

# Environmental R&D in the 2009 Budget

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for the EPA Science Advisory Board

AAAS R&D Budget and Policy Program

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

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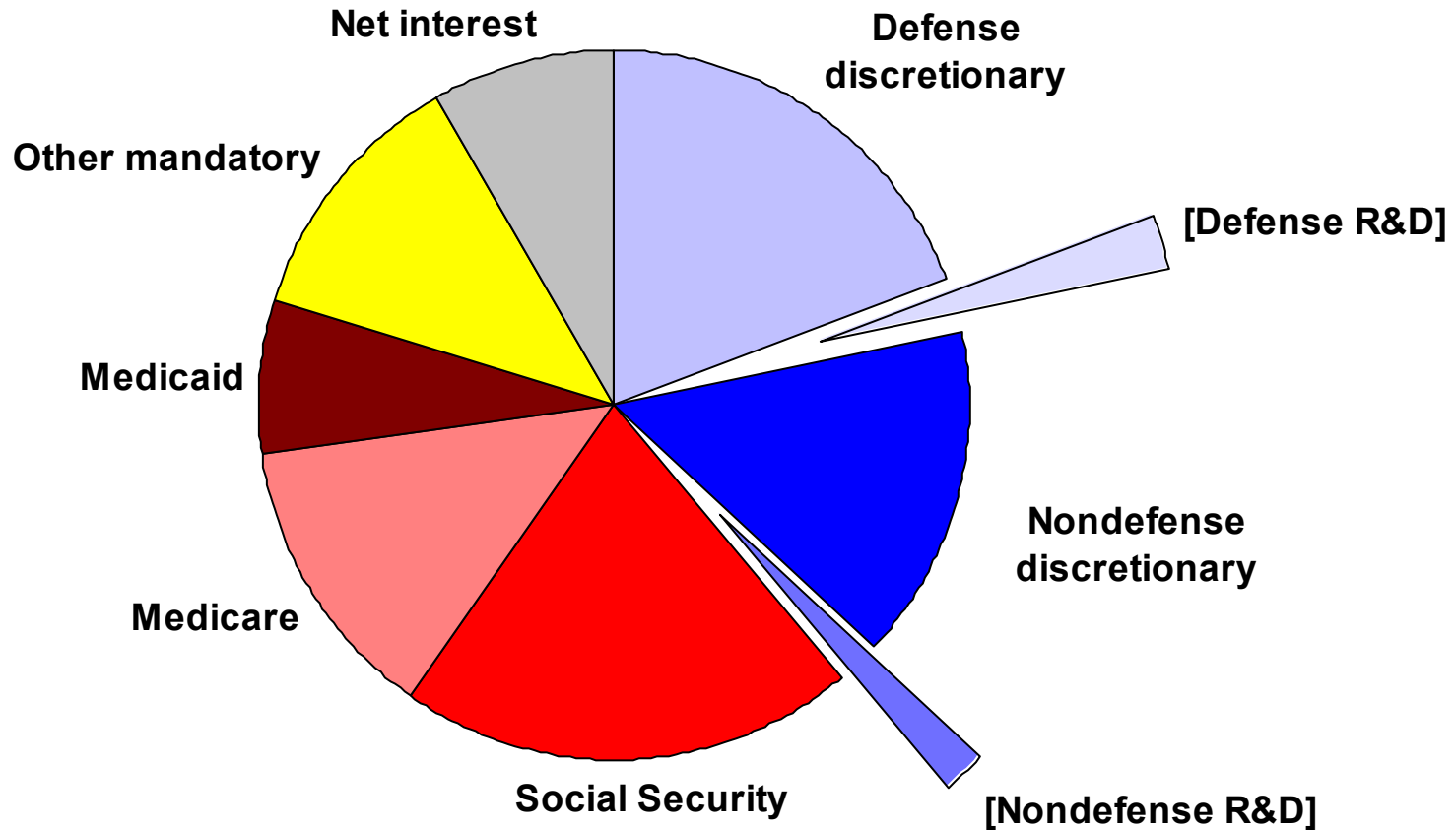


## THE 2009 BUDGET

- 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.
- Domestic spending in real terms has been flat since 2004, and would fall through 2013.

