



Science and Technology in the Federal Budget

Kei Koizumi,

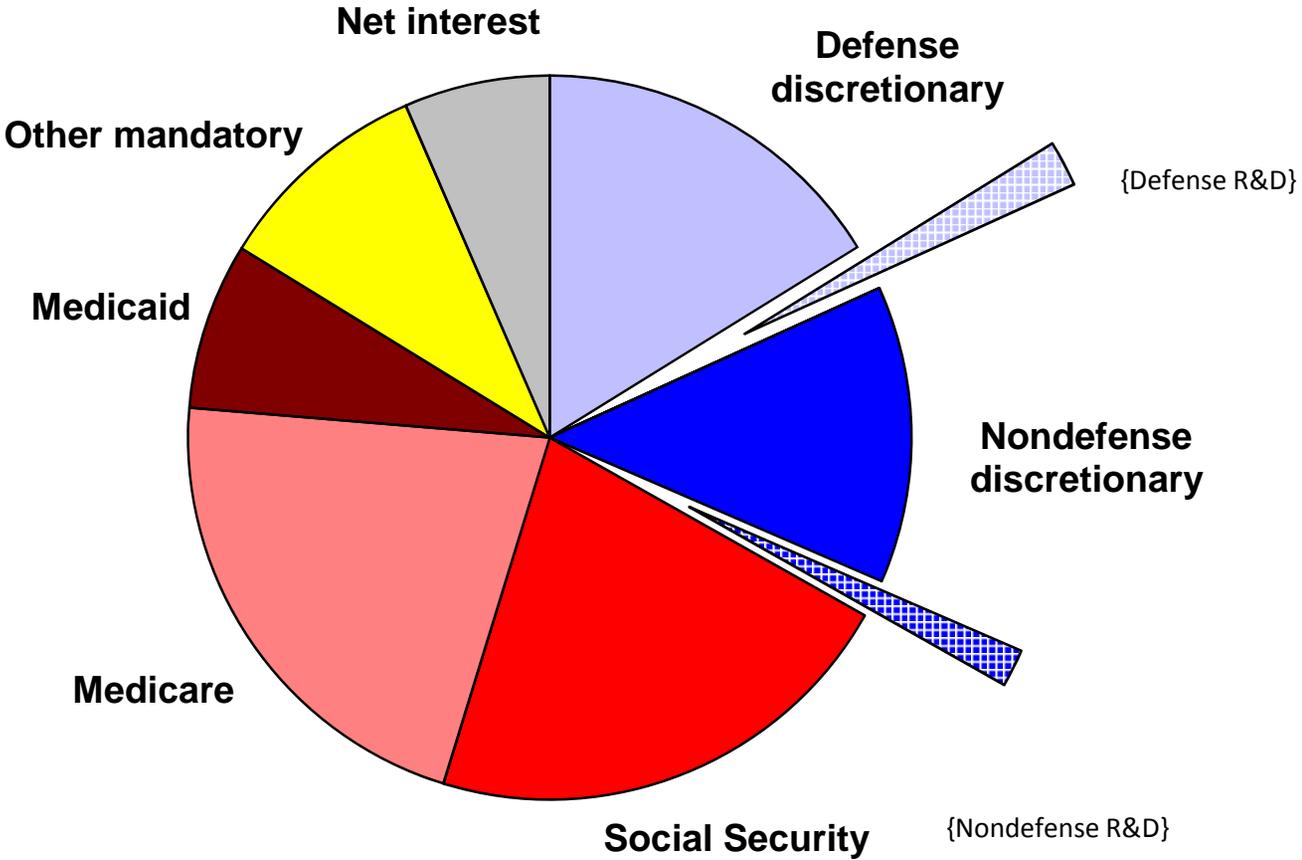
White House Office of Science & Technology Policy

