

R&D Funding Outlook: The Stimulus, The Omnibus, and a First Look at FY 2010

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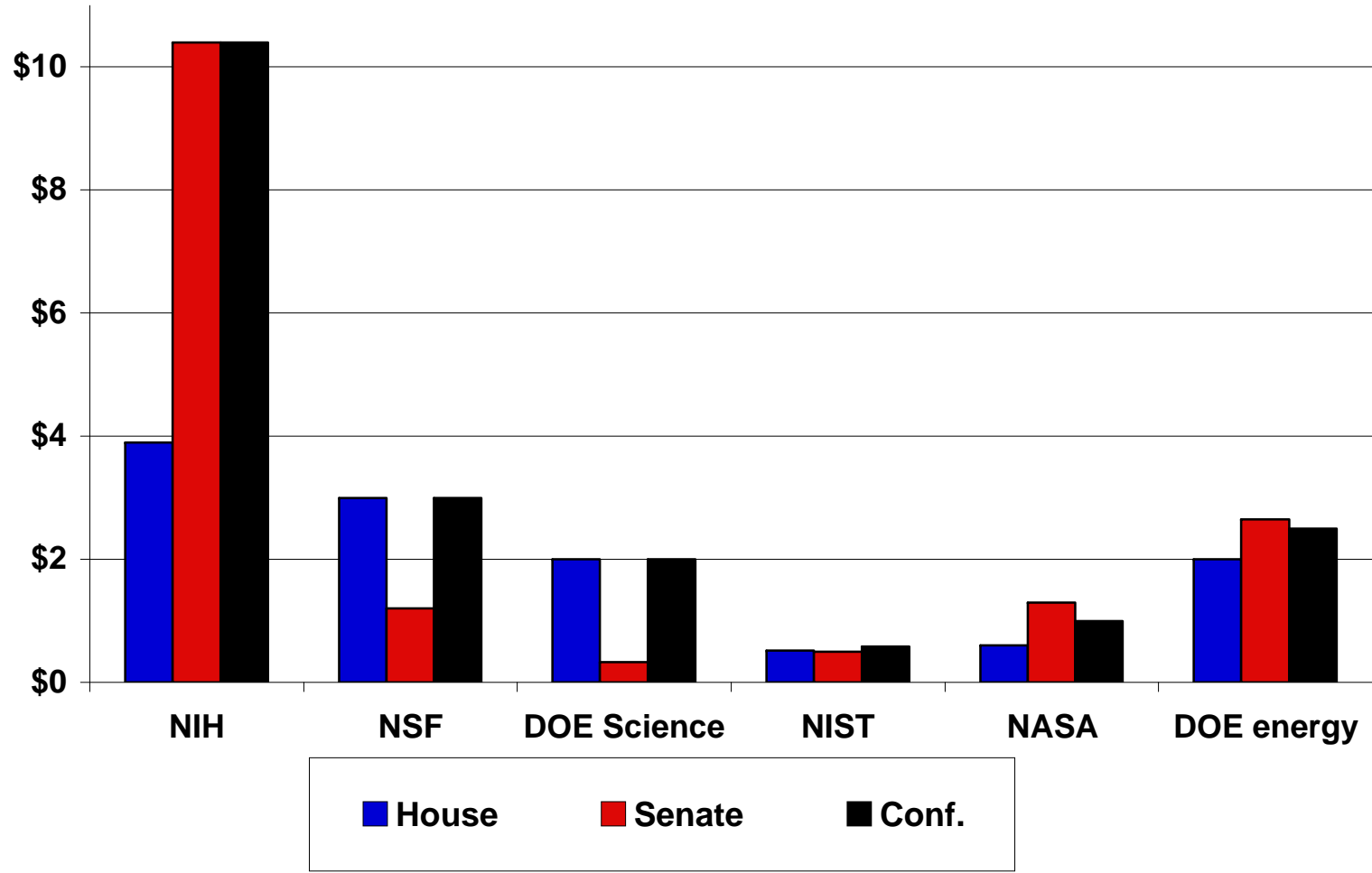
2009 AAAS Forum on S&T Policy



2009: A Very Unusual Year

- ARRA, the stimulus bill, signed Feb. 17, before FY 2009 Omnibus Appropriations bill was final
- A huge supplement to the budget passed BEFORE most of the original budget!
- Unprecedented increase for some agencies – e.g., NIH (36%)
- Conference committee chose higher of House & Senate, or even more

2009 Supplemental Recovery Funding for R&D (House, Senate, and Final bills) (budget authority in billions of dollars)



Source: AAAS analysis of R&D in House and Senate stimulus appropriations bills.
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More on the Stimulus