# Composition of the Proposed FY 2009 Budget

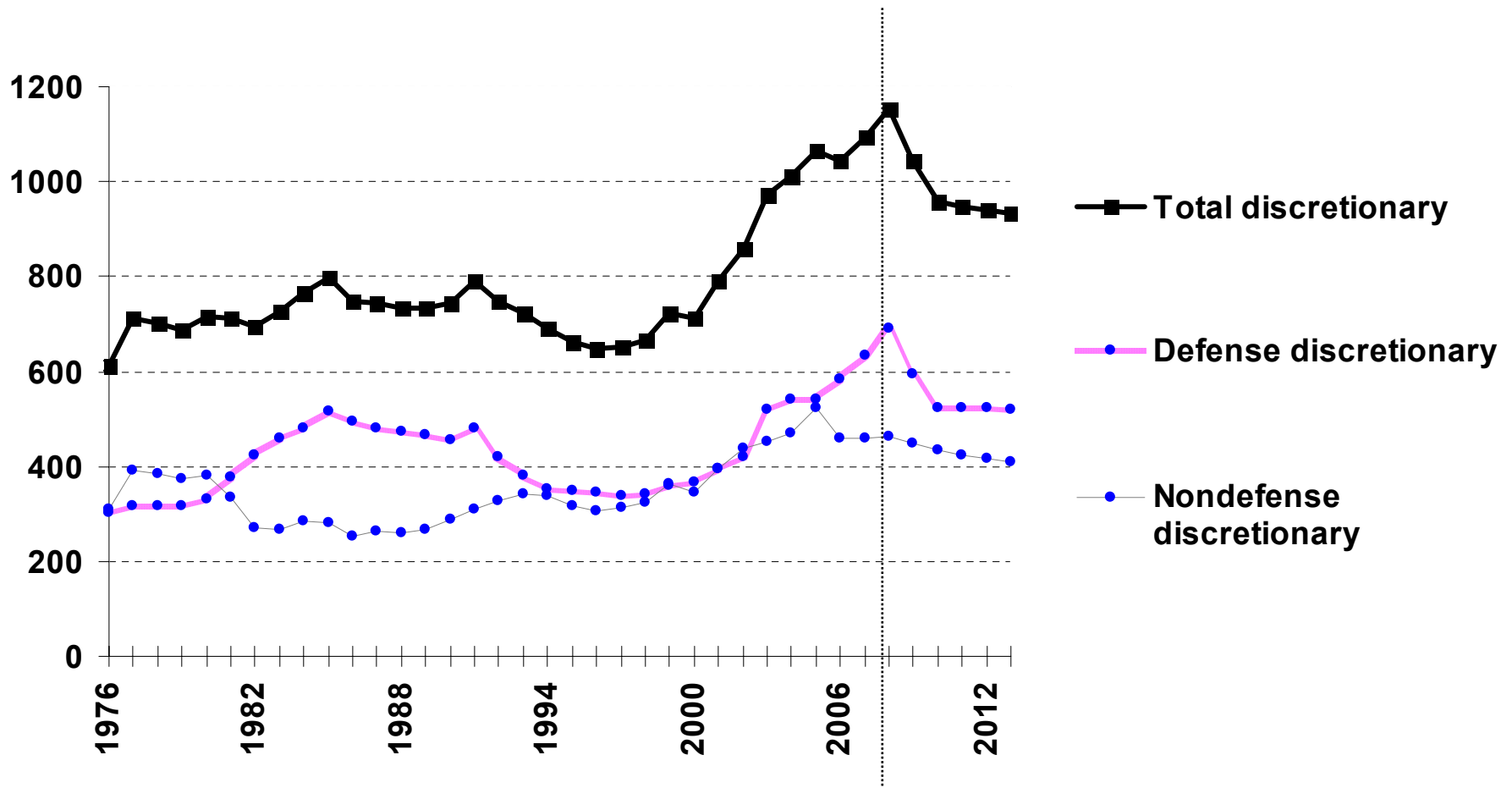
## Total Outlays = \$3.1 trillion



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



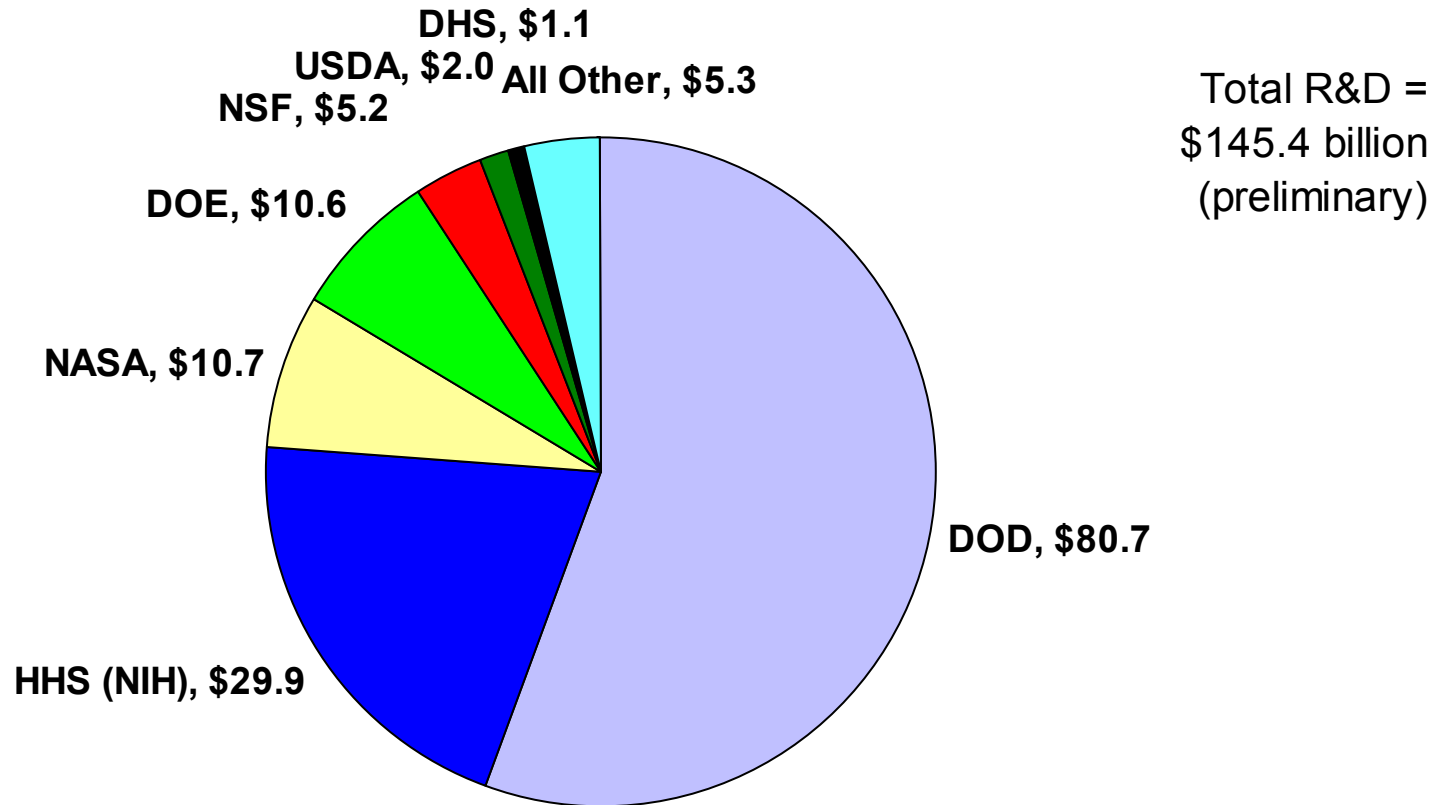
Data in fiscal years. Source: *Budget of the United States Government, FY 2009*.  
FY 2008 data are estimates. FY 2009-2013 data are budget projections. FY 2009-2013 figures exclude Iraq and Afghanistan military costs.  
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## THE 2009 BUDGET FOR R&D

- The American Competitiveness Initiative (ACI) continues for a third year, with large increases for basic physical sciences research in NSF, DOE Science, and the NIST labs to catch up to a 10-year doubling track.
- Again, there would be large increases for DOD weapons and NASA spacecraft development, but also increases for most R&D programs.
- But the NIH budget would be flat, and R&D in agricultural and environmental agencies would fall.

