

AAAS R&D Funding Update January 7, 2008 -  
R&D Earmarks in FY 2008 FINAL Appropriations

## R&D Earmarks Total \$4.5 Billion in 2008

(This analysis is part of a AAAS effort to enumerate congressionally designated, performer-specific R&D projects not appearing in agency budget requests (earmarks) in FY 2008 appropriations bills. The data in this analysis highlight AAAS interpretations of R&D earmarks in House, Senate, and final 2008 appropriations. The complete series of AAAS R&D Funding Updates 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.)

- **Congress has resumed earmarking R&D projects in 2008 appropriations, after a one-year moratorium on most domestic earmarks in 2007.** The final 2008 omnibus appropriations bill designated \$939 million for congressionally designated, performer-specific R&D projects in 2008 (excluding the Department of Defense (DOD)), down from \$1.5 billion in 2006 and also down from previous years (see Figure 1 and Table A).

- The 110<sup>th</sup> Congress has instituted new disclosure requirements for earmarks that have made previously hidden DOD earmarks more visible. In the Defense appropriations bill enacted in November, Congress earmarked \$3.5 billion in DOD R&D projects out of the \$77.8 billion total DOD R&D portfolio, most of which (\$2.2 billion) would go to “S&T” projects. **In all, federal R&D earmarks total \$4.5 billion in 2008, spread over 2,526 projects.**

- The Department of Energy (DOE) and the U.S. Department of Agriculture (USDA) are the most heavily earmarked domestic R&D agencies, while the National Institutes of Health (NIH) and the National Science Foundation (NSF) remain earmark-free (see Table A). R&D earmarks make up nearly 10 percent of the energy R&D portfolio, and nearly 18 percent of USDA’s extramural research portfolio. After being earmark-free for the first years of its existence, the Department of Homeland Security (DHS) would get \$82 million in R&D earmarks in 2008.

- Congressional appropriators added more money for R&D earmarks than they added to the overall budget request for R&D. The \$893 million in nondefense R&D earmarks (excluding DOD and DOE defense) is more than the \$786 million Congress added to the President’s request for nondefense R&D.

- R&D earmarks are geographically concentrated. The top 10 state recipients of R&D earmarks receive 44 percent of all earmarked funds (see Figure 2). The top 10 states are a mixture of the most populous states and states with politically powerful congressional appropriators.

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

On December 26, President Bush signed into law the 2008 omnibus appropriations bill (HR 2764) containing final versions of 11 of the 12 2008 appropriations bills. In November, the Defense appropriations bill covering DOD appropriations was enacted separately. (For full details of federal R&D in final 2008 appropriations, please see the AAAS FY 2008 Appropriations Summary Update available on the AAAS R&D Web site). The two bills together contain \$4.5 billion in R&D earmarks, significantly more than in previous years, primarily because of improved disclosure of DOD earmarks (see Table A and Figure 3). Excluding DOD, the earmark totals in 2008 are comparable or less than in previous years except for 2007, when Congress had a moratorium on most non-DOD earmarks (see Figure 1).

Within federal appropriations for R&D are R&D earmarks of unrequested, congressionally designated performer-specific R&D projects contained in legislative language or committee report language attached to appropriations bills. These projects are added to agencies’ requested budgets as part of the annual give-

and-take between Congress and the Executive Branch over the size and shape of agencies' budgets. The current 110<sup>th</sup> Congress has made reforming the earmarking process a priority, and has promised to reduce the number and amount of earmarks from previous years and has also promised to make the earmarking process more transparent.

- **R&D earmarks total \$939 million for non-DOD programs in the 2008 omnibus appropriations bill, up from \$529 million in earlier House appropriations and \$628 million in earlier Senate appropriations but 20 percent less than the two earlier sets of earmarks combined (see Table A and Figure 1).** The R&D earmarks make up 1.4 percent of R&D appropriations in the omnibus bill, but in the November DOD appropriation earmarks make up 4.5 percent of DOD R&D.

- Among domestic programs, R&D earmarks are found primarily in the Department of Energy (DOE; \$348 million) and the U.S. Department of Agriculture (USDA; \$269 million; see Figure 3). There would also be significant dollars for earmarked projects in the National Aeronautics and Space Administration (NASA; \$83 million), the National Oceanic and Atmospheric Administration (NOAA; \$45 million), and the previously earmark-free Department of Homeland Security (DHS; \$82 million).

