference				
			<b>FY 2008 CONF.</b>	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 2007 Amount	Chg. from FY 2007 Percent
National Institutes of Health	28,399	28,066	<b>28,653</b>	587	2.1%	254	0.9%
Centers for Disease Control	547	534	<b>569</b>	35	6.6%	22	4.0%
Food and Drug Administration	144	139	<b>139</b>	0	0.0%	-5	-3.5%
Centers for Medicare & Medicaid Svcs.	42	42	<b>38</b>	-4	-8.8%	-4	-8.8%
Health Resources and Services Admin.	12	12	<b>35</b>	23	188.5%	23	188.5%
Healthcare Research and Quality 1/	346	357	<b>356</b>	-1	-0.2%	10	3.0%
Administration for Children & Families	57	94	<b>92</b>	-2	-1.7%	35	62.0%
Office of the Secretary	110	241	<b>154</b>	-87	-36.1%	44	40.1%
<b>Total HHS R&amp;D</b>	<b>29,657</b>	<b>29,485</b>	<b>30,037</b>	<b>552</b>	<b>1.9%</b>	<b>380</b>	<b>1.3%</b>

AAAS estimates based on FY 2008 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2007 and FY 2008 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.

FY 2008 Conference adjusted to reflect general reductions in the 2008 omnibus appropriations bill.

**December 17, 2007 - AAAS estimates of REVISED House-Senate Conference appropriations.**

**These appropriations may be rejected by the House or Senate, and may be vetoed by the President.**