# Total R&D by Agency: FY 2009 Proposed

Budget Authority in billions of dollars



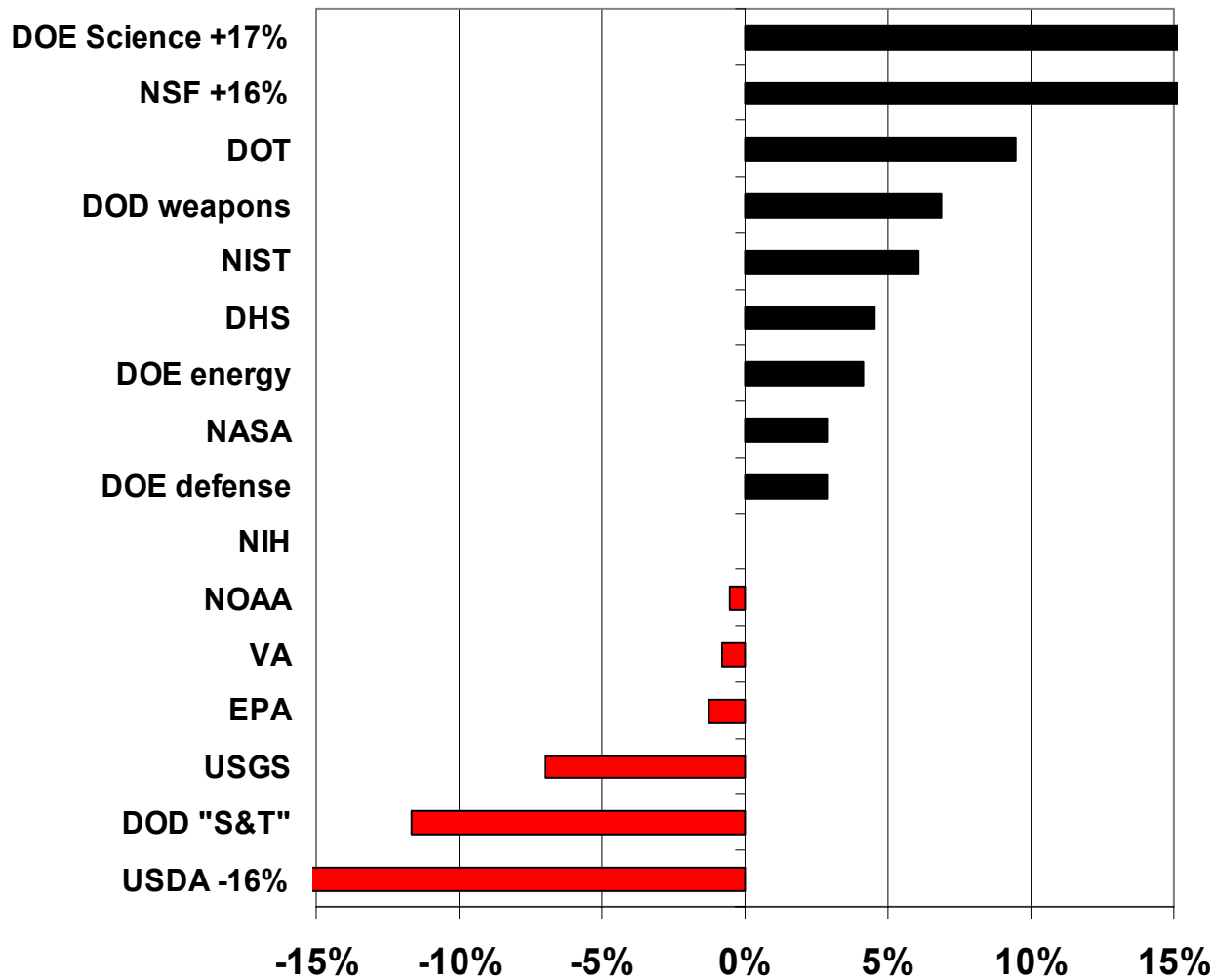
Source: AAAS, based on OMB R&D Budget Data and agency estimates for FY 2009.

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# FY 2009 R&D Request (preliminary)