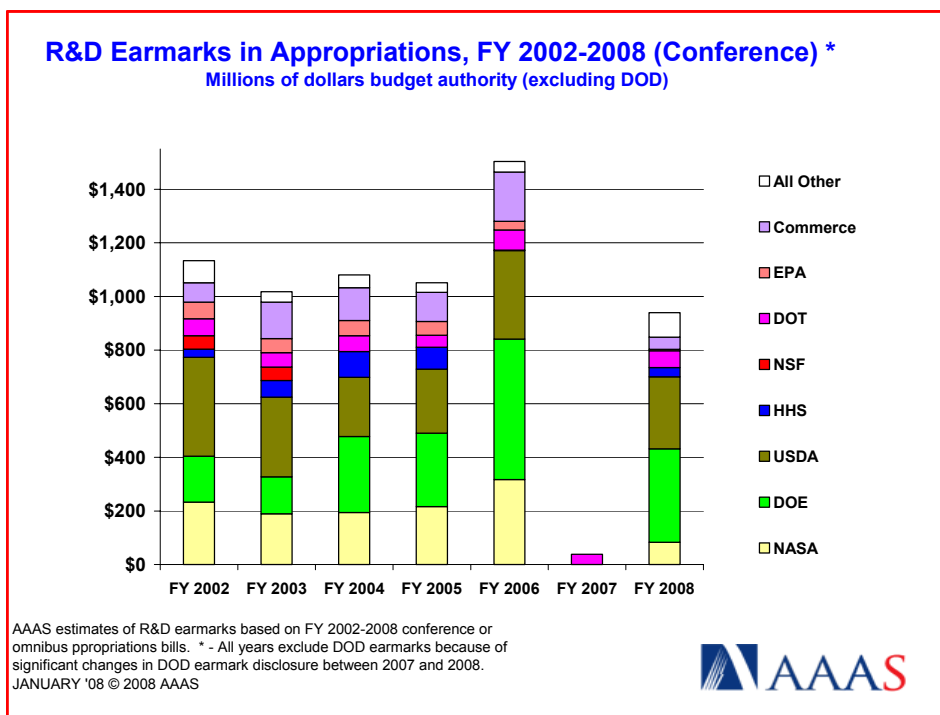


Figure 1. (click on image for PDF)

- Congressional appropriators added more money for R&D earmarks than they added to the overall budget request for R&D. Nondefense R&D earmarks (excluding DOD and DOE defense) totaling \$893 million are more than the \$786 million Congress added to the President's request for nondefense R&D. In order to make room for earmarks, congressional appropriators cut the President's 2008 request overall for nondefense R&D, although there were many changes to the request so that some R&D programs received more than requested.

- On the defense side, earmarked dollars far exceed the total dollars Congress added to the budget request. Congress added \$2.1 billion to the Pentagon request for "S&T" ("6.1" plus "6.3" programs and medical research, comprising basic and applied research and early technology development), but added \$2.2 billion for earmarked R&D projects, resulting in a net cut to the request for non-earmarked DOD projects. In DOD's weapons development programs ("6.4" and higher), Congress made program cuts to several development projects while adding \$1.3 billion in earmarks, for another net cut to the request. Combining the two, congressional DOD R&D earmarks of \$3.5 billion far exceed the \$1.7 billion Congress added to the total DOD R&D request for 2008 (see Table A).