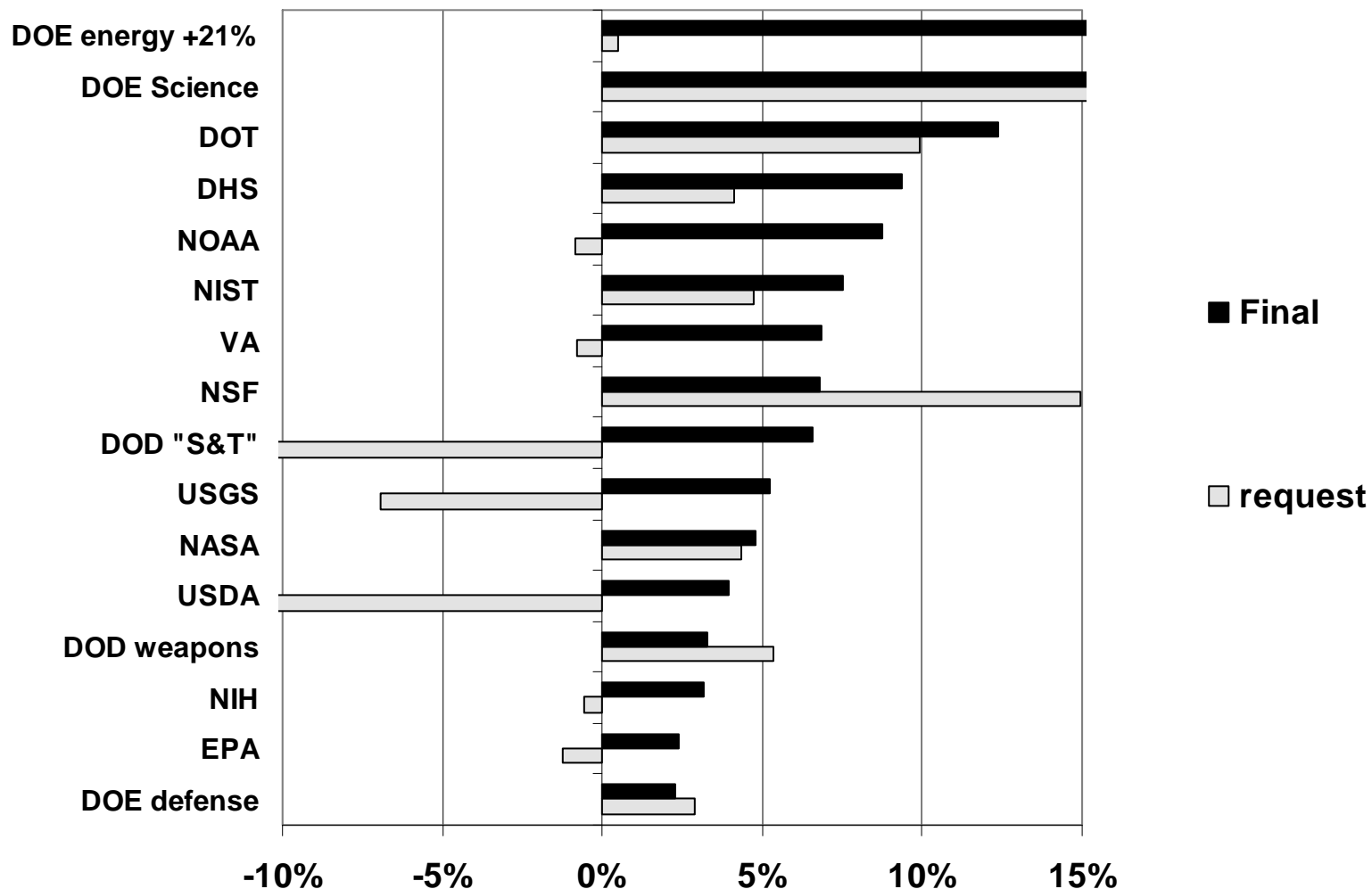
- Four major R&D priorities: innovation & competitiveness-related basic research, biomedical research, energy R&D, climate change
- Basic competitiveness research: stimulus puts NSF, DOE O/S, and NIST on track to double over 7 to 10 years, as promised in Obama campaign and America COMPETES Act
- Energy & climate also high priorities: \$3.5 B for DOE energy R&D, \$400 M for NASA climate, \$830 million for NOAA
- Agencies get FY 2009 money, can obligate the funds through Sept. 2010, but goal is to spend the money quickly

R&D in the FY 2009 Omnibus

- Democrats in Congress waited out President Bush - final FY 2009 appropriations include significant increase in domestic discretionary spending
- Even without ARRA every major R&D agency receives an increase above inflation
- Most FY 2009 R&D numbers greater than request (except NSF, DOE science, DOE & DOD weapons)
- DOE is big winner – large increases in energy & science portfolios, in both regular budget & stimulus
- America COMPETES Act agencies return to 10-year doubling track