Percent Change from FY 2008

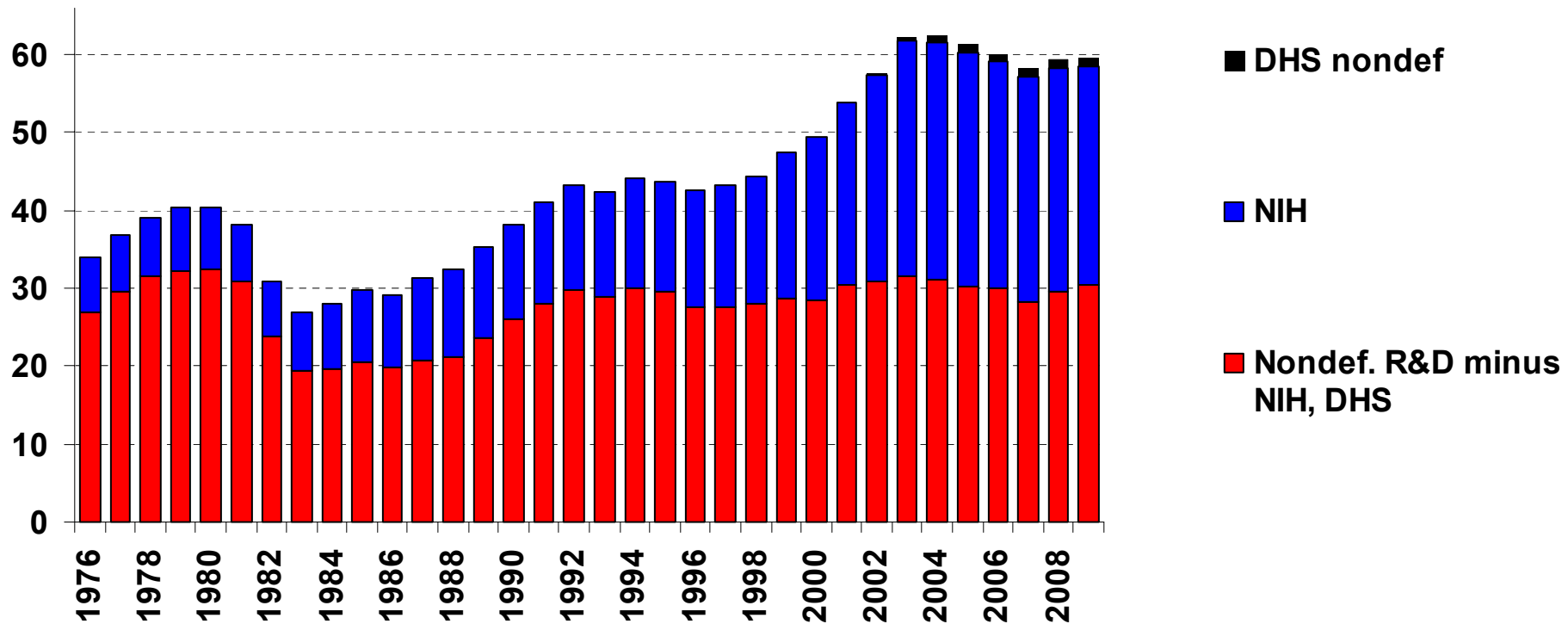


Source: AAAS, based on OMB R&D data and agency estimates for FY 2009.  
DOD "S&T" = DOD R&D in "6.1" through "6.3" categories plus medical research.  
DOD weapons = DOD R&D in "6.4" and higher categories.  
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# Selected Trends in Nondefense R&D, FY 1976-2009\*

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.

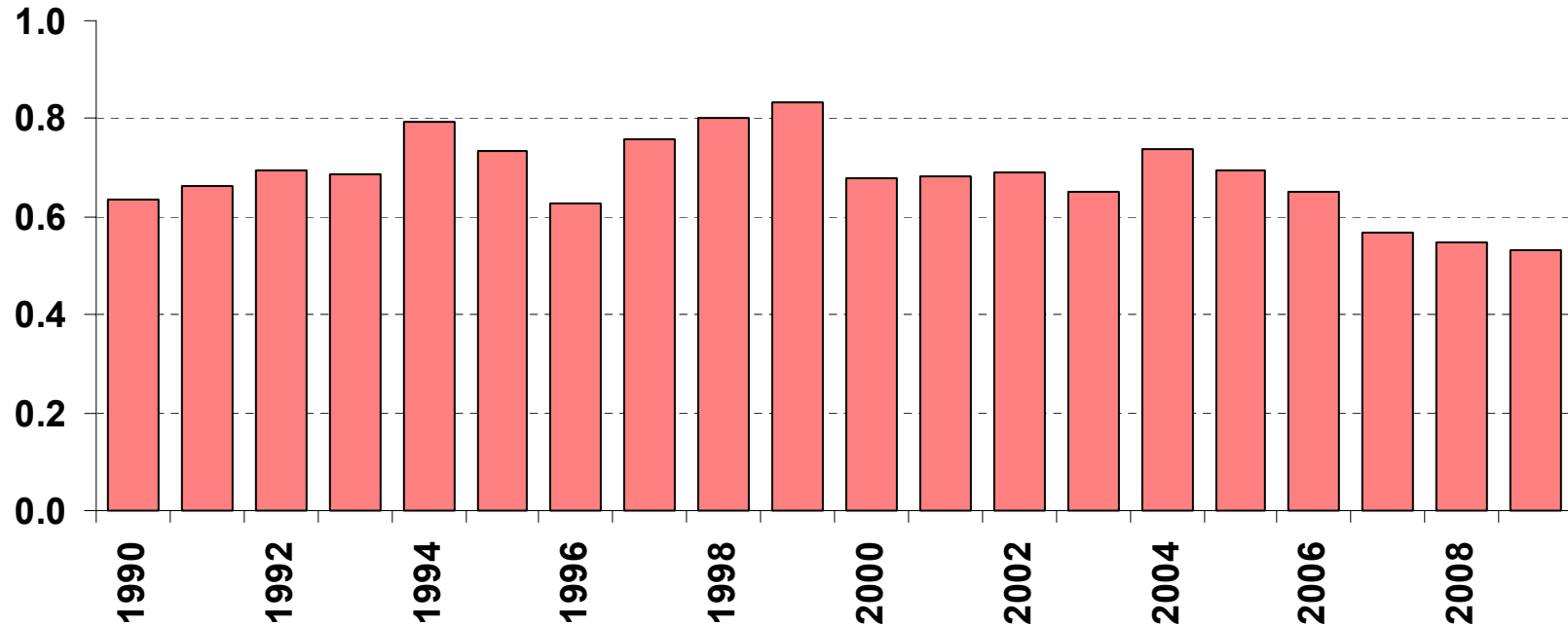
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# Trends in EPA R&D, FY 1990-2009 \*

