Federal Funding for Research and Development and the Federal Budget

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http://www.aaas.org/spp/rd

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Composition of the Proposed FY 2009 Budget
Total Outlays = $3.1 trillion

Net interest
Defense discretionary
Other mandatory
Medicaid
Medicare
Social Security
Nondefense discretionary
[Defense R&D]
[Nondefense R&D]

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

Data in fiscal years. Source: Budget of the United States Government, FY 2009. FY 2008 data are estimates. FY 2009-2013 data are budget projections. FY 2009-2013 figures exclude Iraq and Afghanistan military costs. FEB. '08 © 2008 AAAS
Total R&D by Agency: FY 2009 Proposed
Budget Authority in billions of dollars

DOD, $80.7
HHS (NIH), $30.0
NASA, $12.8
DOE, $10.5
All Other, $5.2
NSF, $5.2
USDA, $2.0
DHS, $1.0

Total R&D = $147.4 billion (revised)

Source: AAAS, based on OMB R&D Budget Data and agency estimates for FY 2009.
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Character of Defense and Nondefense R&D
FY 2009 Budget, Budget Authority in Billions

Source: AAAS, based on OMB R&D budget data for FY 2009 and agency budget justifications. Defense R&D = DOD + DOE defense + DHS defense programs.
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FY 2009 R&D Request
Percent Change from FY 2008

-15% -10% -5% 0% 5% 10% 15%

DOE Science +21%
NSF +16%
DOT
DOD weapons
NASA
NIST
DHS
DOE defense
DOE energy
NIH
VA
NOAA
EPA
USGS
DOD "S&T"
USDA

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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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.
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obligations in billions of constant FY 2008 dollars

Life sciences - split into NIH support for biomedical research and all other agencies' support for life sciences.
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R&D and Discretionary Outlays (Nondefense), 1962-2013

in billions of constant FY 2008 dollars

Source: AAAS, based on Budget of the U.S. Government FY 2009 Historical Tables. FY 2008 data are estimates. FY 2009-2013 data are budget projections.

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R&D Funding by Appropriations Bill
FY 2009 Request = $147 billion (revised)

Source: AAAS, based on estimates of R&D in FY 2009 budget.
Includes conduct of R&D and R&D facilities.
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R&D and Non-R&D Funding by Appropriations Bill
FY 2008 Request, Billions of dollars budget authority

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Federal R&D by Performer at Selected Agencies

billions of FY 2007 obligations (preliminary)

* NIH R&D - $27.8 billion.
Shown as two bars.

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Federal R&D Funding to Colleges and Universities FY 1963-2005
Obligations by agency in billions of constant FY 2008 $

R&D includes research, development, and R&D facilities support. Constant-dollar conversions based on OMB’s GDP deflators.
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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 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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Trends in DOE R&D, FY 1987-2009 *

in billions 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. R&D includes conduct of R&D and R&D facilities.

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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 Commerce R&D, FY 1990-2009 *

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. R&D includes conduct of R&D and R&D facilities.

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NIST
NOAA
Other Commerce
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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U.S. R&D Funding by Source, 1953-2006

expenditures in billions of constant 2006 dollars

Source: NSF, Division of Science Resources Statistics. (Data for 2005 and 2006 are preliminary.)
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Character of Federal and Industry R&D
2006 Data, Expenditures in Billions

Source: NSF, Division of Science Resources Statistics. (Data for 2006 are preliminary.)
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Shares of Total World R&D, 2007

- US, $353
- Japan, $144
- China, $175
- S Korea, $38
- Germany, $65
- U.K., $40
- Other EU, $101
- France, $44
- India, $42
- All Other, $123

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


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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
AAAS estimates of R&D earmarks based on FY 2002-2008 conference or omnibus appropriations bills. * - All years exclude DOD earmarks because of significant changes in DOD earmark disclosure between 2007 and 2008.

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