

The FY 2011 Federal R&D Investment

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for the ASME Inter-Sector Cmte on Fed R&D

AAAS R&D Budget and Policy Program

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

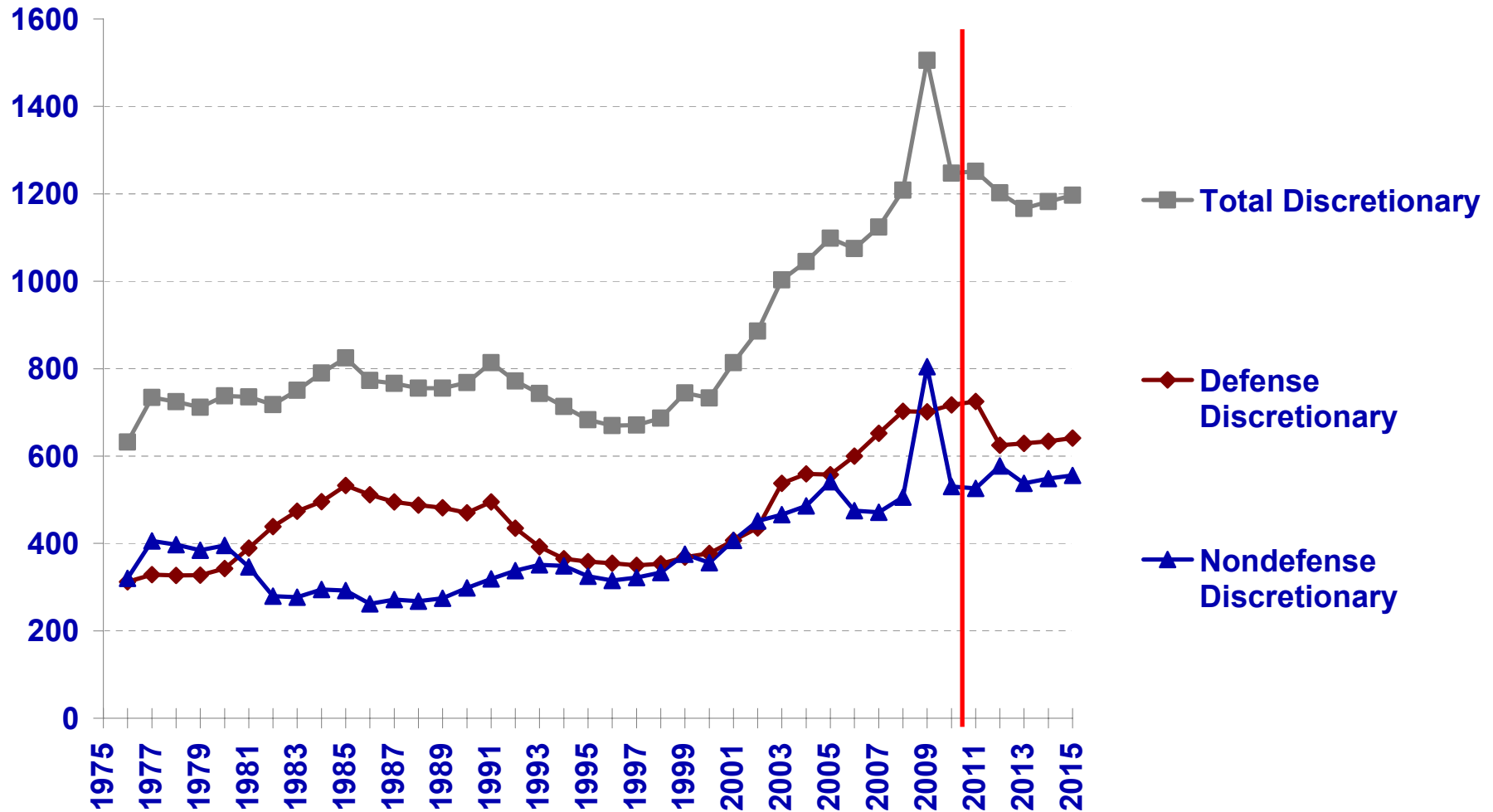
See the “Seminars and Presentations” section for
copies of this presentation.

The FY 2011 Budget

- \$3.8 trillion total budget, \$1.3 trillion unified deficit
- \$1.4 trillion discretionary spending (0.5% increase)
 - \$671 billion nondefense spending (3.4% decrease)
- Rescuing the Economy
- A Foundation for Economic Growth and Job Creation
 - Small business initiatives
 - Investing in science and basic research
- Restoring Responsibility
 - Three year non-security discretionary funding freeze

Trends in Discretionary Spending

outlays in billions of constant FY 2010 dollars



Source: *Budget of the United States Government, FY 2011*.

FY 2010-2015 data are budget projections.