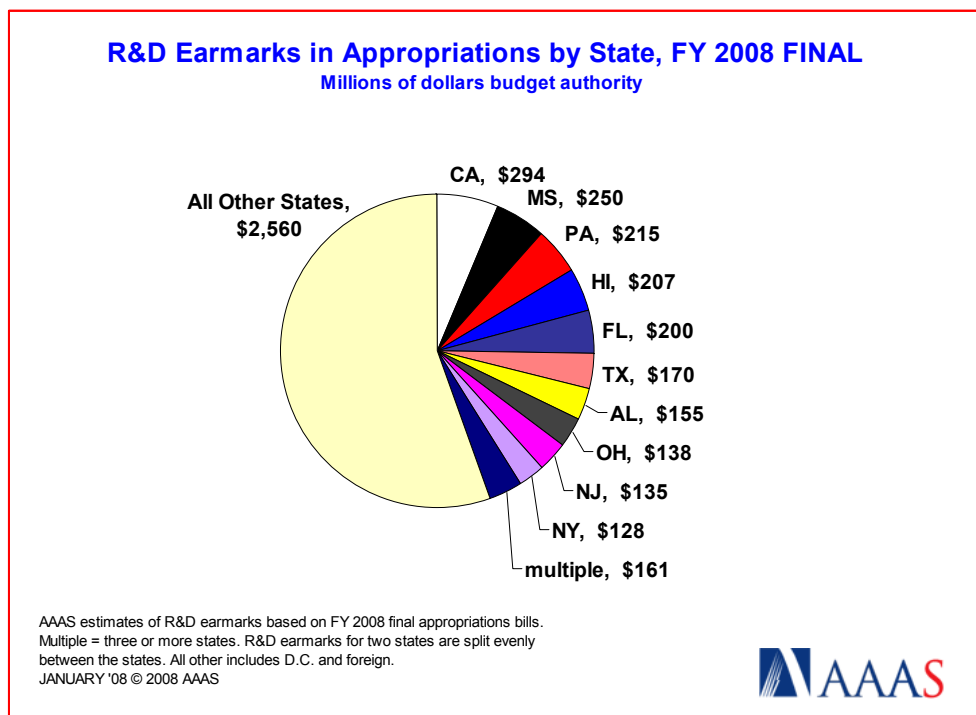


Figure 2. (click on image for PDF)

- **The top 10 state recipients of R&D earmarks receive nearly half of the total amount (see Figure 2).** Excluding earmarks that are divided among 3 or more states, the top 10 state recipients receive 44 percent of all R&D earmarks in 2008 by value. The top 10 states are a mixture of the largest, most populous states and smaller states with members of Congress in key appropriations committee chairmanships. The improved disclosure of earmarks instituted by the current Congress enables earmarks to be more easily categorized by performer and state. The AAAS R&D web site now has a searchable, sortable spreadsheet cataloging all 2008 R&D earmarks in House, Senate, and now final 2008 appropriations by amount, state, performer or project, and agency, including all 2,526 R&D earmarks in final 2008 appropriations. (Click here to download an Excel spreadsheet of House, Senate and final 2008 R&D earmarks.)

- **Some agencies remain earmark-free.** The **National Science Foundation (NSF)** and the **National Institutes of Health (NIH)** remain earmark-free in FY 2008 appropriations. Traditionally, NIH and NSF's research accounts have been free of earmarks, although in some years NSF construction projects are earmarked. But although DHS remained earmark-free for the first three years of its existence, one small earmark appeared in FY 2007 appropriations and in FY 2008 Congress earmarked several projects for a total of \$82 million, nearly 8 percent of total DHS R&D.

- **Only in USDA do earmarks make up more than 1 in 10 total R&D dollars,** unlike in previous years when earmarks in selected USDA, NASA, and DOE programs sometimes made up 1 out of every 5 R&D dollars (see Table A). R&D earmarks total 18 percent of all extramural research in the Cooperative State Research, Education, and Extension Service (CSREES), making these a significant drain on resources that might have gone to competitively awarded research grants or formula-based research funding. Congress also earmarked 12.5 percent of R&D funding in the Agricultural Research Service (ARS), USDA's intramural research arm. Without these earmarks, USDA R&D funding in 2008 would fall compared to (earmark-free) 2007 funding. Earmarks for energy R&D make up 9.6 percent of the total portfolio, but the impact of these earmarks is softened somewhat by the remarkable 23 percent growth in total DOE energy R&D, allowing nearly every energy R&D area to receive substantial increases, even before earmarks. On the defense side, 12 percent of the Army's R&D budget is earmarked in 2008, a far greater impact than the other services or the Defense Agencies.

- The **DOD** R&D portfolio contains \$3.5 billion in R&D earmarks 2008, dramatically higher than in previous years' AAAS analyses because improved congressional disclosure of earmarks has made many previously hidden earmarks more visible (see Figure 3). By several independent accounts, however, total DOD earmarks decline in 2008 from earlier years. The majority of earmarks go to the "S&T" accounts. In basic research ("6.1"), 89 percent of the \$185 million Congress added to the budget request went to earmarks, to make up 10 percent of the total DOD basic research portfolio. In applied research ("6.2" plus medical research), the \$896 million in earmarks make up 86 percent of all additions to the Pentagon request. In the "6.3" category, the \$1.1 billion in earmarks would be more than the net additions to the request because of offsetting cuts in other programs. As in previous years, the Army would get nearly half the earmarks (see Figure 3 and Table A), followed by the Navy, the Defense Agencies, and the Air Force.