March 2013

For the Stanford Rising Environmental Leaders Program

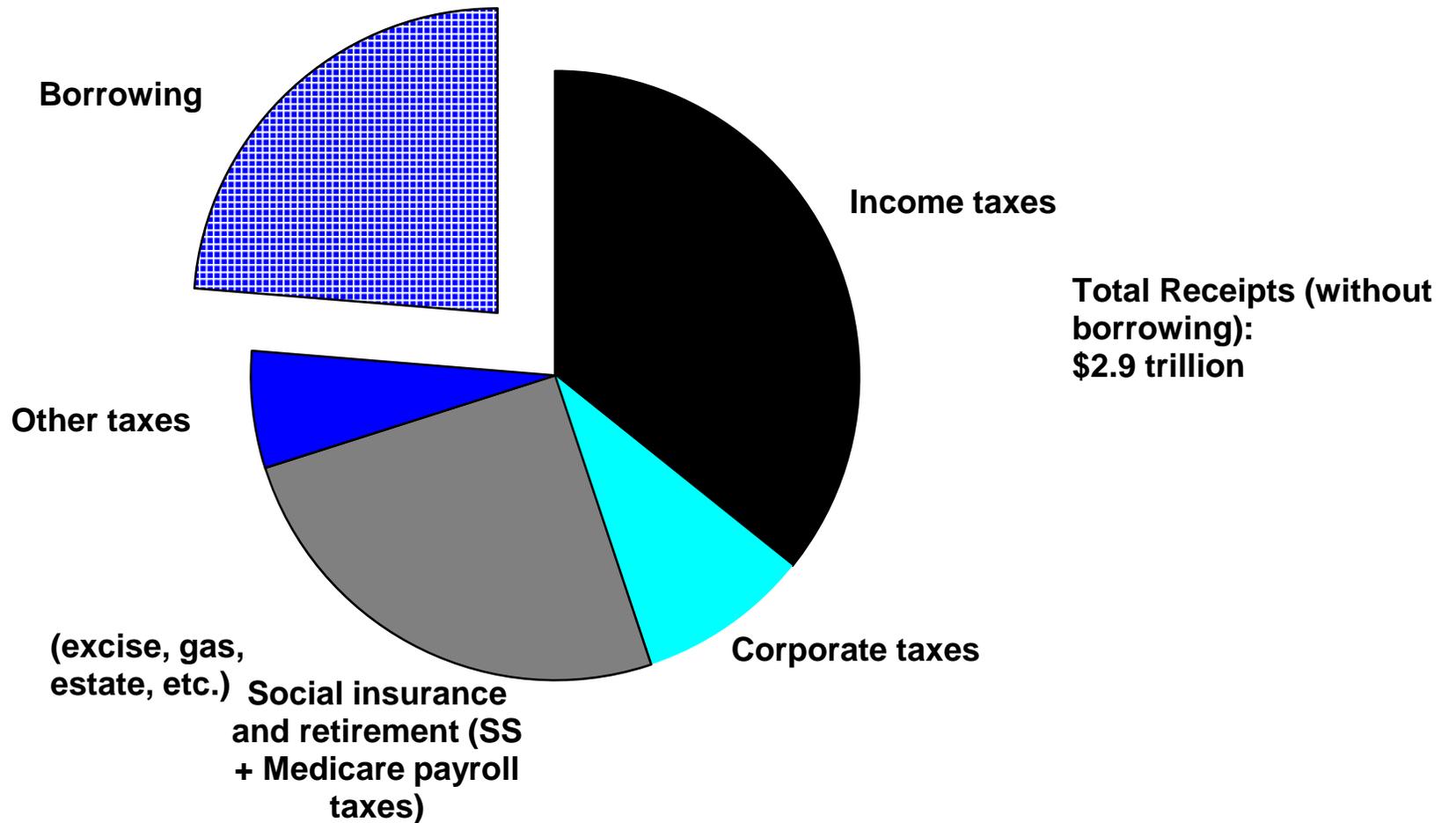
Composition of the Proposed FY 2013 Budget

Total Outlays = \$3.8 trillion



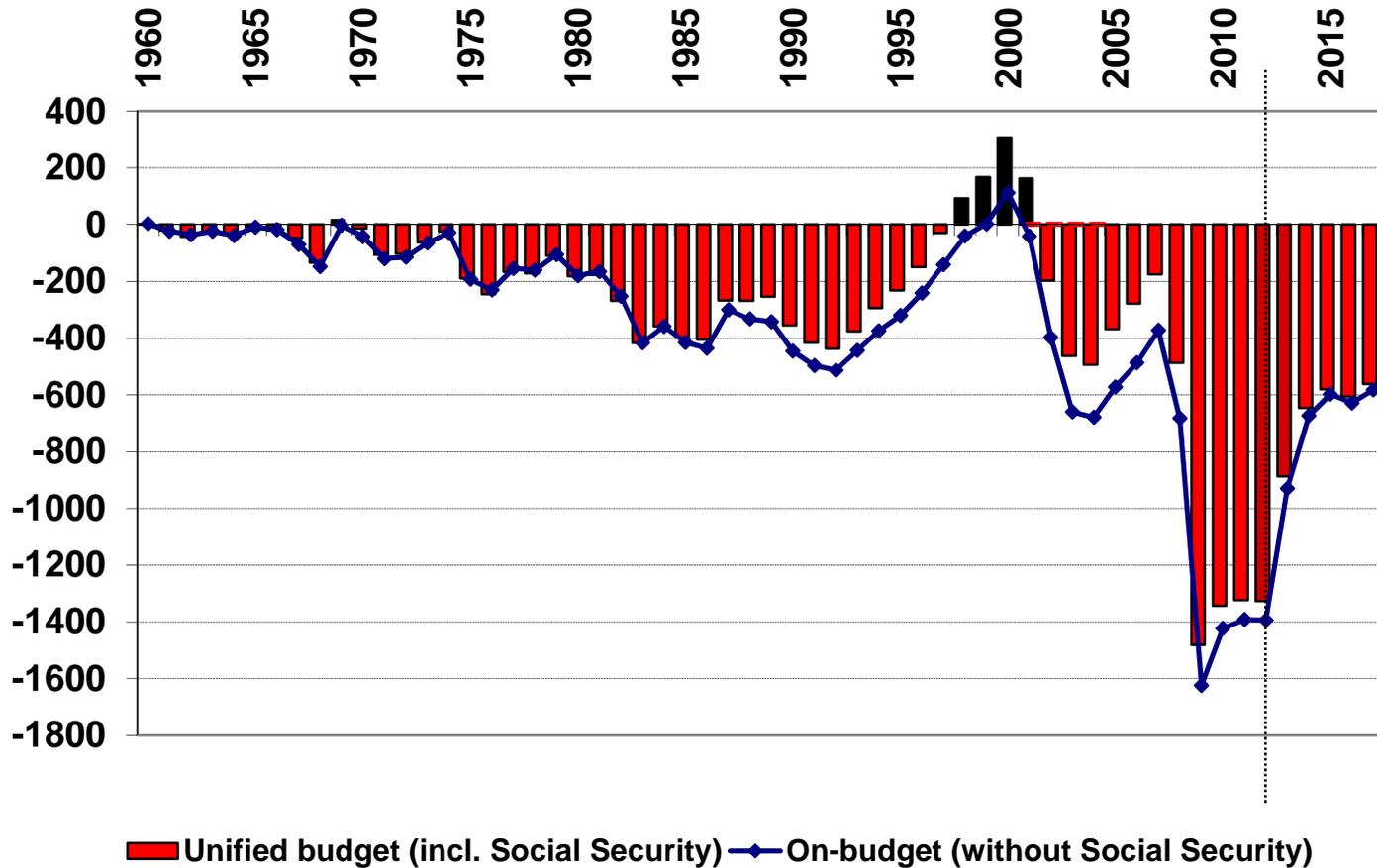
Composition of the Proposed FY 2013 Budget by Source of Funds