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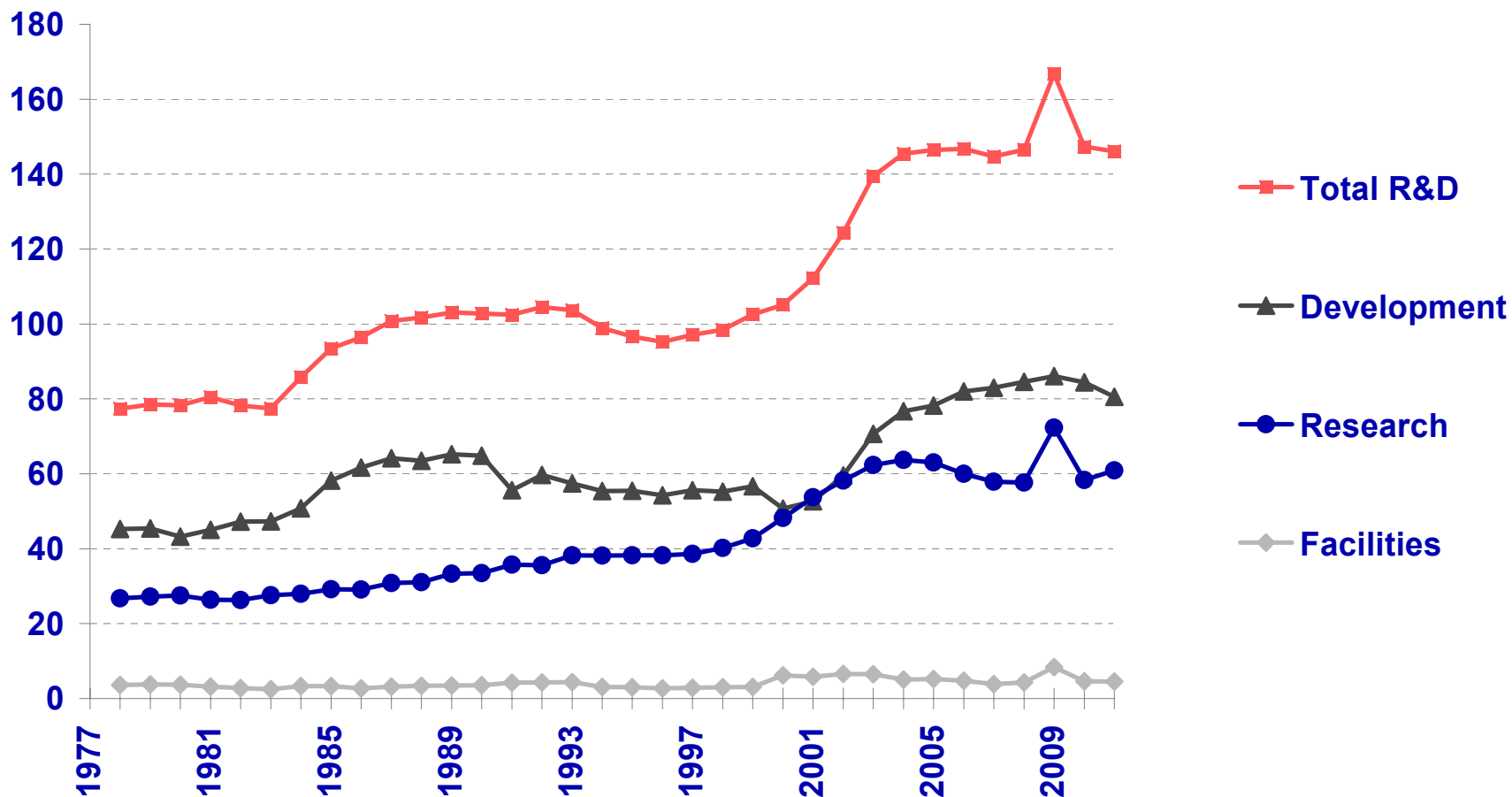


The FY 2011 Federal R&D Investment

- \$147.7 billion, 0.2% increase from FY 2010
 - Basic Research – \$31.3 billion, 4.3% increase
 - Applied Research – \$30.3 billion, 6.9% increase
 - Development – \$81.5 billion, 3.5% decrease
 - Equipment and Facilities – \$4.6 billion, 0.6% decrease
- \$81.7 billion for defense R&D, 3.9% decrease
- \$66.0 billion for non-defense R&D, 5.8% increase
- 0.8% decrease in constant dollars from FY 2010
- 0.4% increase in constant dollars since FY 2004