FY 2009 R&D Appropriations (Congress vs. Request)

Percent Change from FY 2008 (as of FEBRUARY '09 excl. Stimulus)

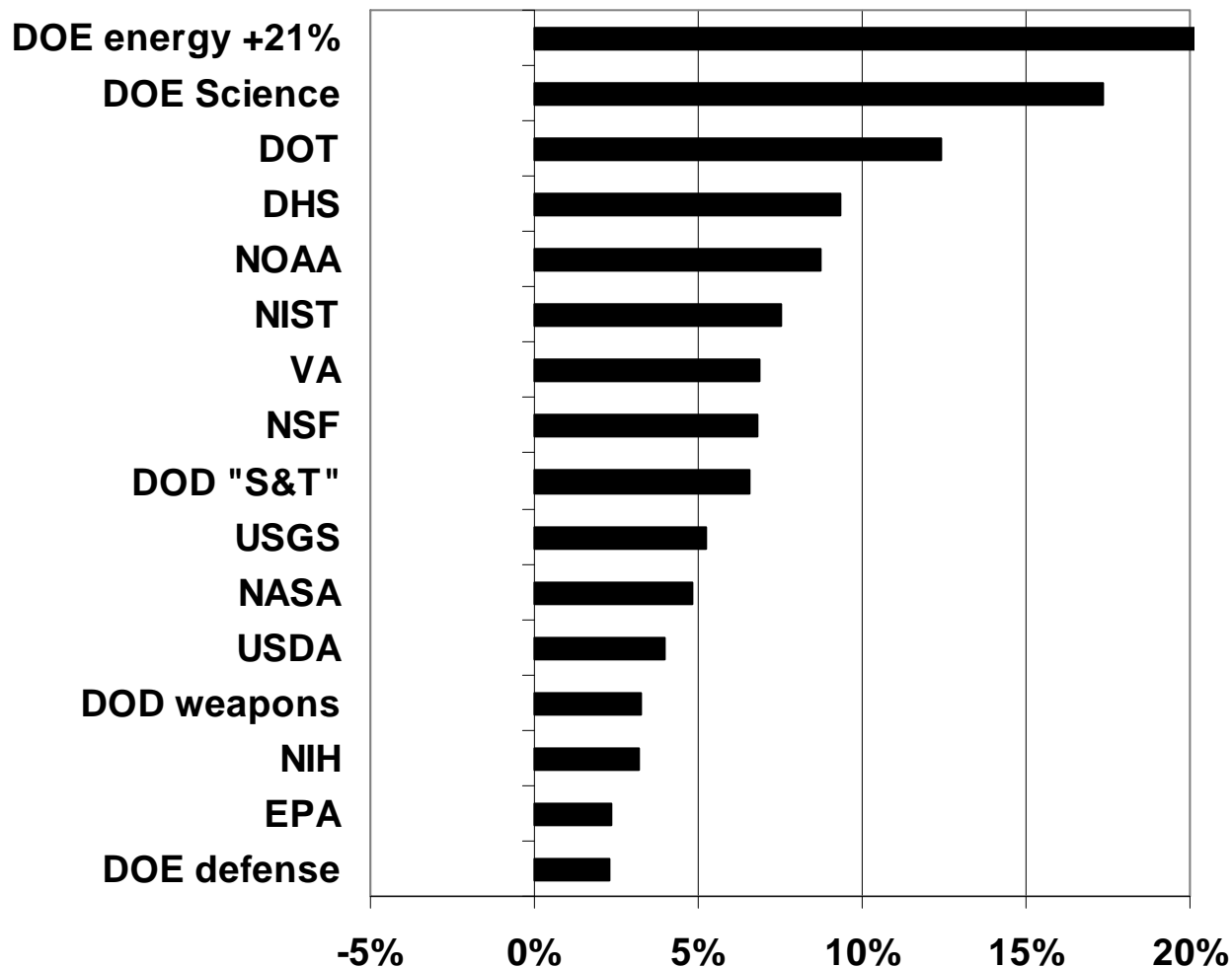


Source: AAAS estimates of R&D in the FY 2009 omnibus / continuing resolution.
 Excludes supplemental (stimulus) appropriations in ARRA (P.L. 111-5).
 DOD "S&T" = DOD R&D in "6.1" through "6.3" categories plus medical research.
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FY 2009 R&D Appropriations (as of 2/09 excl. stimulus)

Percent Change from FY 2008 (as of FEBRUARY '09)



Source: AAAS estimates of R&D in the FY 2009 omnibus / continuing resolution.

Excludes supplemental (stimulus) appropriations in ARRA (P.L. 111-5).