Total Outlays = \$3.8 trillion



Federal Budget Deficit (or Surplus), FY 1960-2017

in billions of CONSTANT FY 2012 dollars



FY 2012 data are estimates. FY '13-'17 data are budget projections.
 FEB. '12 OSTP

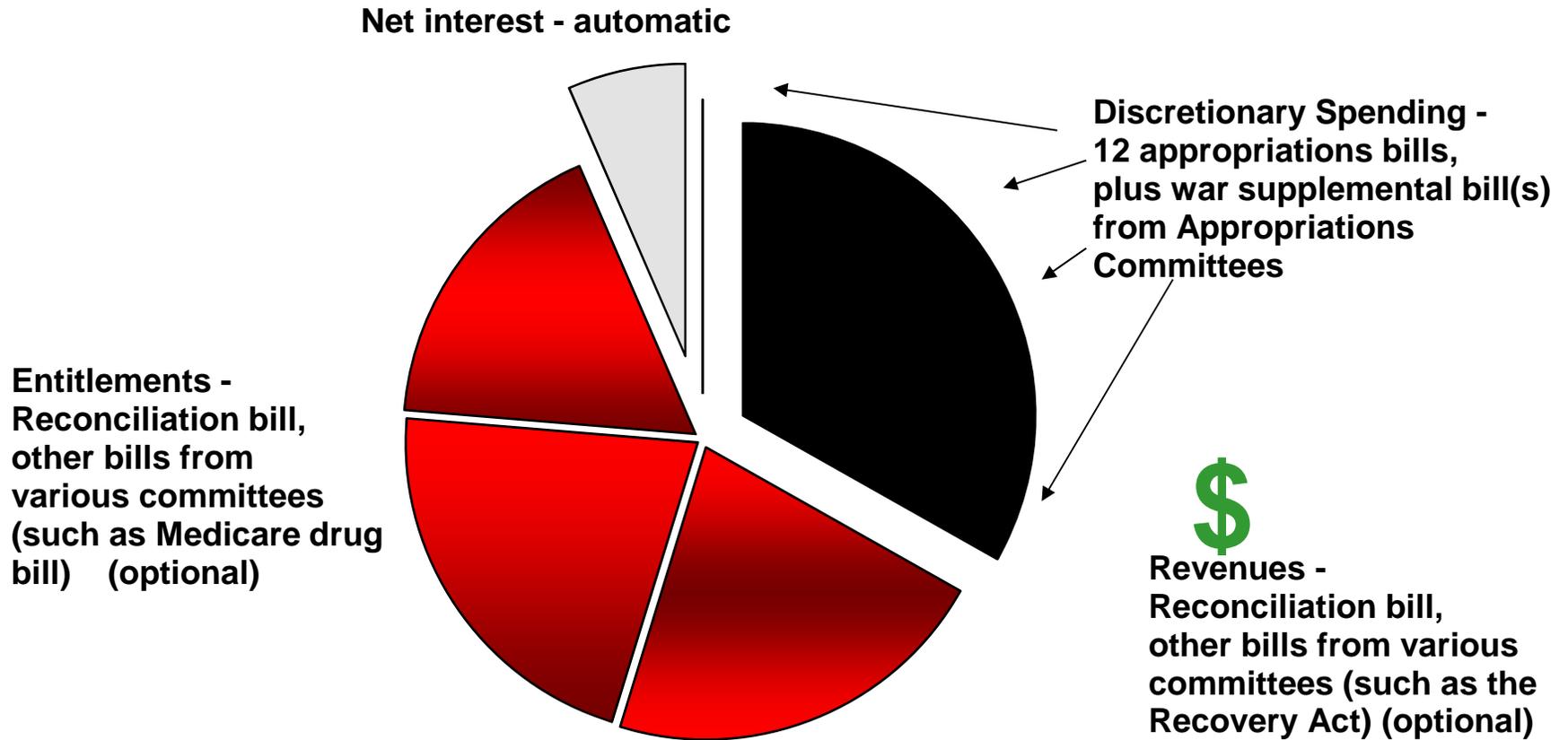
Does the Federal government have a debt ceiling?