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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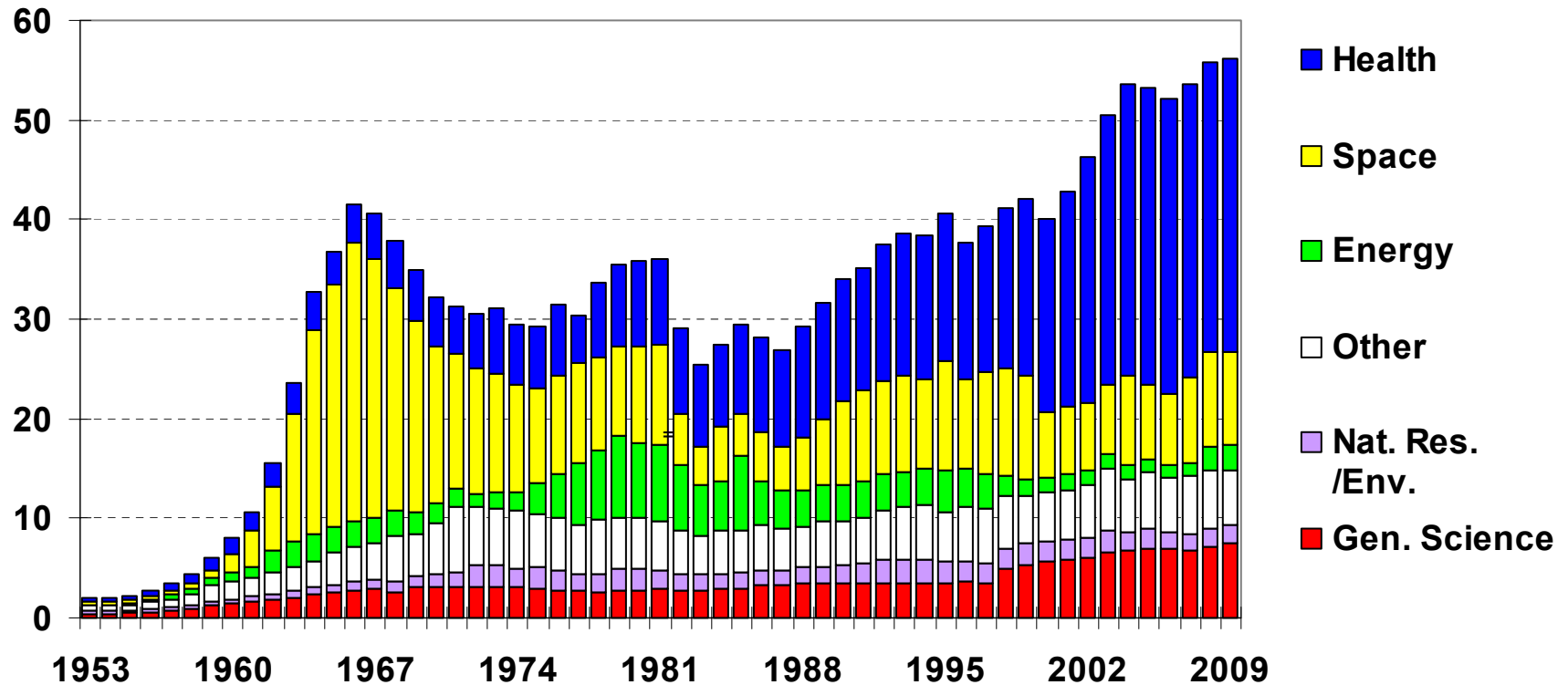


## ENVIRONMENTAL R&D IN THE BUDGET

- **Environmental R&D is a \$2.1 billion multi-agency effort:**
  - EPA
  - NOAA in Commerce
  - US Geological Survey in Interior
  - Corps of Engineers
  - Forest Service in USDA
- **In addition, R&D for other missions also contributes strongly to the environment: NASA, DOE energy programs and Bio. & Env. Research, USDA, NIEHS in NIH, etc.**
- **Total federal environmental R&D approaches \$8 billion.**
- **EPA and other agency research efforts focus on the environmental sciences and non-human biology.**
- **Funding trends have been downward or at best flat in recent years.**

# Trends in Nondefense R&D by Function, FY 1953-2009

outlays for the conduct of R&D, billions of constant FY 2008 dollars



Source: AAAS, based on OMB Historical Tables in *Budget of the United States Government FY 2009*. Constant dollar conversions based on GDP deflators. FY 2009 is the President's request.

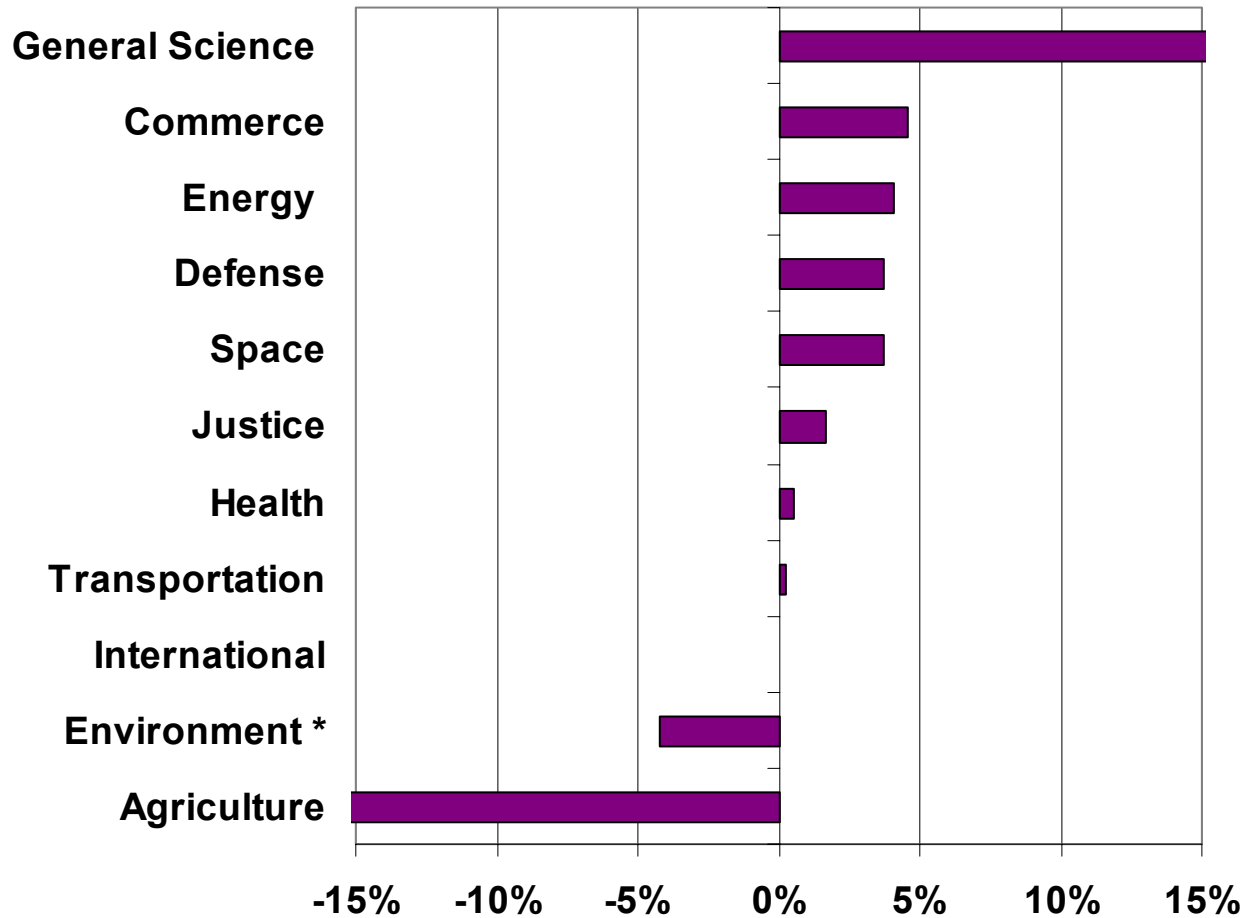
Note: Some Energy programs shifted to General Science beginning in FY 1998.