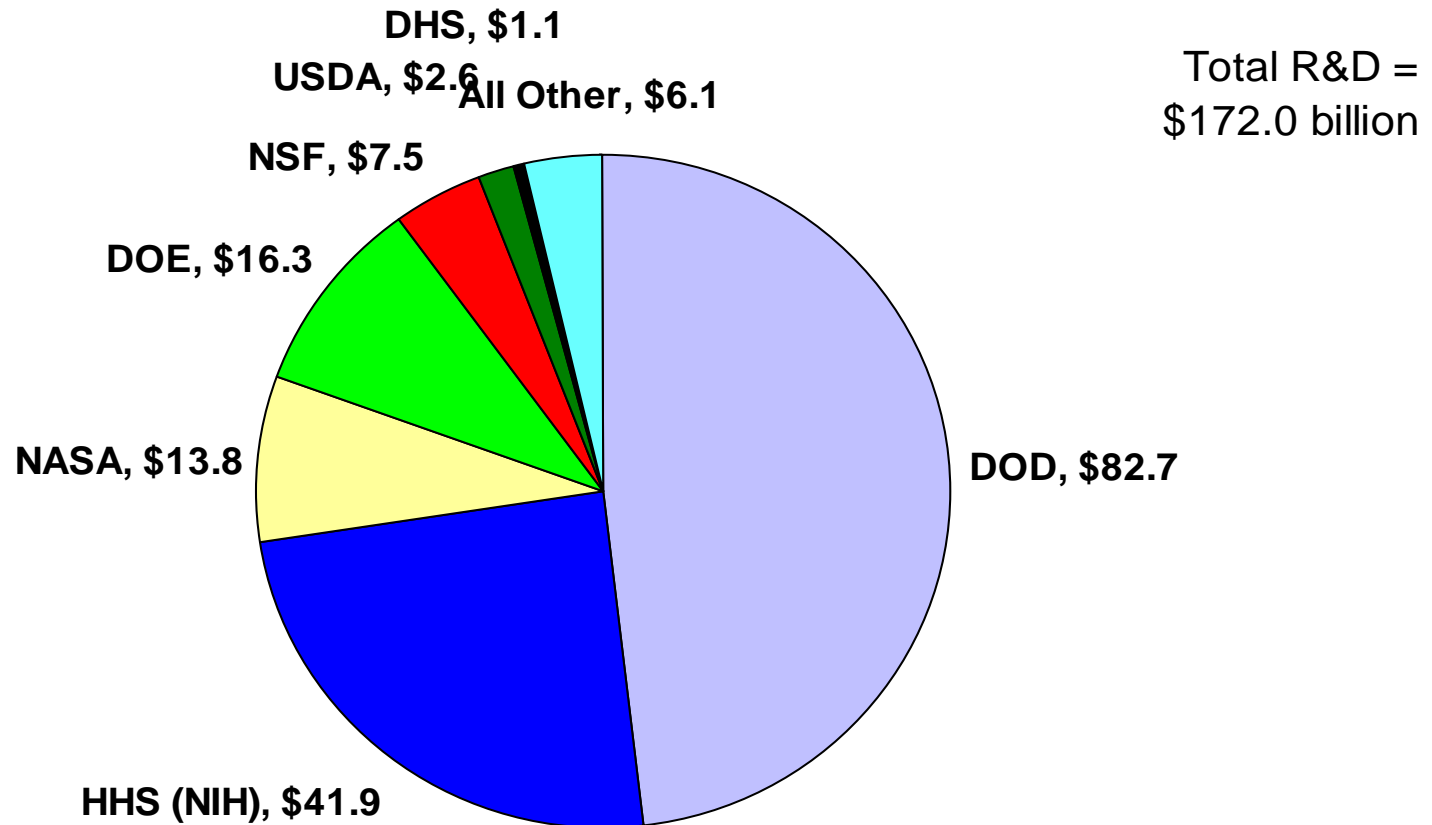
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