Trends in Federal R&D

in billions of constant FY 2010 dollars

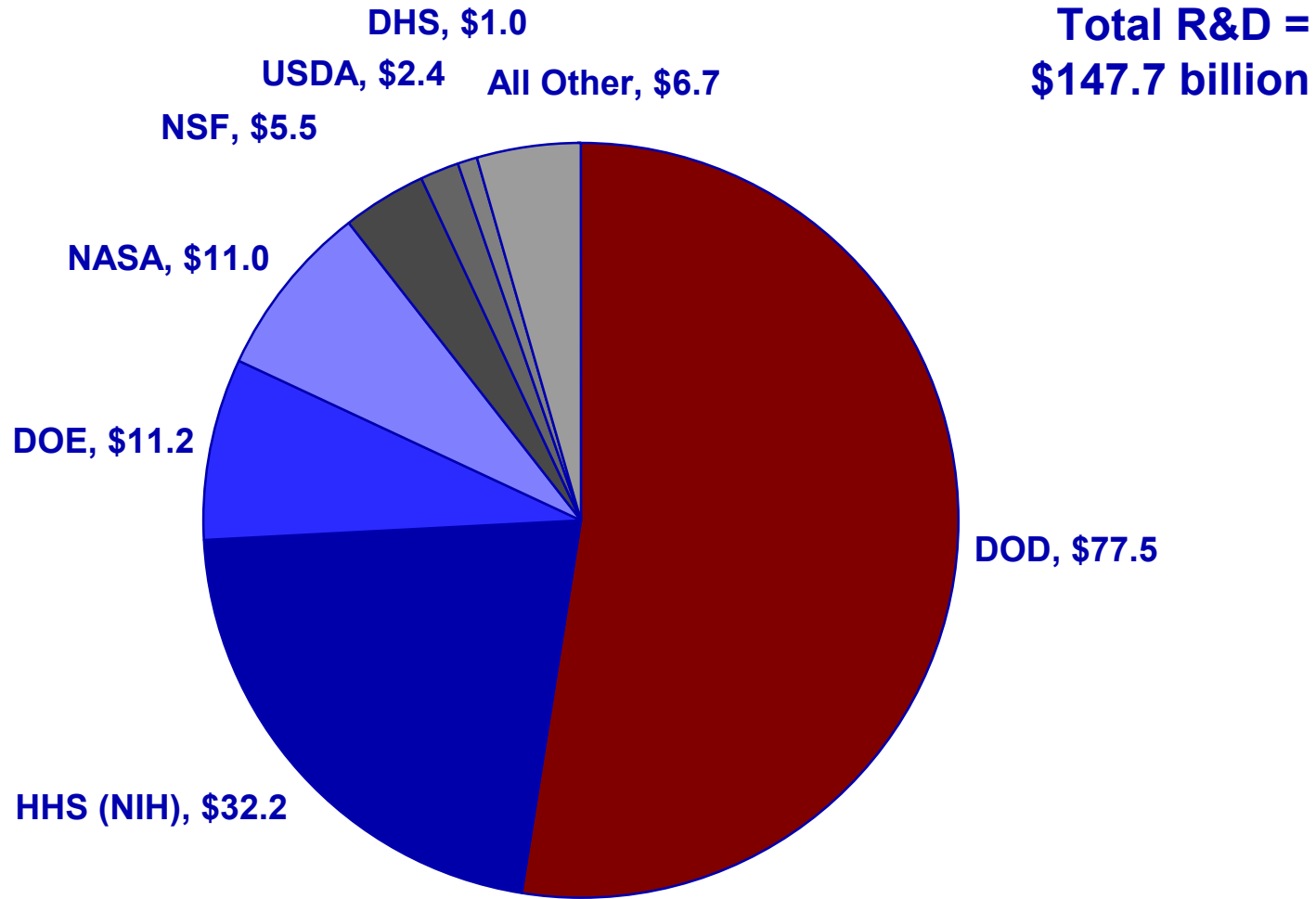


Source: AAAS analyses of R&D in annual AAAS R&D reports.
FY 2011 figures are latest AAAS estimates of FY 2011 request.
R&D includes conduct of R&D and R&D facilities.
1976-1994 figures are NSF data on obligations in the Federal Funds survey.
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Total R&D by Agency, FY 2011

budget authority in billions of dollars



Source: OMB R&D budget data, agency budget justifications, and other agency documents.