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# FY 2009 R&D Request by Mission (Preliminary)

Percent Change from FY 2008



\* - includes natural resources R&D

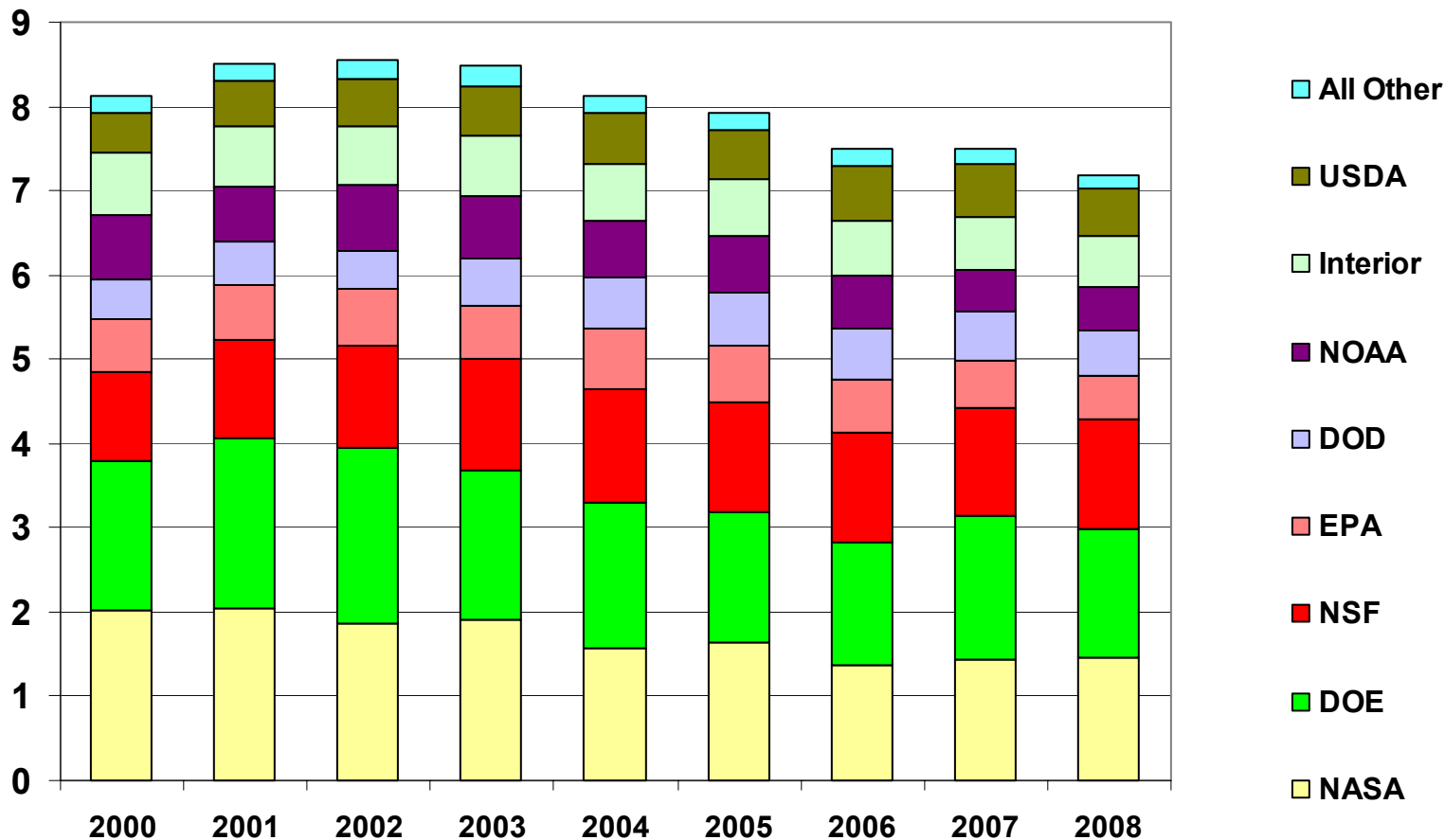
Source: AAAS, based on OMB and agency budget data.