- Yes. The debt ceiling is currently suspended until May 18, but on that date the Federal government will be at the ceiling of \$16+ trillion and will need to raise it immediately.
- The limit includes public debt and government debt.

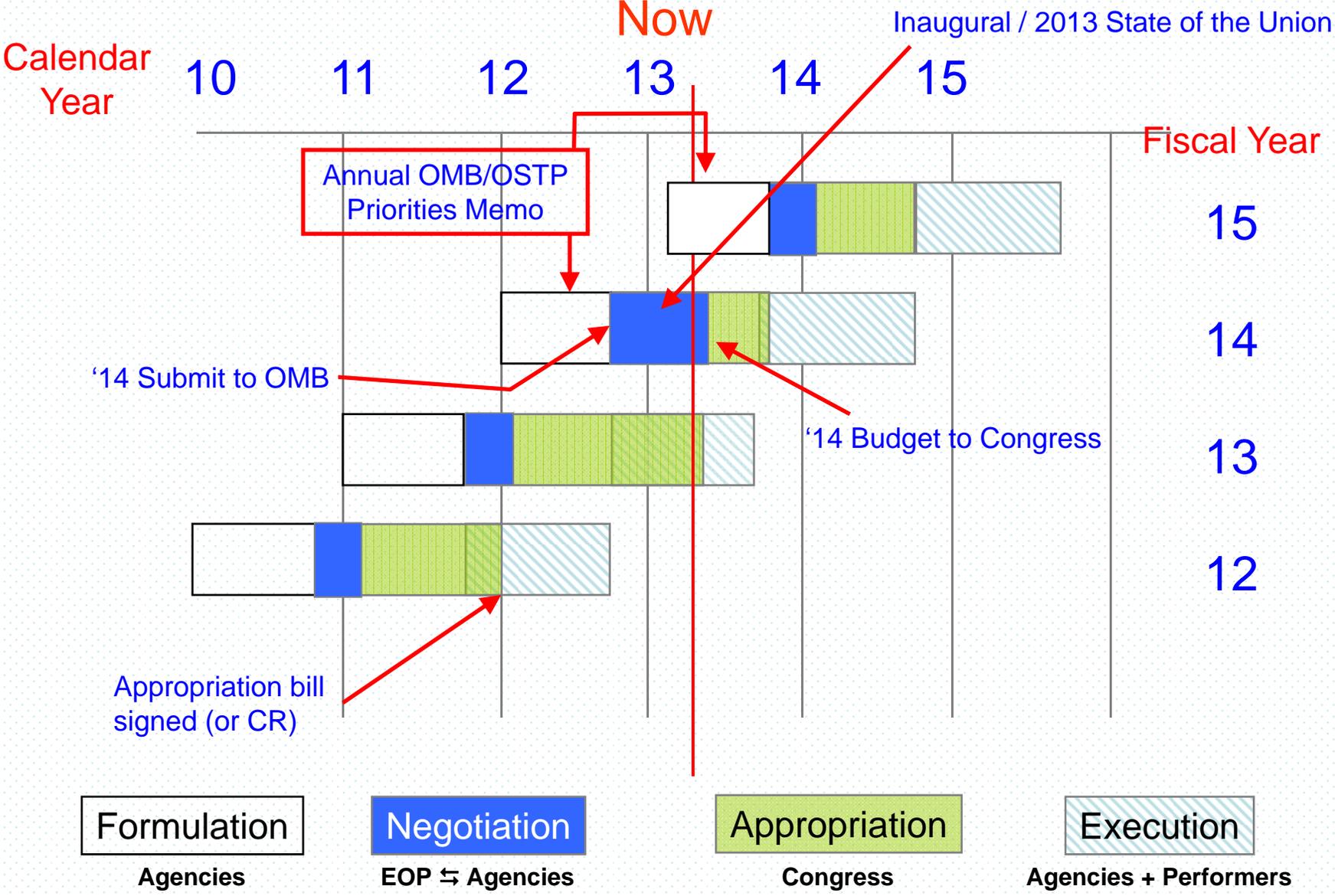


How the Budget Becomes Law

FY 2013 Proposal = \$3.8 Trillion



Budget Timeline



Is there an official definition for R&D?