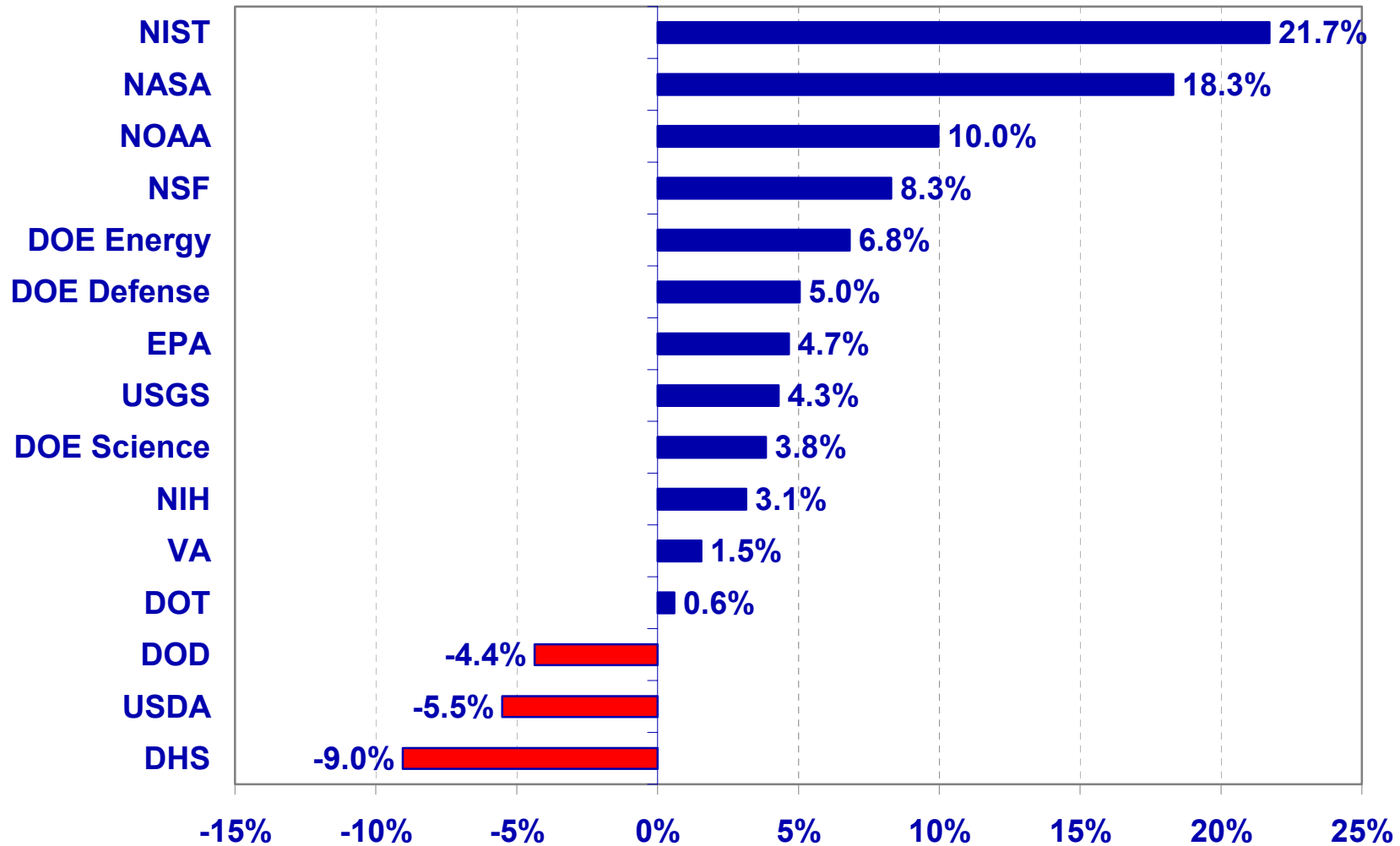
R&D includes conduct of R&D and R&D facilities.

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FY 2011 R&D Budget Request

Percent Change from FY 2010



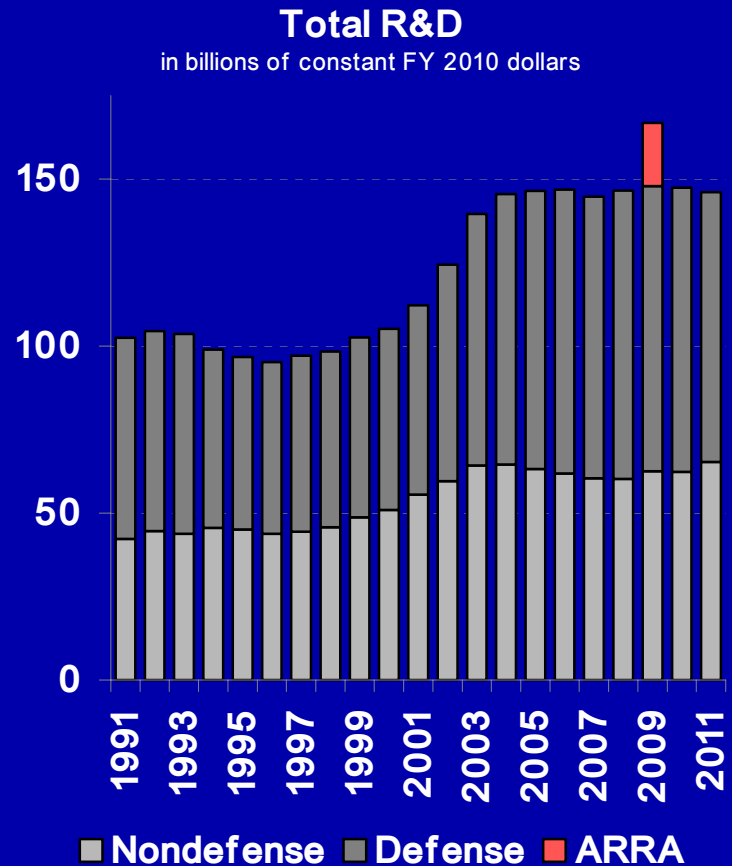
Source: OMB R&D budget data, agency budget justifications, and other agency documents.

