Federal Research and Development Funding in the 2009 Budget

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February 14, 2008
for the AAAS Annual Meeting
AAAS R&D Budget and Policy Program
http://www.aaas.org/spp/rd

See the “What’s New” section for the latest updates; see the “Seminars and Presentations” section for copies of this presentation.
THE 2009 BUDGET

- The President has proposed a $3.1 trillion budget for FY 2009.
- The budget deficit could approach a record $500 billion this year and next year.
- To help control the deficit, the President proposes to keep domestic appropriations flat, and leaves war funding out of the budget beyond January 2009.
- The budget would balance in 2012, but only by extending domestic cuts, making cuts to health entitlements, assuming strong economic growth, ending war funding, and allowing the Alternative Minimum Tax to grow.
Composition of the Proposed FY 2009 Budget
Total Outlays = $3.1 trillion

Note: Projected Unified deficit is $407 billion.
Figures exclude most Iraq and Afghanistan military costs.
Source: AAAS, based on Budget of the United States Government FY 2009.
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Trends in Discretionary Spending, FY 1976-2013
in billions of constant FY 2008 dollars

FY 2008 data are estimates. FY 2009-2013 data are budget projections. FY 2009-
2013 figures exclude Iraq and Afghanistan military costs.
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THE 2009 BUDGET FOR R&D

- The American Competitiveness Initiative (ACI) continues for a third year, with large increases for NSF, DOE Science, and the NIST labs to catch up to a 10-year doubling track.
- Again, large increases for DOD weapons and NASA spacecraft development, but also increases for most R&D programs.
- The NIH budget would be flat, agricultural and environmental R&D agencies would decline.
Total R&D by Agency: FY 2009 Proposed
Budget Authority in billions of dollars

Total R&D = $145.4 billion (preliminary)

- DOD, $80.7
- HHS (NIH), $29.9
- NASA, $10.7
- DOE, $10.6
- USDA, $2.0
- NSF, $5.2
- All Other, $5.3
- DHS, $1.1

Source: AAAS, based on OMB R&D Budget Data and agency estimates for FY 2009.
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FY 2009 R&D Request (preliminary)
Percent Change from FY 2008

- USDA -16%
- DOE Science +17%
- NSF +16%
- DOT
- DOD "S&T" (DOD R&D in "6.1" through "6.3" categories plus medical research)
- DOD weapons (DOD R&D in "6.4" and higher categories)
- NIST
- DHS
- DOE energy
- NASA
- DOE defense
- NIH
- NOAA
- VA
- EPA
- USGS
- DOD "S&T"

Source: AAAS, based on OMB R&D data and agency estimates for FY 2009.
DOD "S&T" = DOD R&D in "6.1" through "6.3" categories plus medical research.
DOD weapons = DOD R&D in "6.4" and higher categories.
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FY 2009 R&D Request (without earmarks; preliminary)

Source: AAAS, based on OMB R&D data and agency estimates for FY 2009.
DOD "S&T" = DOD R&D in "6.1" through "6.3" categories plus medical research.
DOD weapons = DOD R&D in "6.4" and higher categories. R&D earmarks as tabulated by AAAS from final 2008 appropriations in December 2007 analyses. FEB. '08 PRELIMINARY © 2008 AAAS
Trends in Federal R&D, FY 1976-2009 *

in billions of constant FY 2008 dollars

Source: AAAS analyses of R&D in annual AAAS R&D reports. * FY 2009 figures are latest AAAS estimates of FY 2009 request. R&D includes conduct of R&D and R&D facilities. Data to 1984 are obligations from the NSF Federal Funds survey. GDP figures are from OMB, Budget of the U.S. Government FY 2009.