- Yes. NSF keeps it. OMB and others' definitions of R&D follow it, and the definitions are coordinated internationally.
- “S&T” is not defined officially; neither is “innovation.”
- NSF does annual surveys to measure U.S. R&D
- OMB asks agencies to submit R&D funding data as part of the budget process

4. *Research, development, and R&D plant.* Amounts for R&D and R&D plant include all direct, incidental, or related costs resulting from, or necessary to, performance of R&D and costs of R&D plant as defined below, regardless of whether the R&D is performed by a federal agency (intramurally) or by private individuals and organizations under grant or contract (extramurally). R&D excludes routine product testing, quality control, mapping and surveys, collection of general-purpose statistics, experimental production, and the training of scientific personnel.

a. *Research* is defined as systematic study directed toward fuller scientific knowledge or understanding of the subject studied. Research is classified as either basic or applied according to the objectives of the sponsoring agency.

Basic research is defined as systematic study directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications toward processes or products in mind.

Applied research is defined as systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met.

b. *Development* is defined as systematic application of knowledge or understanding, directed toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

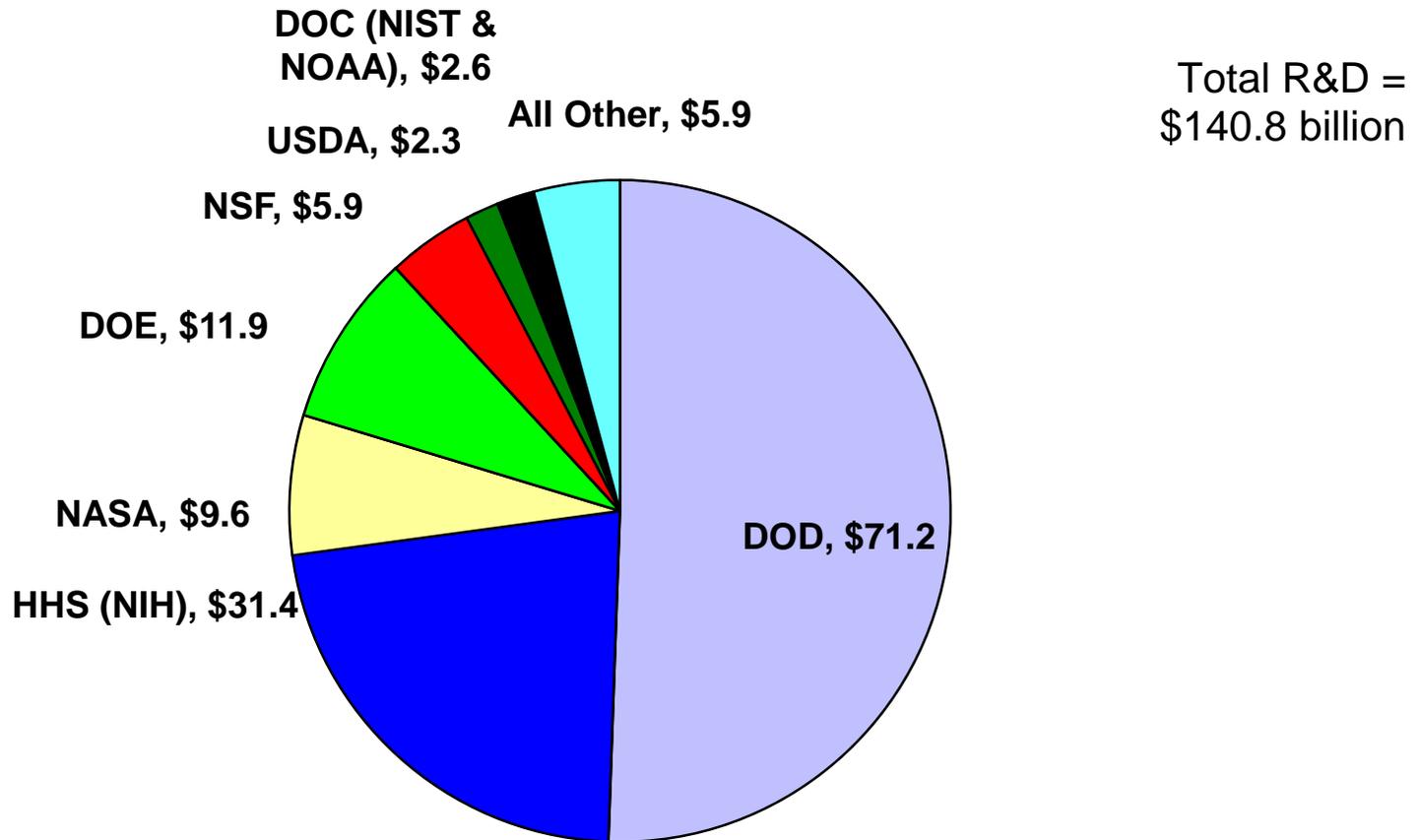
To better differentiate between the part of the federal R&D budget that supports science and key enabling technologies (including technologies for military and nondefense applications) and the part that primarily supports testing and evaluation (mostly of defense-related systems), NSF collects from the DOD development dollars in two categories: advanced technology development and major systems development.