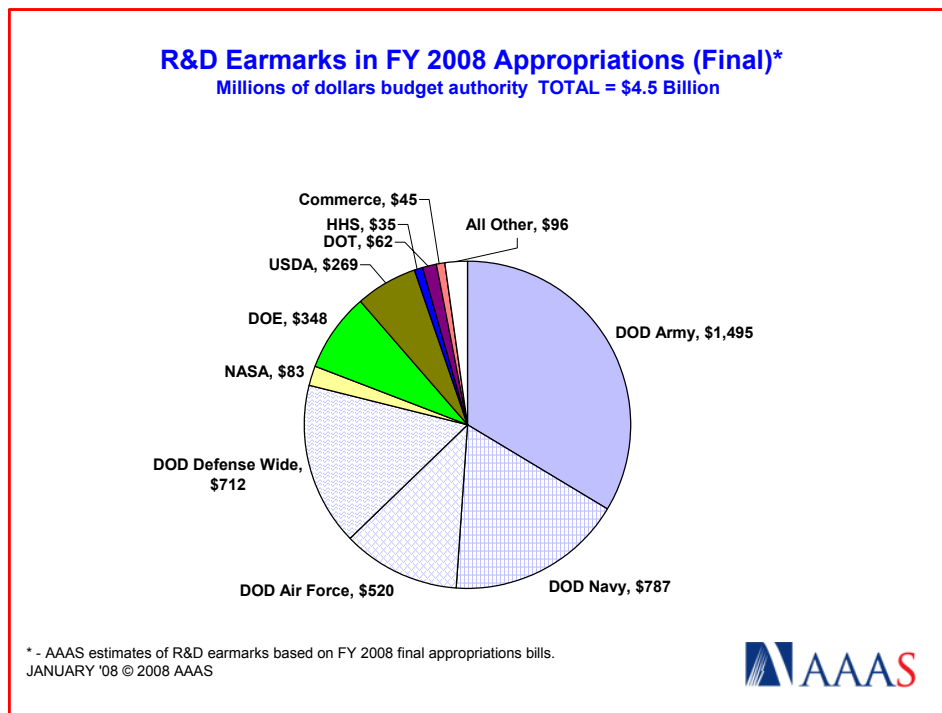


Figure 3. (click on image for PDF)

### Definitions: What is an R&D Earmark?

For the purposes of this analysis, R&D earmarks are defined as "congressionally designated performer-specific R&D projects not included in agency budget requests." The earmarks appear in either legislative language contained in appropriations bills, in which case they have the force of law, or appear in committee report language accompanying appropriations bills, in which case they are technically advisory. For all practical purposes, however, agencies usually follow the instructions from Congress contained in committee report language, including earmarks. When Congress designates a specific performer or performers for a particular R&D project, these are counted as earmarks; because AAAS definitions of R&D include investments in R&D facilities construction, the earmarks in this analysis also include funds provided to specific institutions for investments in R&D major capital equipment, and also construction funds for specific R&D facilities. Starting with this year's appropriations bills, Congress has instituted new disclosure requirements for earmarks so that all performer-specific congressional additions to appropriations bills are disclosed by amount and by congressional sponsor(s).

AAAS definitions of R&D earmarks have tended to undercount earmarks in the past, because they include explicitly performer-specific projects only. In the FY 2008 appropriations season, however, the number of counted R&D earmarks expands dramatically, especially in DOD, as the new congressional disclosure requirements made visible earmarks that were previously hidden in non-performer specific language. Congress often designates funding for a specific research project without identifying a location explicitly, but on the implicit understanding that only one organization is capable of performing it or has already been

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selected to do earlier work in that area. Such topical earmarks are common in DOD's R&D portfolio, where earmarks for weapons projects or technology areas are understood to steer the funds to a specific performer with demonstrated expertise or past experience. While such earmarks were difficult to identify in earlier years, in 2008 appropriations the tagging of each project with a congressional sponsor makes the location of the intended performer visible.

Congress often designates funding for specific projects or research topics; in some cases such as in DOD's peer-reviewed medical research programs the topics may be congressionally designated but the performers are selected competitively, so they are not counted as earmarks.

These figures include earmarks to all categories of R&D performers. While discussion of the earmarks issue tends to center on earmarks to academic institutions, this analysis also includes R&D earmarks to other categories of performers, most prominently federal laboratories. While academic institutions receive the bulk of the earmarks for nondefense R&D in Table A (defense R&D earmarks tend to favor industrial performers), federal laboratories, sometimes located on university campuses, also receive earmarks as well as some nonprofits and industrial firms.