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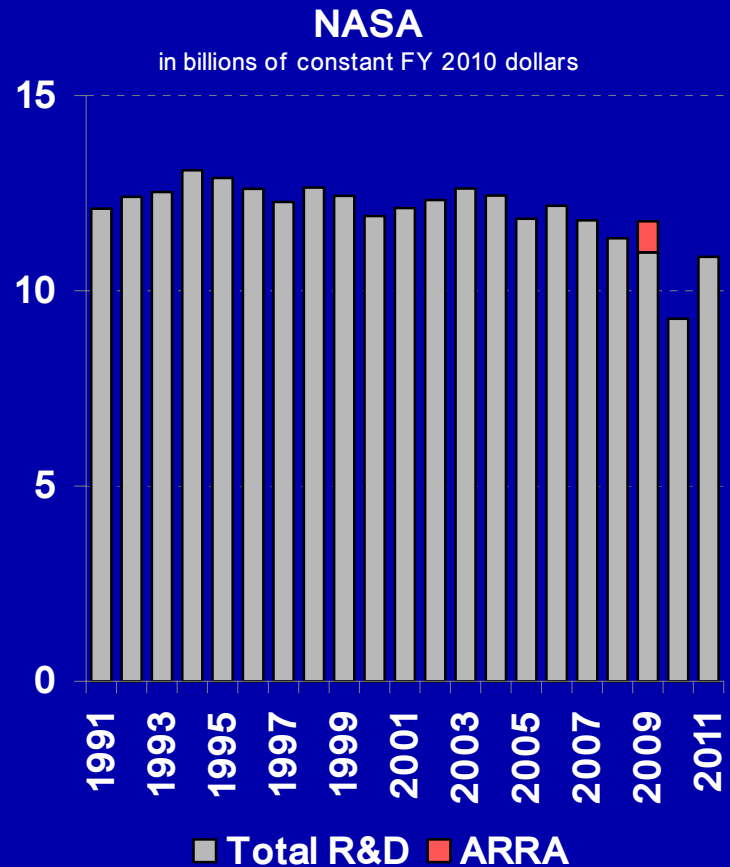
Funding Shifts

- Defense, −\$3.3b
- Nondefense, +3.6b
- Development, −\$2.9b
- Research, +\$3.2b



Funding Shifts

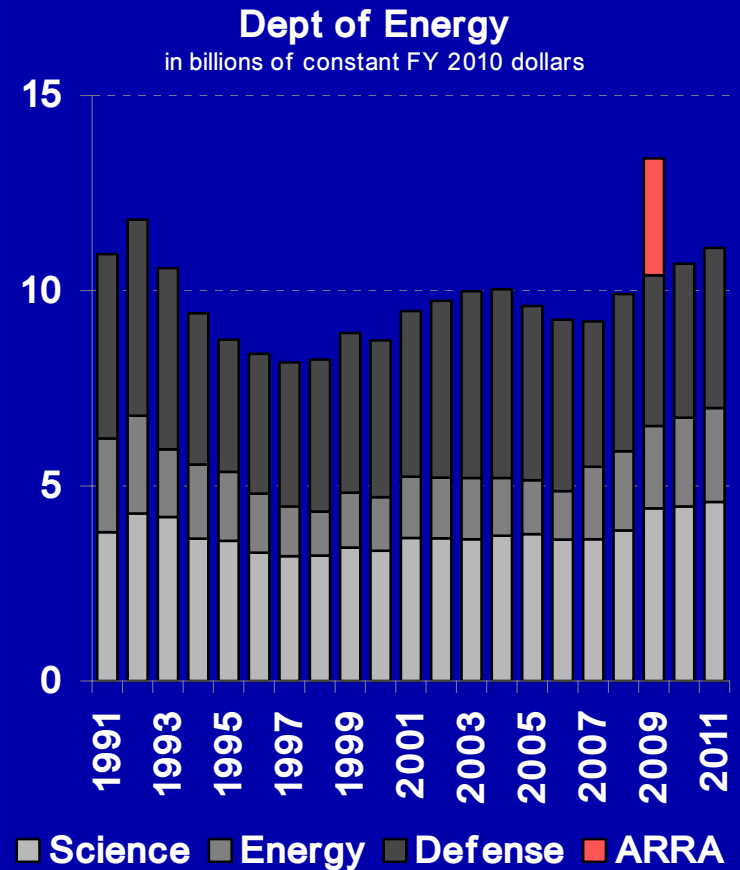
- NASA Constellation
 - \$3.1b over 3 yrs to...
 - Near earth orbit through private industry
 - +\$6.1b over 5 yrs
 - Heavy Lift and Propulsion
 - +\$559m
 - International Space Station
 - +\$812m, 35.1% over 3 yrs