DOD uses service codes 6.1 through 6.7 to classify data into the survey categories. Within DOD's research categories, basic research is classified as 6.1, and applied research is classified as 6.2. Within DOD's development categories, advanced technology development is classified as 6.3. Major systems development is classified as 6.4 through 6.7 and includes component developmental prototypes, demonstration and development of management support, and operational system development.



Total R&D by Agency: 2013 Budget

Budget Authority in billions of dollars



The FY 2013 Budget Process (1)

Spring 2011– Agencies begin to formulate their FY 2013 proposals.

Summer 2011 – Agencies formulate their FY 2013 proposals based on broad strategic guidance from OMB (Office of Management and Budget) (and OSTP for science agencies).

September 2011 – Agencies deliver their budgets to OMB. Agencies brief OMB (and OSTP, and other WH offices) on their budgets.

Fall 2011 – Agencies negotiate with OMB over their FY 2013 proposals. OSTP has an advisory role. Agencies respond to OMB (and OSTP) questions.

November 2011 – PASSBACK (decisions on agency budgets, including additions or subtractions to the original agency proposals).

November – December 2011– Appeals. If agencies are unhappy with their passbacks, they can appeal. OMB resolves appeals. (Appeals can go to the OMB Director, the West Wing, and in a few cases to the President.)

January 2012– Settlement. Agencies finalize their requests. OMB, OSTP, and agencies then work on finalizing budget documents.

February 2012 – President releases his proposed FY 2013 budget and transmits it to Congress.



Example: FY 2014 OSTP-OMB Priorities Memo

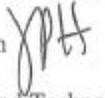


June 6, 2012

M-12-15

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Jeffrey D. Zients 
Acting Director
Office of Management and Budget

Dr. John P. Holdren 
Director
Office of Science and Technology Policy

SUBJECT: Science and Technology Priorities for the FY 2014 Budget

Scientific discovery, technological breakthroughs, and innovation are the primary engines for expanding the frontiers of human knowledge and are vital for responding to the challenges and opportunities of the 21st century. We look to scientific innovation to promote sustainable economic growth and job creation, improve the health of the population, move toward a clean energy future, address global climate change, manage competing demands on environmental resources, and ensure the security of the Nation.



The FY 2013 Budget Process (2)

Spring 2012 – Agency officials (including OSTP) and public witnesses testify at congressional budget and oversight hearings; authorizing committees try to write and pass authorization bills or offer formal ‘views and estimates’ on budgets. Appropriations committees also hold hearings.

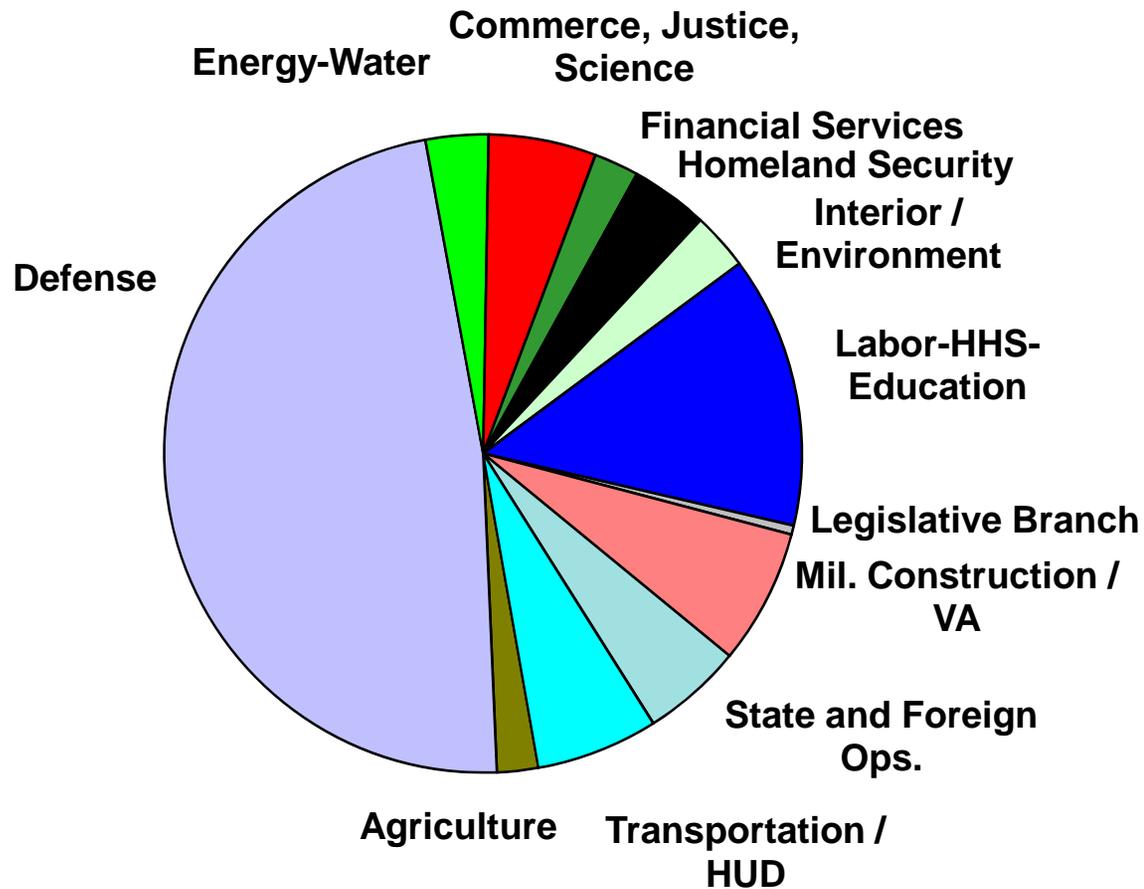
Spring-Summer 2012 – Congress approves its FY 2013 budget resolution, its big-picture budget plan. (Deadline: April 15.)