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# Federal Environmental R&D, FY 2000-2008

billions of constant FY 2007 dollars budget authority



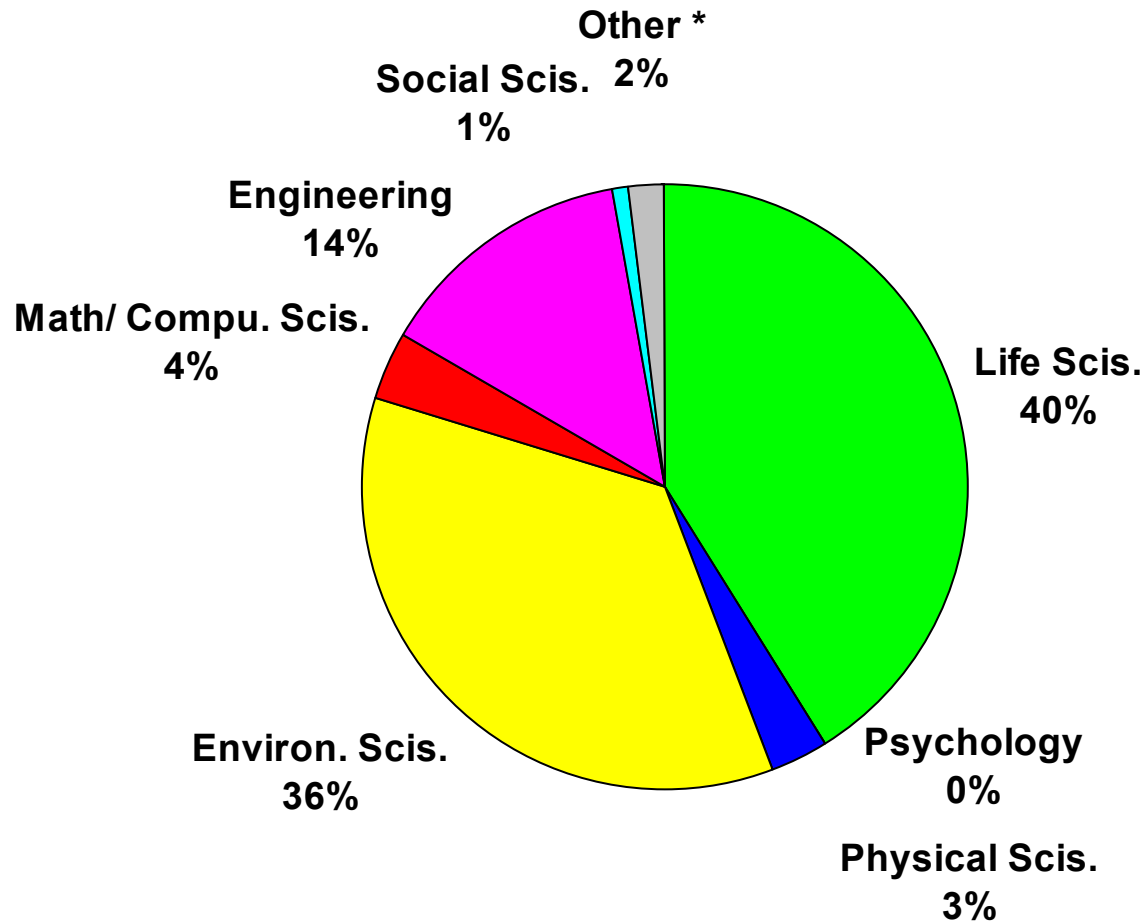
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Constant-dollar conversions based on OMB's GDP deflators.



# EPA Research in the FY 2007 Budget, by Discipline

(preliminary obligations)



**Total EPA  
Research  
Budget:  
\$453 million**

**(excludes  
development and  
R&D facilities)**

\* - Includes  
sciences not  
classified by  
discipline

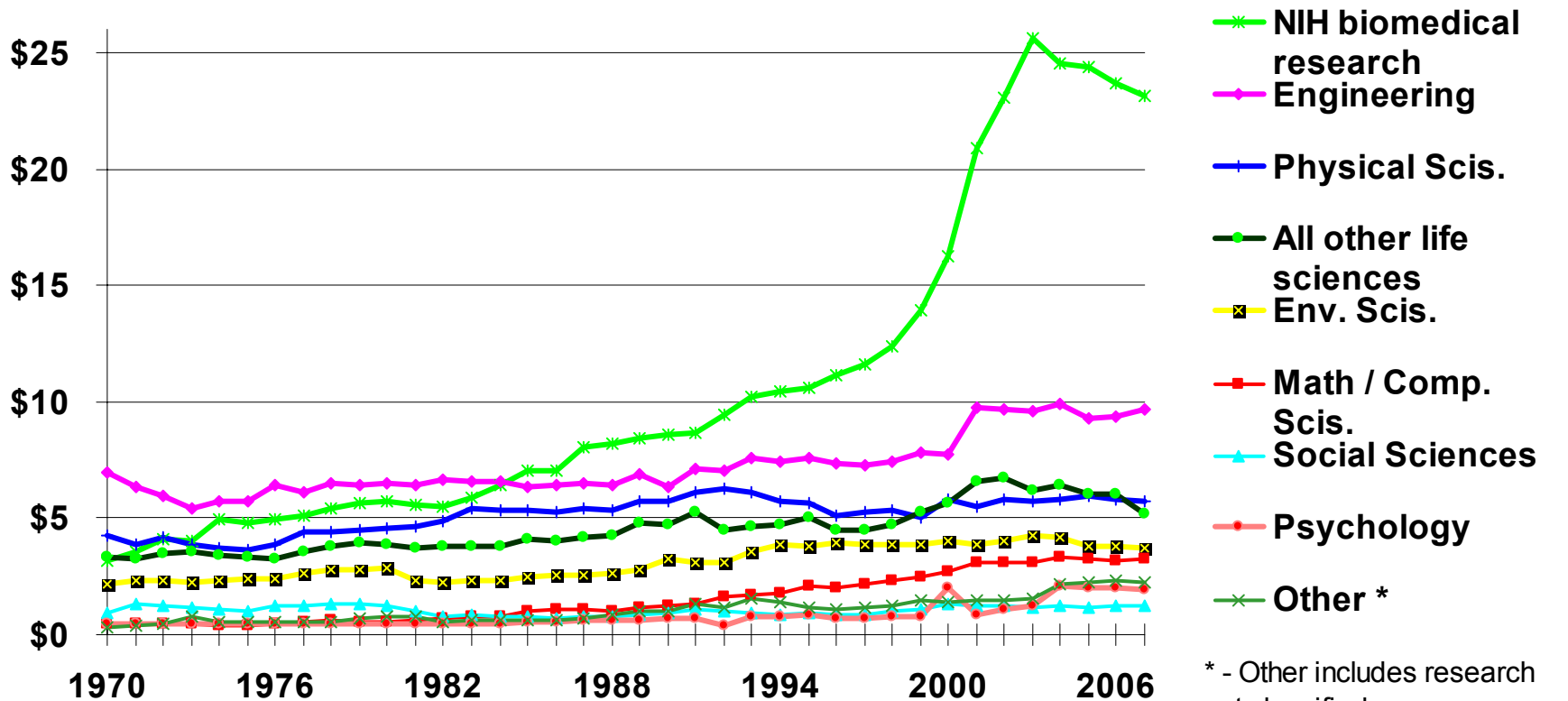
Source: National Science Foundation, *Federal Funds for Research and Development FY 2005, 2006, 2007, 2008.*