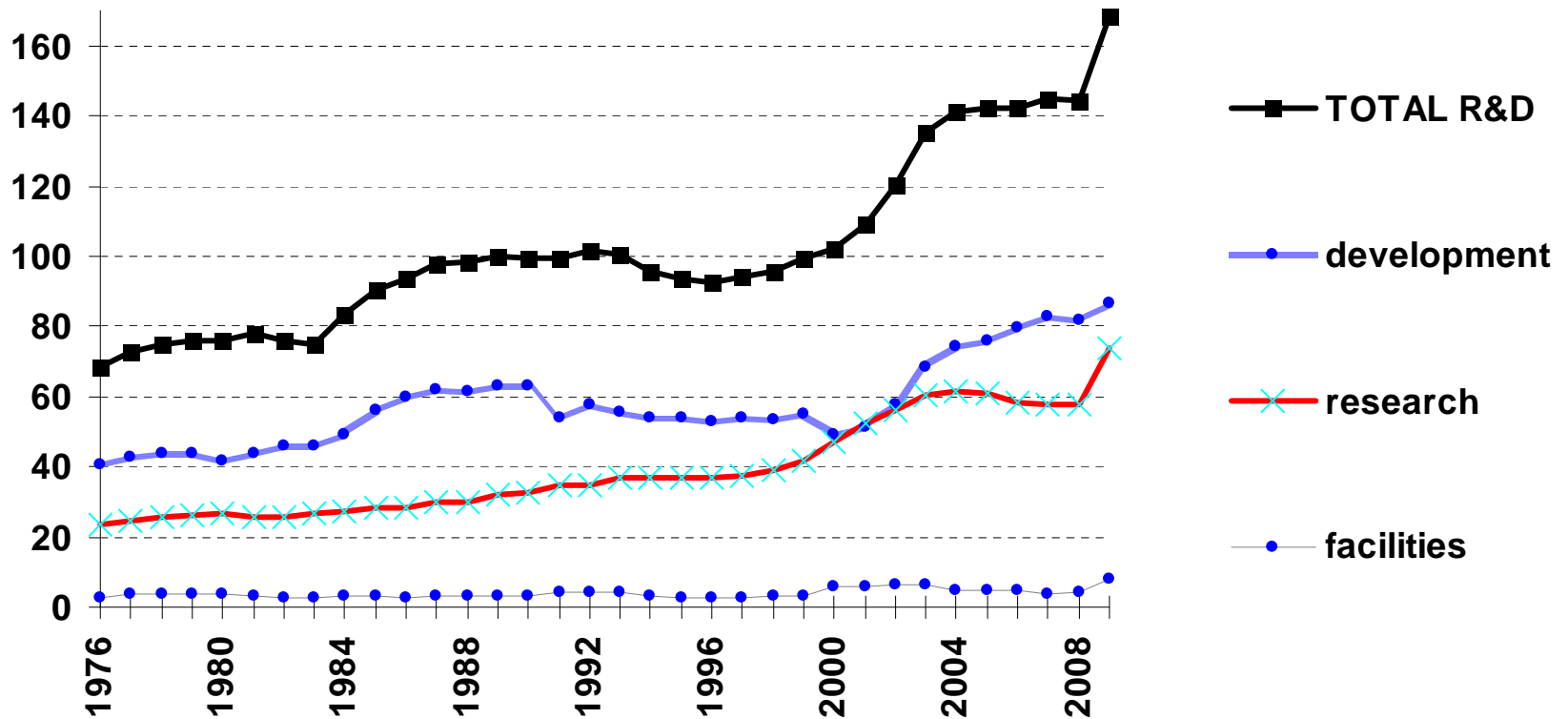
Total R&D by Agency: FY 2009 Final (incl. Recovery Act)*