- Appropriations committees receive 302(a) allocations from the budget resolution: total discretionary spending.
- Appropriations committees determine 302(b) allocations dividing total discretionary spending among 12 bills.
- The 2010 budget resolution allowed for a reconciliation bill (a special kind of budget bill) for health care reform and education loan reform. No budget resolution, so no reconciliation in 2012.



Discretionary Spending by Appropriations Bill

FY 2013 Budget = \$1.1 trillion



The FY 2013 Budget Process (3)

Summer 2012 – Appropriations subcommittees write appropriations bills. The full committees try to get the bills through the legislative process.

September 2012 – The House and Senate try to conference the 12 appropriations bills and send them to the President.

October 1, 2012 – FY 2013 begins. Discretionary programs must have a signed appropriations bill, or shut down. To allow more time, lawmakers pass continuing resolutions (CR's). (For FY 2013, we are still under a CR through Wednesday (3/27) covering all 12 appropriations bills.)

March 25, 2013 TODAY – Congress approved a 5-bill omnibus/7-bill year-long CR last week. President Obama may sign the bill into law today.



Bill language: (legal text in the bill)

19 OFFICE OF SCIENCE AND TECHNOLOGY POLICY
 20 For necessary expenses of the Office of Science and
 21 Technology Policy, in carrying out the purposes of the Na-
 22 tional Science and Technology Policy, Organization, and
 23 Priorities Act of 1976 (42 U.S.C. 6601–6671), hire of
 24 passenger motor vehicles, and services as authorized by

•HR 2847 RH

Report language : (explanatory statements in an accompanying report)

EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Fiscal Year 2009 enacted	\$5,303,000
Fiscal Year 2010 request	6,154,000
Recommended in the bill	7,154,000
Bill compared with:	
Fiscal Year 2009 enacted	+1,851,000
Fiscal Year 2010 request	+1,000,000

The Office of Science and Technology Policy (OSTP) is essential to the restoration of science to its proper place in the formulation of policy and the operations of the federal government. The Committee recommendation is \$1,851,000 above the amount appropriated for fiscal year 2009 and \$1,000,000 above the budget request. This increase is provided to ensure that OSTP has adequate staff to fulfill key requirements in the coming year.

OSTP is directed to develop a plan for achieving and sustaining global Earth observations in collaboration with NOAA, NSF, NASA, USGS, the Department of Energy and other appropriate

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1 5 U.S.C. 3109, not to exceed \$2,800 for official reception
 2 and representation expenses, and rental of conference
 3 rooms in the District of Columbia. \$7,154,000.

agencies and in consultation with the Earth science community, and to direct implementation of this Earth observations plan as called for in the National Academy of Sciences report *Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond*. This plan should include satellite, suborbital, ground- and ocean-based observations and be delivered to the Committees on Appropriations of the House and Senate no later than April 1, 2010.

The Committee anticipates that OSTP will need to provide leadership and active coordination on hydrology research and water resources, understanding terrestrial managed and unmanaged ecosystems and their role in climate change, nanotechnology, including its societal dimensions, and science, technology, engineering and mathematics (STEM) education. Each of these areas involves significant activities of multiple departments and agencies.





“Now, if we want to make the best products, we also have to invest in the best ideas. Every dollar we invested to map the human genome returned \$140 to our economy -- every dollar. Today, our scientists are mapping the human brain to unlock the answers to Alzheimer’s. They’re developing drugs to regenerate damaged organs; devising new material to make batteries 10 times more powerful. Now is not the time to gut these job-creating investments in science and innovation. Now is the time to reach a level of research and development not seen since the height of the Space Race. We need to make those investments.”