Funding Shifts

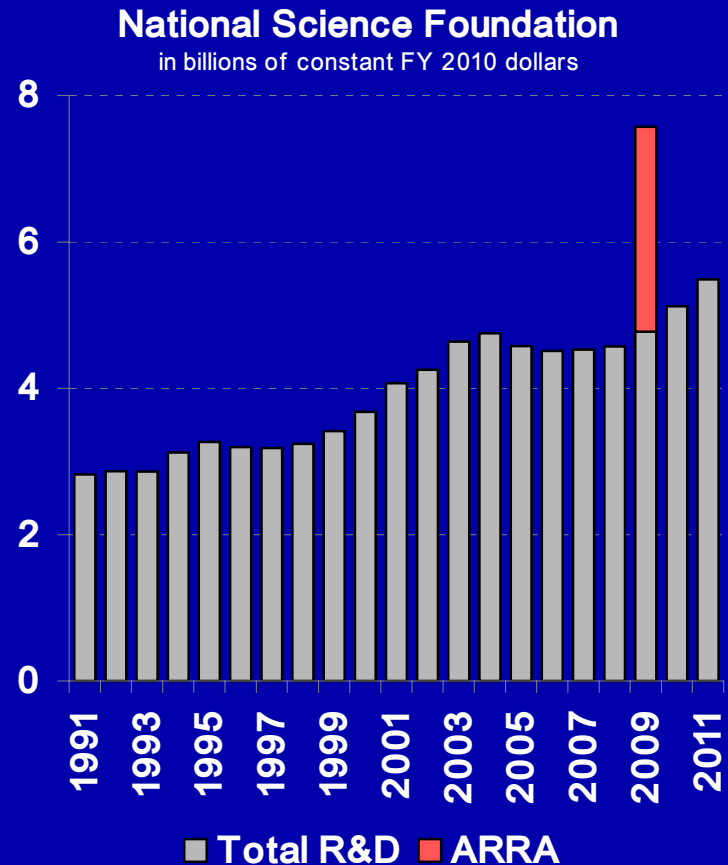
- Dept of Energy
 - Fossil, -\$53m
 - Nuclear, -\$122m
 - EERE, +\$35m
 - Electric Grid, +\$22m
 - Office of Science, +\$172m

- ARPA-E, +\$273m



Funding Doubling for Basic Research

- National Science Foundation
 - 8.0% increase to \$7.4 billion
 - R&D – 8.3% increase to \$5.5 billion

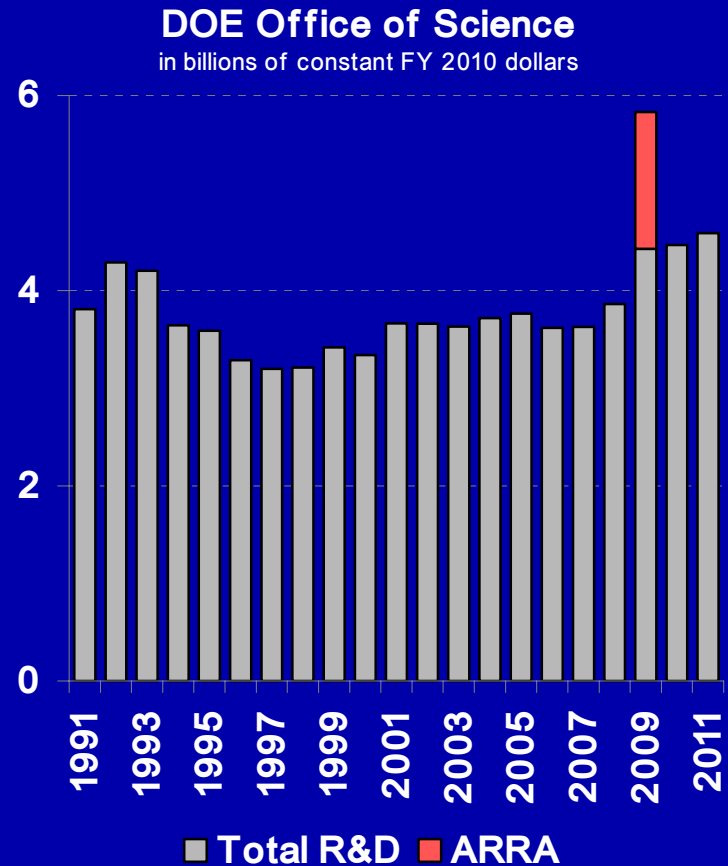


NSF Engineering Directorate

- 11.0% increase to \$826 million
 - Chem, Bioeng, Env & Trans (CBET) – \$169 million (+7.8%)
 - Civil, Mech & Manuf Innov (CMMI) – \$207 million (+9.8%)
 - Elect, Comm & Cyber Sys (ECCS) – \$103 million (+9.6%)
 - Eng Education and Centers (EEC) – \$138 million (+11.5%)
 - Ind Innov Partnerships (IIP) – \$178 million (+16.9%)
 - SBIR/STTR – \$143 million (+13.6%)
 - Emerging Frontiers in Res Innov (EFRI) – \$31 million (+6.9%)

