R&D in the FY 2017 Budget Request

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http://www.aaas.org/program/rd-budget-and-policy-program
Federal Spending Since FY 2010
Percent change from FY10 levels, constant dollars

*Includes EERE, OE, Fossil, Nuclear; excludes ARPA-E (regular appropriations began in FY 2011).

Based on AAAS analyses of historical OMB, agency, and appropriations data and the President's FY 2017 request. © 2016 AAAS
Composition of the Proposed FY 2017 Budget
Total Outlays = $4.1 trillion
outlays in billions of dollars

- Defense Discretionary*: $529
  - [Defense R&D]*: $79
- Nondefense Discretionary*: $557
  - [Nondefense R&D]*: $68
- Social Security: $967
- Medicare: $598
- Medicaid: $386
- Other Mandatory: $656
- Net Interest: $303
- Other: $656

*Approximately $4 billion for R&D is classified as mandatory spending. Figures are estimates.

Total R&D by Agency, FY 2017
budget authority in billions of dollars, including new mandatory

DOD, $73.2
HHS (NIH), $32.7
DOE, $17.4
NASA, $12.0
NSF, $6.5
USDA, $2.9
Commerce, $1.9
All Other, $6.2

Total R&D = $152.9 billion

Source: OMB R&D data, agency budget justifications, and other agency documents and data. R&D includes conduct of R&D and R&D facilities. © 2016 AAAS
Current Estimates of Total R&D in FY17 Budget
percent change from FY16, nominal dollars, including new mandatory proposals

- DOE Energy Programs
- DOE Defense
- US Geological Survey
- Transportation
- Agriculture
- National Science Foundation
- DOE Science
- NIST
- DOD Development
- Veterans Affairs
- National Institutes of Health
- Homeland Security
- NOAA
- Environ Protection Agency
- NASA
- DOD S&T
- TOTAL
- Defense
- Nondefense
- Basic Research

Based on AAAS analyses of OMB, OSTP and agency budget data. © AAAS
NEW Mandatory Funding in FY 2017

- $4.2 billion for R&D, all nondefense

- Select agency funding (including R&D and non-R&D spending):
  - $2.0 billion for NIST
  - $1.825 billion for NIH
  - $1.6 million for DOE*
  - $763 million for NASA*
  - $400 million for NSF
  - $325 million for USDA
  - $300 million for EPA*
  - $200 million for DOT R&D (plus additional non-R&D)*

*Some or all funding via to 21st Century Transportation Plan
Current Estimates of Total R&D in FY17 Budget
percent change from FY16, nominal dollars, including new mandatory proposals

Based on AAAS analyses of OMB, OSTP and agency budget data. © AAAS
Current Estimates of Total R&D in FY17 Budget

percent change from FY16, nominal dollars, excluding new mandatory proposals

Based on AAAS analyses of OMB, OSTP and agency budget data. © AAAS
Total R&D in the FY17 Budget by Function

percent change from FY 2016, nominal dollars, including new mandatory

- Applied Energy Programs: 38.6%
- Transportation: 22.8%
- Agriculture: 11.5%
- General Science (NSF, DOE SC): 6.4%
- Defense Activities: 4.0%
- Environment Agencies: 3.2%
- Health (NIH): 2.6%
- Justice (DHS): -0.5%
- Commerce (NIST): -2.7%
- Space: -4.6%
- TOTAL: 4.2%

Source: OMB R&D data, agency budget justifications, and agency budget documents. © 2016 AAAS
Base Budget R&D by Agency, FY 2017
budget authority in billions of dollars, excluding new mandatory proposals in FY 2017

- DOD, $73.2
- HHS (NIH), $30.9
- DOE, $16.6
- NASA, $11.3
- NSF, $6.2
- USDA, $2.6
- Commerce, $1.9
- All Other, $6.0

Total base budget R&D = $148.8 billion

Source: OMB R&D data, agency budget justifications, and other agency documents and data. R&D includes conduct of R&D and R&D facilities. © 2016 AAAS
Trends in Federal R&D, FY 1976-2017
in billions of constant FY 2016 dollars, excluding mandatory proposals in FY 2017

Source: AAAS analyses of historical budget and agency data and the FY 2017 request. R&D includes conduct and facilities. © AAAS | Feb. 2016
Trends in Federal R&D
As a percent of GDP

Source: AAAS analyses of historical budget and agency data and the FY 2017 request. GDP figures from OMB. R&D includes conduct and facilities. © AAAS
Agency Highlights: NIH

- $33.1 billion program level (+$825 million, +2.6%)
  - OR
- $31.3 billion program level (-$1 billion, -3.1%)
- Of the $1.825 billion in mandatory spending:
  - $825 million for cancer research, BRAIN Initiative, Precision Medicine
  - Remaining $1 billion to keep all other ICs flat
- 17.5% success rate in FY17

Source: NIH agency budget justifications. © 2016 AAAS
Agency Highlights: DOE

- **SC**: $5.7 billion (+6.1%)
  - OR
  - $5.6 billion (+4.2%)
  - Advanced computing; BER; BES all with moderate boosts
  - Domestic fusion energy research cut again (-15.5%)
    - While ITER boosted, again
- Applied programs: gains for EERE, ARPA-E, grid (20% or more for each)
  - 21st Century Clean Transportation Plan
  - Fossil cut, Nuclear flat
DOE Budgets Indexed to FY 2003
new budget authority in constant dollars

Source: Historical DOE data and the FY 2017 request. © 2016 AAAS
Agency Highlights: NSF

- $8.0 billion (+6.7%)
  - OR
- $7.6 billion (+1.3%)
- Base budgets for most directorates roughly flat
  - ENG: boosts for SBIR, ERCs
- BIO, MPS: infrastructure v. research?
- New research vessels

Source: NSF budget data. © 2016 AAAS
Agency Highlights: NASA

- NASA: $19 billion (-1.3%)
  - OR
- $18.3 billion (-5.3%)
- Mandatory spending ($763 million) directed to Science, Aeronautics, Space Technology, Exploration
- Familiar contours:
  - Priorities include Earth Science, Space Technology; also Heliophysics
  - Asteroid Retrieval Mission
  - Cuts for Planetary Science (Europa Mission), Exploration (SLS and Orion), Astrophysics

*Other* includes support, construction, OIG, and education programs. © 2016 AAAS
Other Notes

- DOD S&T: Basic research cut by 9.0%; DARPA +3.7%
- USDA: small changes at ARS; AFRI discretionary +7.1%, with an additional $325 million mandatory
- NIST, NOAA Research Office, USGS all increased to varying degrees
- Zika supplemental: $1.8 billion for CDC, NIH, others
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Federal Spending Since FY 2010

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R&D as a Share of GDP by Funder

Source: National Science Foundation, *National Patterns of R&D Resources* series. © 2015 AAAS
Research as a Share of GDP by Funder

Source: National Science Foundation, *National Patterns of R&D Resources* series. © 2015 AAAS
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