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Trends in Research by Agency, FY 1976-2009 *

in billions of constant FY 2008 dollars

Source: AAAS analyses of R&D in annual AAAS R&D reports.
* FY 2009 figures are latest AAAS estimates of FY 2009 request. Research includes basic research and applied research. 1976-1994 figures are NSF data on obligations in the Federal Funds survey. 1996-2008 figures are based on NSF data on obligations in the Federal Funds survey.
Life sciences - split into NIH support for biomedical research and all other agencies’ support for life sciences. 
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National Institutes of Health Budget by Institute, 1998-2009 *
(budget authority in billions of constant FY 2008 dollars)

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National Institutes of Health Research Project Grants

Avg. Award Size (2008=100%)
RPG Success Rate (%)
# of RPG's (right scale)

Source: NIH agency budget justification for FY 2009. Average proposed award size $408,800 in FY 2008. Other years adjusted for inflation.
National Science Foundation Budget, FY 2000-2009
(budget authority in billions of constant FY 2008 dollars)

Source: National Science Foundation, and latest AAAS estimates of FY 2009 budget. FY 2009 is budget request.
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NSF Budget by Directorate, FY 1998-2009
(budget authority in millions of constant FY 2008 dollars)

Source: National Science Foundation data. FY 2009 figures are President's request.
CISE includes new Office of Cyberinfrastructure.
R&D and non-R&D components included in directorate budgets.

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DOE Office of Science Programs, FY 1996-2009
(budget authority in millions of constant FY 2008 dollars)

Source: AAAS Reports on R&D, various years, and DOE historical budget documents. Adjusted for inflation using OMB's GDP deflators. BES includes Spallation Neutron Source funds. BER includes earmarks for most years (not 2007 through 2009). FY 2009 figures are the budget request.
Trends in NASA R&D, FY 1995-2009 *

in millions of constant FY 2008 dollars

Source: AAAS analyses of R&D in AAAS Reports VIII-XXXIII. * FY 2009 figures are latest AAAS estimates of FY 2009 request. Program budgets include associated support costs. R&D includes conduct of R&D and R&D facilities.

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Trends in DOD "S&T", FY 1994-2009 *
in billions of constant FY 2008 dollars

Source: AAAS analyses of R&D in annual AAAS R&D reports.
* - FY 2009 figures are latest AAAS estimates of FY 2009 request.
Medical research appropriated outside RDT&E; appropriated in "6.2" accounts before 1999.
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Trends in Defense R&D, FY 1976-2009 *

in billions of constant FY 2008 dollars

Source: AAAS analyses of R&D in annual R&D reports. * - FY 2009 figures are latest AAAS estimates of FY 2009 request. FY 2008 figures exclude pending supplementals. R&D includes conduct of R&D and R&D facilities. DOD S&T figures are not comparable for all years because of changing definitions.

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Federal Homeland Security R&D, by Agency
(budget authority in millions of constant FY 2008 dollars, FY 2002-2009)

Source: AAAS, based on Office of Management and Budget data. Includes conduct of R&D and R&D facilities.
Note: DOD expanded its reporting of HS spending beginning in 2005.
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Climate Change Science Program, by Agency
(budget authority in millions of constant FY 2008 dollars, FY 1997-2009)

FY 2009 figures represent President's request. NOAA and NASA figures back to 2003 have been recently revised to reflect program changes. Previous years' figures represent U.S. Global Change Research Program investments. FEB. '08 © 2008 AAAS
Trends in Federal R&D as % of GDP, FY 1976-2009 *

Source: AAAS analyses of R&D in annual AAAS R&D reports. * FY 2009 figures are latest AAAS estimates of FY 2009 request. R&D includes conduct of R&D and R&D facilities. Data to 1984 are obligations from the NSF Federal Funds survey. GDP figures are from OMB, Budget of the U.S. Government FY 2009.

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Shares of Total World R&D, 2007

US, $353

Germany, $65

France, $44

U.K., $40

Other EU, $101

Japan, $144

S Korea, $38

India, $42

All Other, $123

Total World R&D = U.S. $1,124 billion**

Total National R&D as % of GDP, 1991-2006

Source: National Science Foundation, National Patterns of R&D Resources and OECD, Main Science and Technology Indicators. Data not available for all nations for all years. DECEMBER '07 © 2007 AAAS
WHAT’S NEXT?

- Congress considers a $102+ billion 2008 war supplemental soon.
- By April, Congress will attempt to pass a FY 2009 budget resolution with spending targets. Will there be more money for domestic appropriations? Will this additional money hold up in final 2009 appropriations? (NO in FY 2008.)
- The Appropriations Committees will try to write and pass 12 2009 appropriations bills, but Congress may delay some or all of them until the next President takes office.
FOR MORE INFORMATION…

The AAAS R&D web site is
www.aaas.org/spp/rd