Budget Authority in billions of dollars



* AAAS estimates of R&D based on FY 2009 appropriations bills.
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Trends in Federal R&D, FY 1976-2009 (2/09, incl. stimulus)* in billions of constant FY 2008 dollars

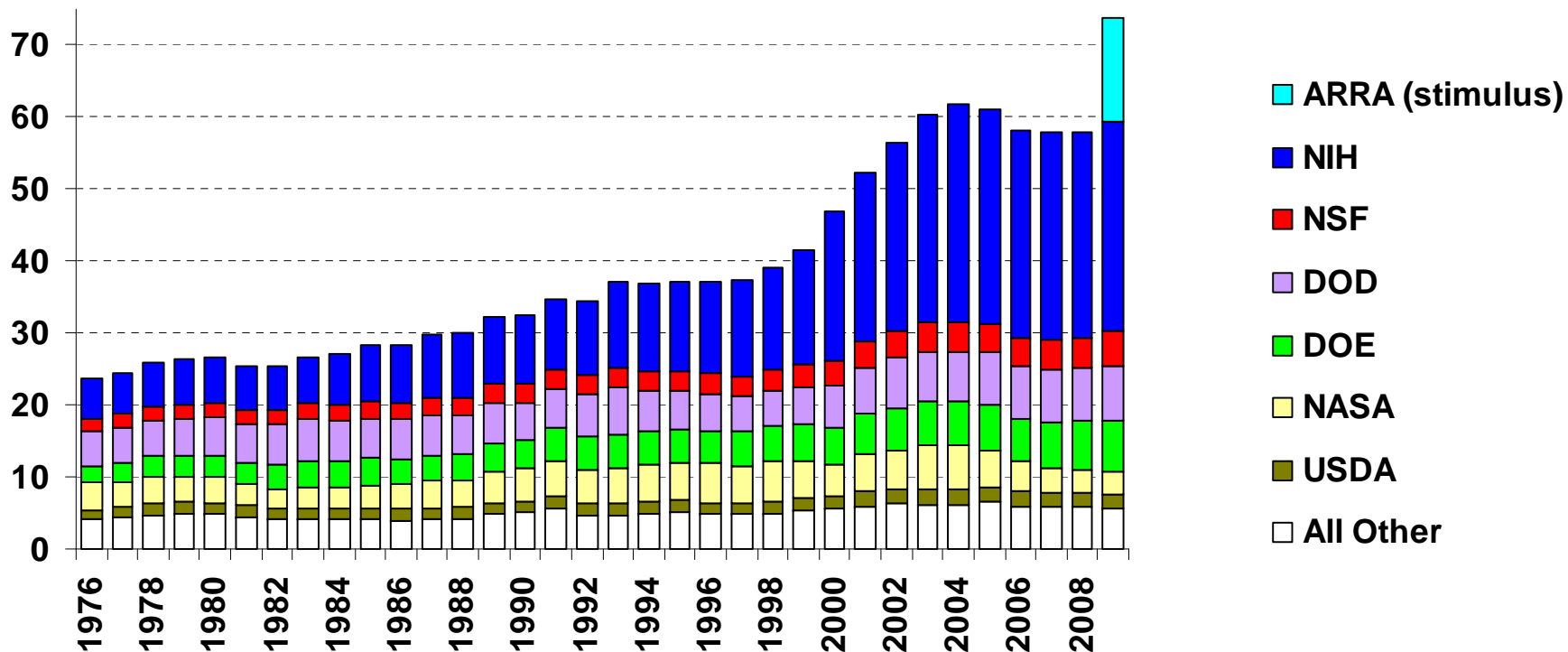


Source: AAAS analyses of R&D in annual AAAS R&D reports. * FY 2009 figures are latest AAAS estimates of FY 2009 appropriations, including emergency stimulus (HR 1). R&D includes conduct of R&D and R&D facilities. Data to 1984 are obligations from the NSF Federal Funds survey. GDP figures are from OMB, Budget of the U.S. Government FY 2009. FEB. '09 REVISED © 2009 AAAS



Trends in Research by Agency, FY 1976-2009 (as of 2/09)*

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 appropriations, including emergency stimulus (HR 1). Research includes basic research and applied research. 1976-1994 figures are NSF data on obligations in the Federal Funds survey. FEB. '09 REVISED © 2009 AAAS



Potential Impacts on Research

- Federal funding for research will see real increases in 2009 (sustained into 2010) after 4 years of real declines
- Stimulus provides unprecedented federal support for academic facilities and instrumentation and federal labs
- NSF and NIH grant proposal success rates will improve dramatically
- Bill specifies in broad brush how agencies will spend their stimulus money, but agencies differ on implementation