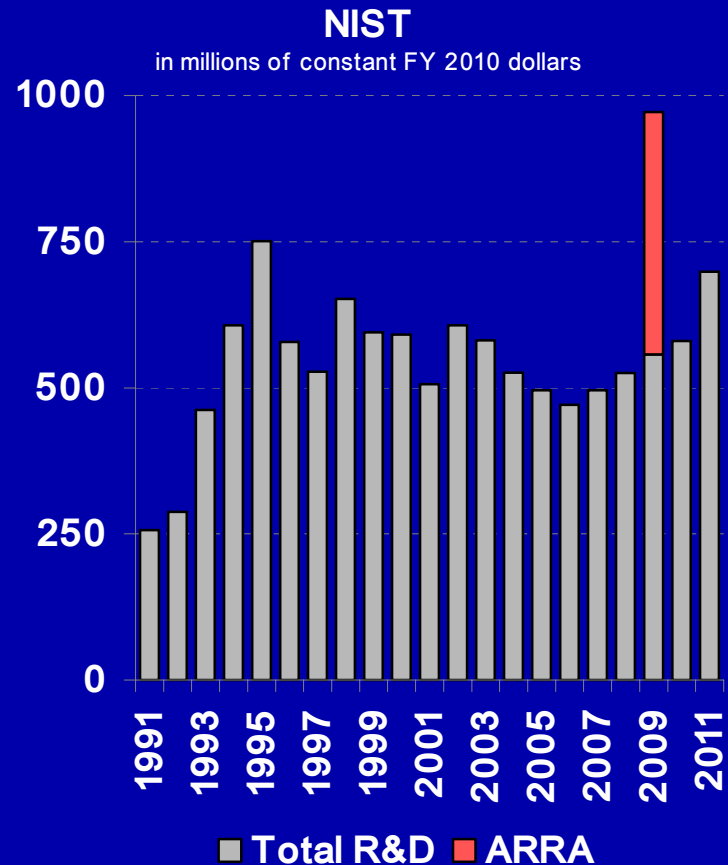
Funding Doubling for Basic Research

- DOE Office of Science
 - 4.6% increase to \$5.1 billion
 - R&D – 3.8% increase to \$4.6 billion



Funding Doubling for Basic Research

- National Institute of Standards and Technology
 - Total Budget
 - +7.3% to \$919 million
 - R&D
 - +21.7% to \$706 million
 - Tech Innovation Program
 - +14.3% to \$80 million
 - Green Manufacturing
 - \$10 million
 - Innov for Manufacturing
 - \$10 million

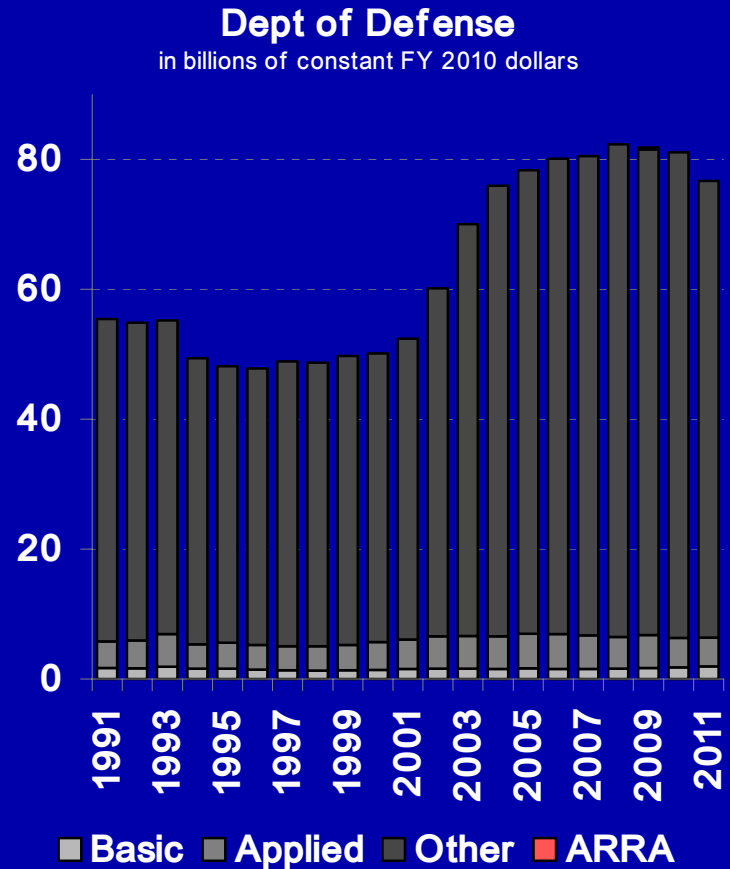


R&D Investment Priorities

- New Industries and Jobs
 - Advanced materials and manufacturing methods
 - \$6.1 billion over 5 years for commercial earth orbit
- Cleaner Energy
 - \$155 million (6.8%) increase for DOE Energy R&D
- Healthier America
 - \$956 million (3.1%) increase for National Institutes of Health
- Enhanced Security
 - DOD Basic Research – 6.7% increase to \$2.0 billion