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# Trends in Federal Research by Discipline, FY 1970-2007

obligations in billions of constant FY 2008 dollars



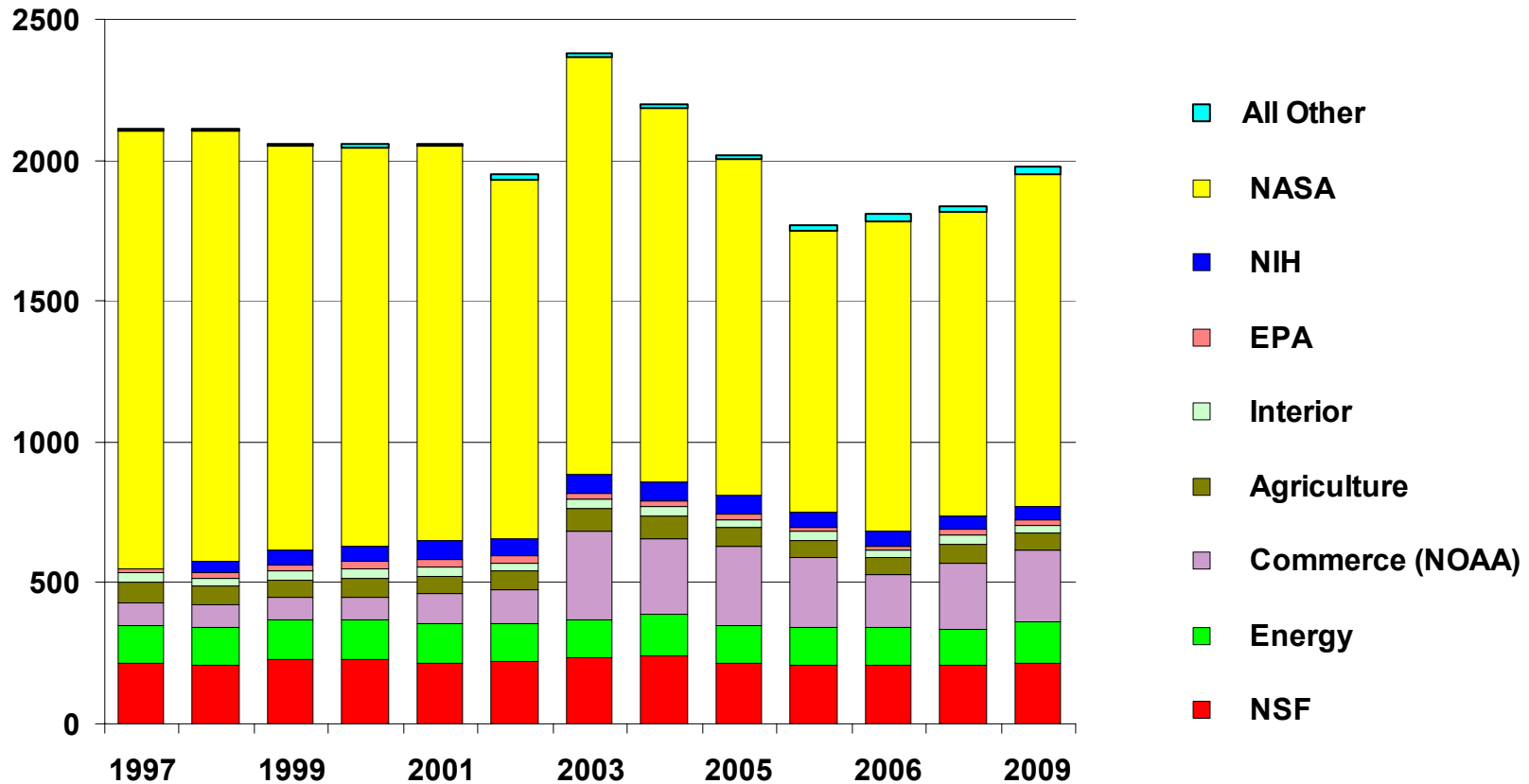
\* - Other includes research not classified (includes basic research and applied research; excludes development and R&D facilities)

Life sciences - split into NIH support for biomedical research and all other agencies' support for life sciences.  
 Source: National Science Foundation, *Federal Funds for Research and Development FY 2005, 2006, 2007, 2008*. FY 2006 and 2007 data are preliminary. Constant-dollar conversions based on OMB's GDP deflators. FEB. '08 © 2008 AAAS



# Climate Change Science Program, by Agency

(budget authority in millions of constant FY 2008 dollars, FY 1997-2009)



Source: Office of Management and Budget and U.S. Global Change Research Program reports. 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





## OUTLOOK FOR THE 2009 BUDGET

Environmental R&D faces tough budgets in coming years because of extremely tight domestic spending and competition from higher priorities such as the physical sciences and space.

Many environmental R&D programs face cuts. Congress will try to boost funding for some programs, especially climate change research, but the outcome will depend on whether Congress is successful in adding more money overall for domestic appropriations.

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](http://www.aaas.org/spp/rd)

The AAAS Forum on  
Science and Technology  
Policy is 8-9 May 2008  
in Washington, DC

## AAAS REPORT XXXII

Research & Development FY 2008

Intersociety Working Group