How NIH Will Use \$10.4 B Stimulus

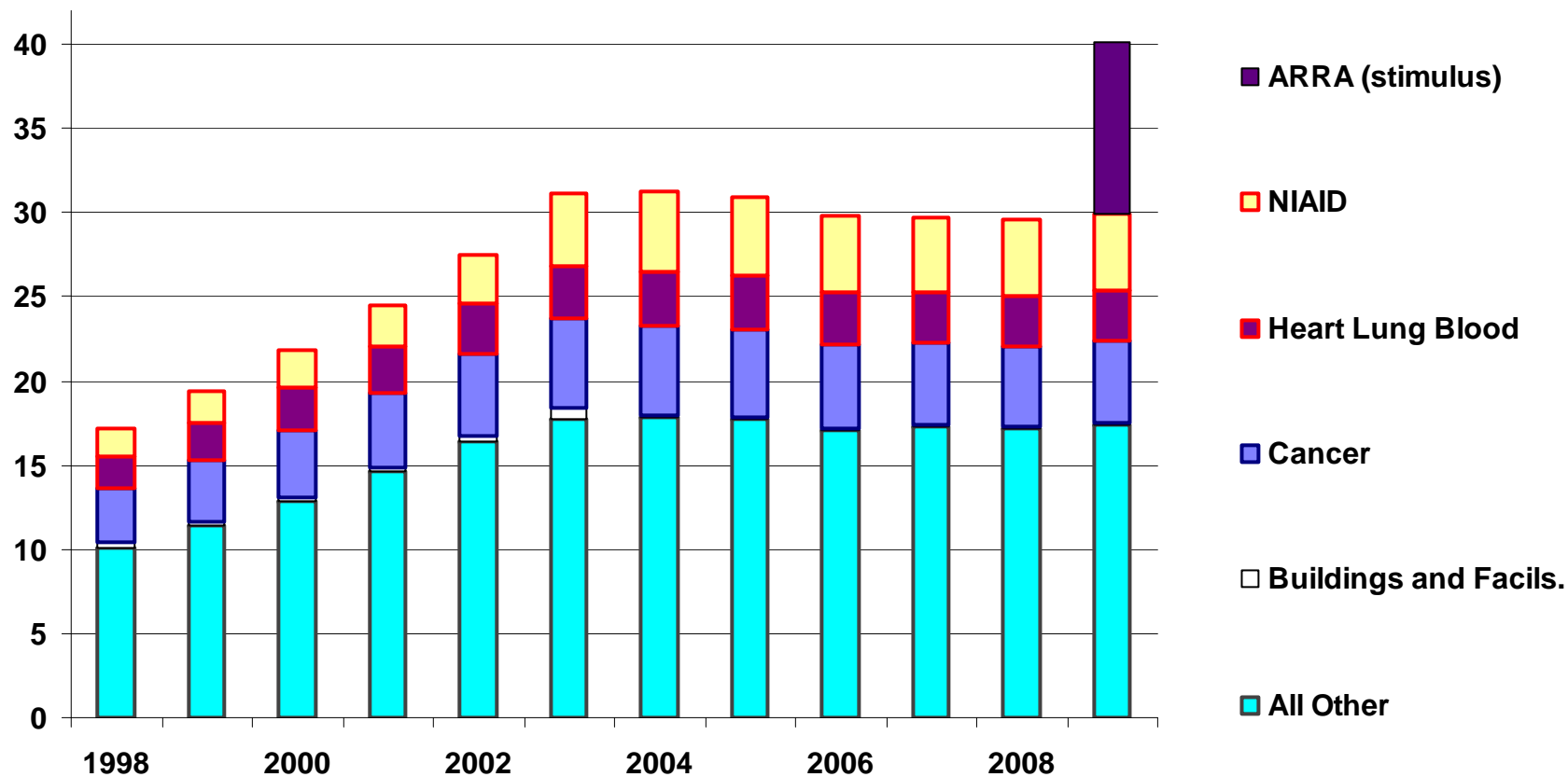
- Spend as much as possible in FY 2009
- \$8.2 B for research priorities (\$7.4 B to institutes and common fund); \$800 M to director's office
- \$1 B for extramural construction, repairs, alterations
- \$300 M for shared instrumentation, other capital equipment
- \$500 M for NIH buildings & facilities
- \$400 M for comparative effectiveness research (part of \$1.1 B HHS program)

NIH Stimulus Funding Mechanisms

- Choose best, recently reviewed unfunded R01s capable of making significant advances in 2 years
- Fund new R01s, capable of results in 2 years
- Accelerate ongoing science through targeted supplements to current grants
- Fund new types of activities that fit ARRA – e.g., “jump start” new NIH Challenge Grant program (malaria & TB drugs; influenza vaccine; vaccines & therapeutics for emerging & resistant infections)
- “Grand Opportunities” grants, new faculty grants...

National Institutes of Health Budget by Institute, 1998-2009

(budget authority in billions of constant FY 2008 dollars)