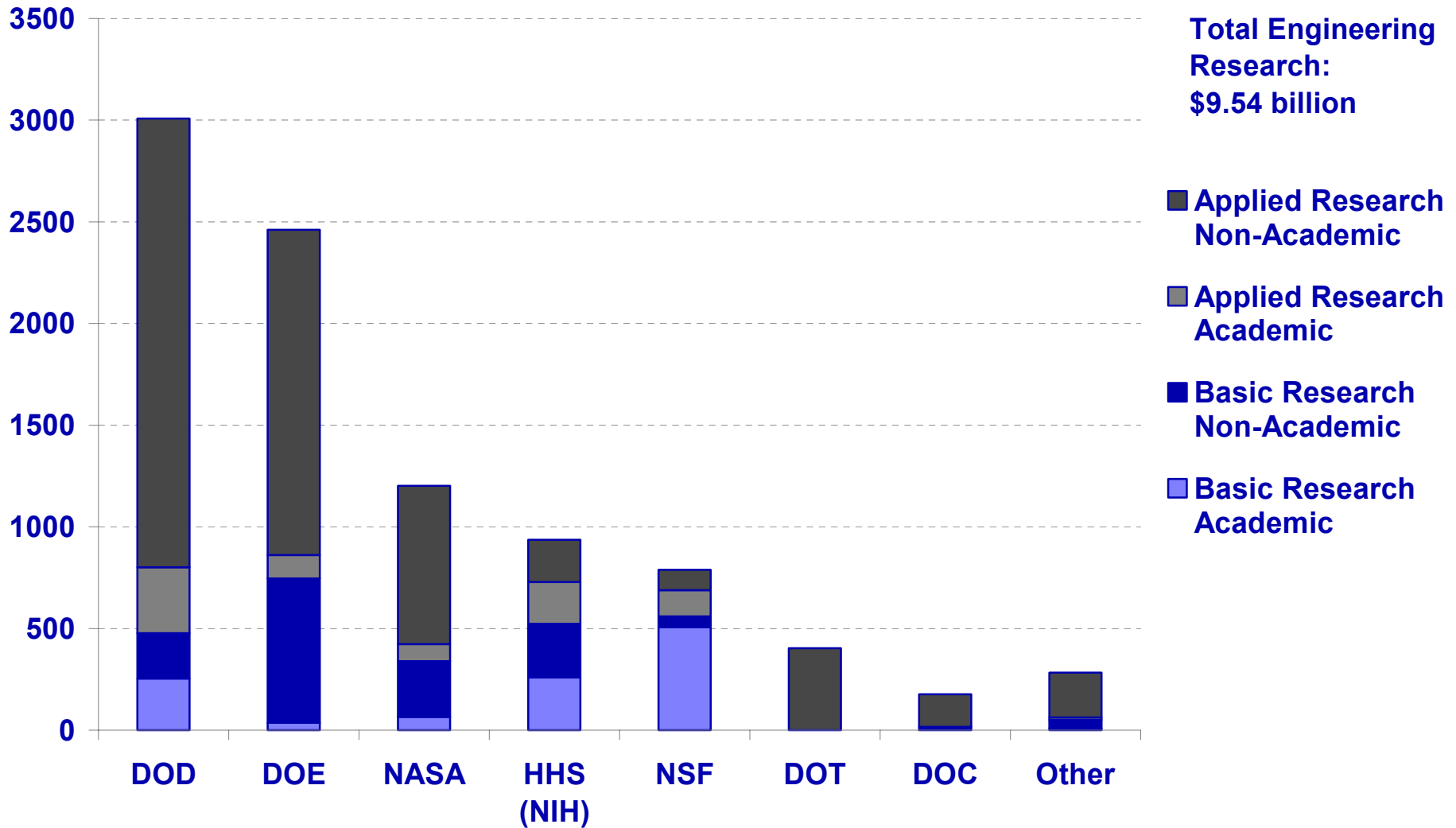
Department of Defense

- Basic Research
 - +9.2% to \$2.0 billion
- Development
 - -5.0% to \$71.0 billion
- DARPA
 - +3.7% to \$3.1 billion



Federally Funded Engineering Research: FY 2008

obligations in millions of dollars



Source: National Science Foundation, *Federal Funds for Research and Development*.

FY 2008 figures are preliminary.

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STEM Education

- \$3.7 billion, +\$32 million from FY 2010
- K-12 Education
 - \$450m at Dept of Ed, \$63m at NASA, \$41m at NSF
- RE-ENERGYSE (Undergraduate)
 - \$19 million for NSF, \$55 million for DOE
- Undergraduate Diversity
 - +14% to \$103m for NSF
- Graduate Fellowships
 - NSF: +16% to \$158m, NIH: +5% to \$824m
DOD: +4% to \$40m, DOE: +\$10m to \$15m

Next Steps

- Congress currently holding budget briefings for agencies
- Congress will pass a budget resolution and determine 302(a) and (b)s
- Congress needs to pass 12 appropriation bills, ideally by Sept. 30, the end of FY 2010.

For More Information...

The AAAS R&D web site is
<http://www.aaas.org/spp/rd>

The AAAS Forum on Science
and Technology Policy is
May 13–14, 2010 in
Washington, DC