The earmarks counted in this analysis are a subset of R&D in the federal budget as tracked by AAAS. Thus, the earmarks in this analysis do not include non-R&D projects that may go to R&D performers, for example educational or extension projects awarded to universities and colleges. Some of these earmarks may come from the same budget accounts that fund R&D earmarks. They also do not include construction funds for non-R&D facilities, except when they are provided in R&D accounts.

### **Purpose of the AAAS Analysis**

The analysis is intended to provide timely and unbiased information for further analysis and debate on the allocation of R&D resources in the federal budget process, and the R&D Budget and Policy Program undertakes this analysis to provide timely and relevant information for policymakers and members of the science and engineering community who are concerned about methods of allocating R&D resources. It attempts to provide additional information to supplement existing AAAS coverage of R&D in the appropriations process. The analysis is not a comprehensive inventory of earmarks. Also, because earmarks are in the eye of the beholder and are ill-defined (unlike the standardized, longstanding definitions for R&D used by AAAS and federal agencies) this analysis relies on AAAS interpretations and judgment calls on a project-by-project basis of what is or is not an R&D earmark. In doing this analysis, AAAS does not take a position on the relative merits of agency requests vs. congressional earmarks, or of competitively awarded funds vs. earmarked funds.

### **Conclusions**

There has been much debate and attention on the practice of congressional earmarking in this 110<sup>th</sup> Congress, primarily as a result of the Democratic majority promising to rein in the freewheeling earmarking practices of past Congresses. To start the year, the Democratic majority finalized FY 2007 appropriations with a one-year moratorium on most domestic R&D earmarks, and then set up a more transparent process for allocating and disclosing earmarks in 2008 appropriations. After some fits and starts, the new earmark disclosure process was in place for the final 2008 appropriations bills, with clear lists of projects, their sponsors, and their intended beneficiaries. But although earmarked R&D funding declines in 2008 compared to previous years, in a tight budget environment earmarks once again crowd out hoped-for increases in competitively awarded research programs.

- January 7, 2008  
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AAAS R&D web site: [www.aaas.org/spp/rd](http://www.aaas.org/spp/rd)



Table A. Earmarks for FY 2008 R&amp;D by Agency (revised 1/08)

**Table A. Congressional Earmarks for R&D by Agency and Program**  
**Congressional Action on R&D in the FY 2008 Budget (REVISED January 4, 2008)**  
**(budget authority in millions of dollars)**