Source: AAAS R&D reports from NIH budget documents 1996-2008. * 2009 figures are AAAS estimates of 2009 omnibus appropriations, including stimulus appropriations in HR 1. Adjusted for inflation using OMB's GDP deflators. FEB. 09
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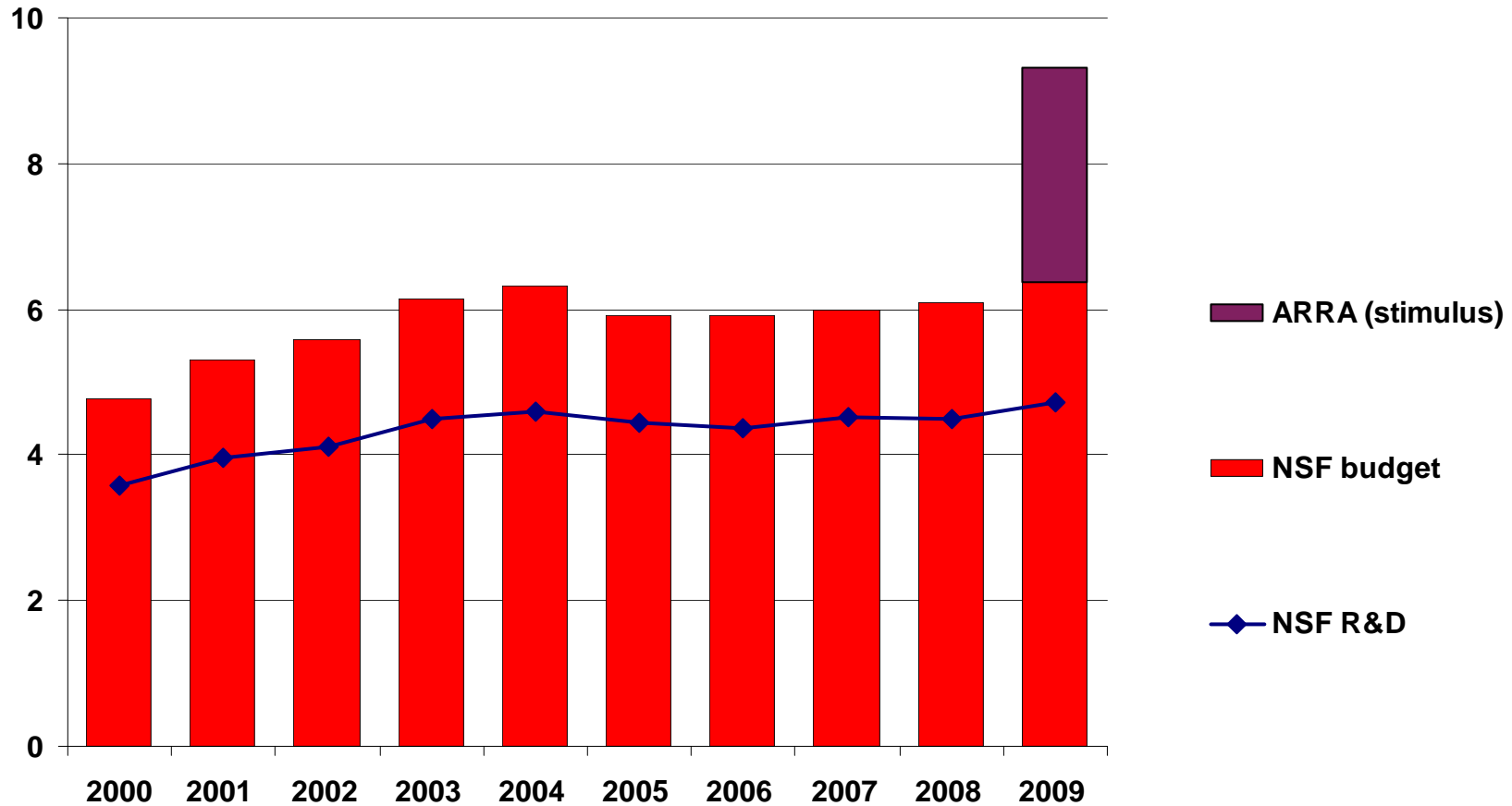


NSF Stimulus Allocations (\$3 Billion)

- \$2 B for “highly rated research proposals which could not otherwise be funded because of budget constraints...”
- \$200 M – “shovel ready” major research equipment and facilities construction (NSB approved)
- \$300 M – major research instrumentation, \$200 M – academic research infrastructure
- \$100 M – education: \$60 M – Noyce Scholarships, \$25 M – math-science partnerships; \$15 M – new professional science master’s program
- All grants under ARRA – standard grants with duration up to 5 years

National Science Foundation Budget, FY 2000-2009 (as of 2/09)*

(budget authority in billions of constant FY 2008 dollars)

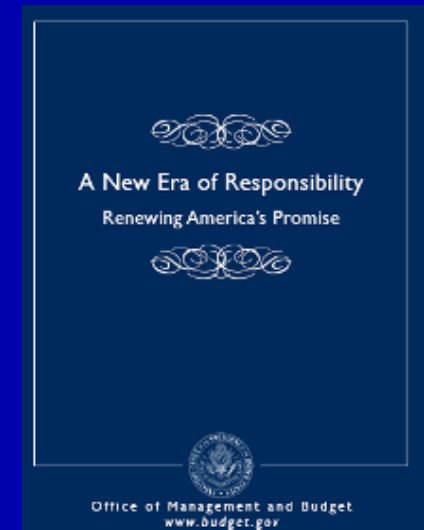


Source: National Science Foundation, AAAS, and latest AAAS estimates of FY 2009 appropriations. Includes supplemental (stimulus appropriations) in Public Law 111-5. FY 2009 NSF R&D line excludes stimulus R&D.
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President's FY 2010 Budget

- President Obama released FY 2010 budget outline on February 26. Detailed budget will be released “soon”
- R&D: investing in the sciences, health care, energy & climate, and security continue to be priorities
- Few details (NSF - \$7.0 B; begin doubling cancer research at NIH; DOE – substantial increase for O/S, climate science)



What's Next?

- Yesterday Congress approved a Budget Resolution for FY 2010 before receiving a detailed FY 2010 Budget request
- FY 2010 preliminary budget includes language reaffirming importance of R&D, supporting funding levels set in America COMPETES Act
- President's NAS speech set goal of 3% R&D/GDP
- Concerns:
 - Questions about how quickly and how effectively R&D stimulus funding will be spent?
 - Long term outlook for sustained growth for research funding? What happens in 2011 and beyond?

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