	FY 2008 HOUSE			FY 2008 SENATE			FY 2008 FINAL		
	FY 2008 Earmarks	FY 2008 R&D	Earmarks % of R&D	FY 2008 Earmarks	FY 2008 R&D	Earmarks % of R&D	FY 2008 Earmarks	FY 2008 R&D	Earmarks % of R&D
Defense (military)	<b>2,296</b>	77,572	3.0%	<b>2,136</b>	76,326	2.8%	<b>3,514</b>	77,800	4.5%
<i>(Army)</i>	<b>1,063</b>	11,510	9.2%	<b>847</b>	11,292	7.5%	<b>1,495</b>	12,027	12.4%
<i>(Navy)</i>	<b>524</b>	17,719	3.0%	<b>467</b>	17,375	2.7%	<b>787</b>	17,767	4.4%
<i>(Air Force)</i>	<b>302</b>	26,164	1.2%	<b>363</b>	25,925	1.4%	<b>520</b>	25,903	2.0%
<i>(Defense Agencies)</i>	<b>382</b>	20,659	1.8%	<b>417</b>	20,190	2.1%	<b>654</b>	20,500	3.2%
<i>(Other)</i>	<b>25</b>	1,521	1.6%	<b>42</b>	1,543	2.7%	<b>58</b>	1,602	3.6%
National Aeron. & Space Admin.	<b>19</b>	12,959	0.1%	<b>70</b>	12,798	0.5%	<b>83</b>	12,476	0.7%
Energy	<b>190</b>	9,753	2.0%	<b>174</b>	9,995	1.7%	<b>348</b>	9,376	3.7%
<i>(Science programs)</i>	<b>70</b>	4,102	1.7%	<b>49</b>	4,141	1.2%	<b>123</b>	3,697	3.3%
<i>(Energy programs)</i>	<b>97</b>	1,803	5.4%	<b>100</b>	1,965	5.1%	<b>180</b>	1,873	9.6%
<i>(Defense programs)</i>	<b>23</b>	3,848	0.6%	<b>26</b>	3,889	0.7%	<b>46</b>	3,806	1.2%
Health and Human Services	<b>13</b>	30,459	0.0%	<b>36</b>	30,760	0.1%	<b>35</b>	30,037	0.1%
<i>(National Institutes of Health)</i>	<b>0</b>	29,067	0.0%	<b>0</b>	29,310	0.0%	<b>0</b>	28,653	0.0%
National Science Foundation	<b>0</b>	4,870	0.0%	<b>0</b>	4,888	0.0%	<b>0</b>	4,530	0.0%
<i>(Major Research Equipment)</i>	<b>0</b>	245	0.0%	<b>0</b>	245	0.0%	<b>0</b>	220	0.0%
Agriculture	<b>250</b>	2,289	10.9%	<b>141</b>	2,343	6.0%	<b>269</b>	2,301	11.7%
<i>(Agricultural Res. Service)</i>	<b>133</b>	1,158	11.5%	<b>52</b>	1,212	4.3%	<b>148</b>	1,186	12.5%
<i>(CSREES)</i>	<b>115</b>	657	17.6%	<b>80</b>	662	12.0%	<b>114</b>	654	17.5%
<i>(Forest Service)</i>	<b>0</b>	347	0.0%	<b>5</b>	344	1.4%	<b>3</b>	337	1.0%
Interior	<b>3</b>	680	0.5%	<b>17</b>	661	2.5%	<b>6</b>	661	0.9%
<i>(U.S. Geological Survey)</i>	<b>1</b>	602	0.2%	<b>10</b>	581	1.7%	<b>1</b>	583	0.2%
Transportation	<b>48</b>	836	5.7%	<b>61</b>	847	7.2%	<b>62</b>	852	7.3%
Environ. Protection Agency	<b>0</b>	620	0.0%	<b>7</b>	566	1.2%	<b>5</b>	542	1.0%
Commerce	<b>7</b>	1,233	0.6%	<b>53</b>	1,252	4.2%	<b>45</b>	1,115	4.1%
<i>(NOAA)</i>	<b>7</b>	585	1.2%	<b>53</b>	628	8.4%	<b>45</b>	573	7.9%
<i>(NIST)</i>	<b>0</b>	619	0.0%	<b>1</b>	595	0.2%	<b>1</b>	514	0.2%
Homeland Security	<b>0</b>	986	0.0%	<b>66</b>	1,059	6.2%	<b>82</b>	1,040	7.8%
Education	<b>0</b>	312	0.0%	<b>0</b>	338	0.0%	<b>0</b>	312	0.0%
Agency for Int'l Development	<b>0</b>	256	0.0%	<b>0</b>	215	0.0%	<b>0</b>	242	0.0%
Department of Veterans Affairs	<b>0</b>	891	0.0%	<b>0</b>	911	0.0%	<b>0</b>	891	0.0%
Housing and Urban Developmen	<b>0</b>	58	0.0%	<b>0</b>	59	0.0%	<b>0</b>	51	0.0%
Department of Justice	<b>0</b>	116	0.0%	<b>0</b>	104	0.0%	<b>0</b>	83	0.0%
All Other	<b>0</b>	396	0.0%	<b>4</b>	420	0.9%	<b>4</b>	404	0.9%
Total	<b>2,825</b>	144,287	2.0%	<b>2,764</b>	143,542	1.9%	<b>4,453</b>	142,715	3.1%
<b>TOTAL excluding DOD</b>	<b>529</b>	<b>66,714</b>	<b>0.8%</b>	<b>628</b>	<b>67,216</b>	<b>0.9%</b>	<b>939</b>	<b>64,914</b>	<b>1.4%</b>

AAAS estimates of R&D in FY 2008 House, Senate and final appropriations bills. Includes conduct of R&D and R&D facilities.

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

**"Earmarks" are AAAS interpretations of unrequested, congressionally designated, performer-specific R&D projects contained in legislative language or committee report language in appropriations bills.**

Earmarks do not include non-R&D congressionally designated projects.

FY 2008 columns represent earmarks in report language accompanying House, Senate, and conference (omnibus) versions of appropriations bills.

**December 19, 2007 (revised January 4) - AAAS estimates of House, Senate, and conference (omnibus) FY 2008 appropriations bills.**