- President Barack Obama
February 12, 2013





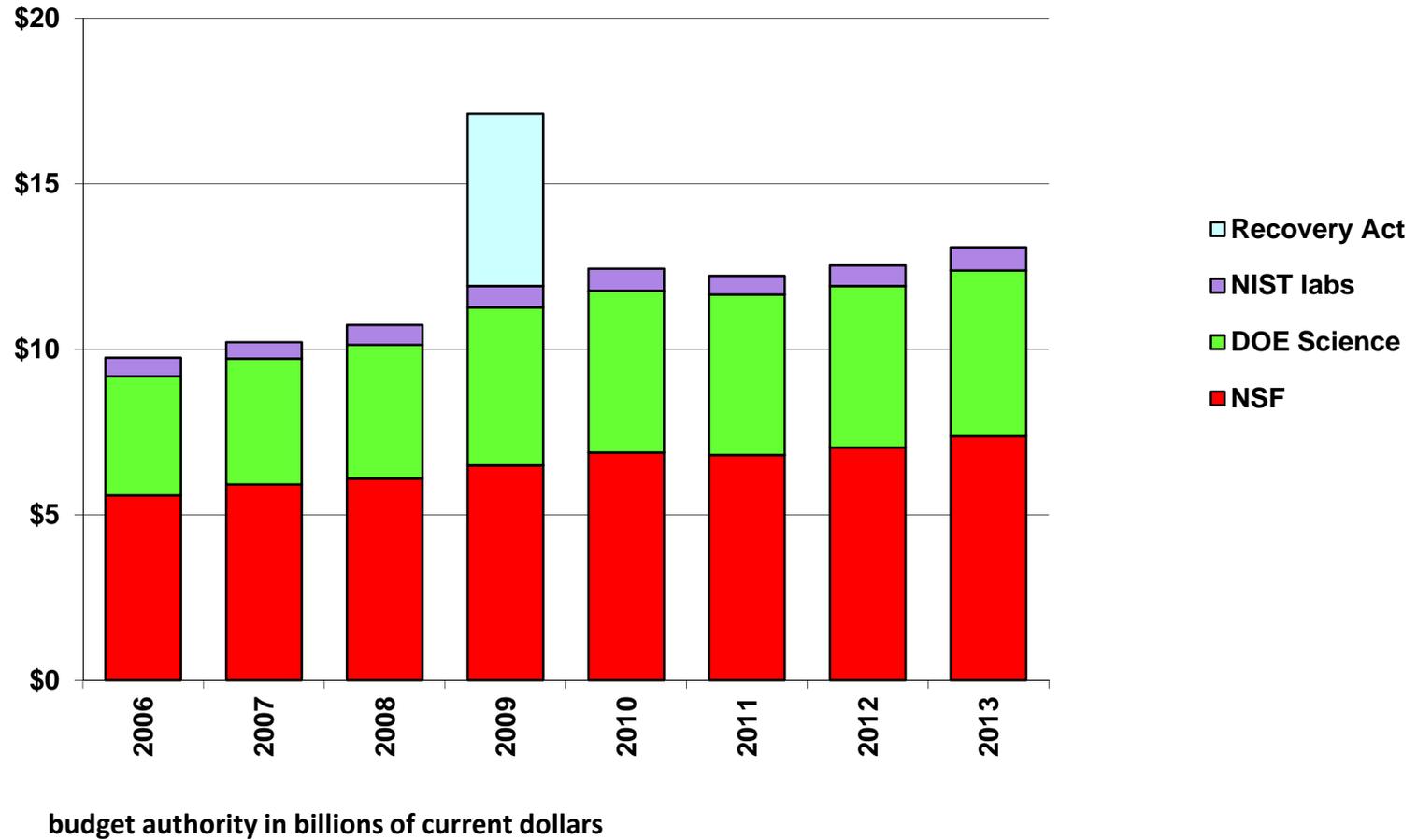
“But for the sake of our children and our future, we must do more to combat climate change. Now, it’s true that no single event makes a trend. But the fact is the 12 hottest years on record have all come in the last 15. Heat waves, droughts, wildfires, floods -- all are now more frequent and more intense. We can choose to believe that Superstorm Sandy, and the most severe drought in decades, and the worst wildfires some states have ever seen were all just a freak coincidence. Or we can choose to believe in the overwhelming judgment of science -- and act before it’s too late.”

- President Barack Obama

February 12, 2013



President's Plan for Science and Innovation



FEBRUARY 2012 OSTP

President's Strategy for American Innovation

Securing Our Economic Growth and Prosperity

Catalyze Breakthroughs for National Priorities

- Unleash a clean energy revolution
- Accelerate biotechnology, nanotechnology, and advanced manufacturing
- Develop breakthroughs in space applications
- Drive breakthroughs in health care technology
- Create a quantum leap in educational technologies

Promote Market-Based Innovation

- Accelerate business innovation with the R&E tax credit
- Promote investments in ingenuity through effective intellectual property policy
- Encourage high-growth and innovation-based entrepreneurship
- Promote innovative, open, and competitive markets

Invest in the Building Blocks of American Innovation

- Educate Americans with 21st century skills and create a world-class workforce
- Strengthen and broaden American leadership in fundamental research
- Build a leading physical infrastructure
- Develop an advanced information technology ecosystem



OUR CHANGING PLANET

THE U.S. GLOBAL CHANGE RESEARCH PROGRAM FOR FISCAL YEAR 2013

A Supplement to the President's Budget for Fiscal Year 2013



A Report by the U.S. Global Change Research Program and the Subcommittee on Global Change Research

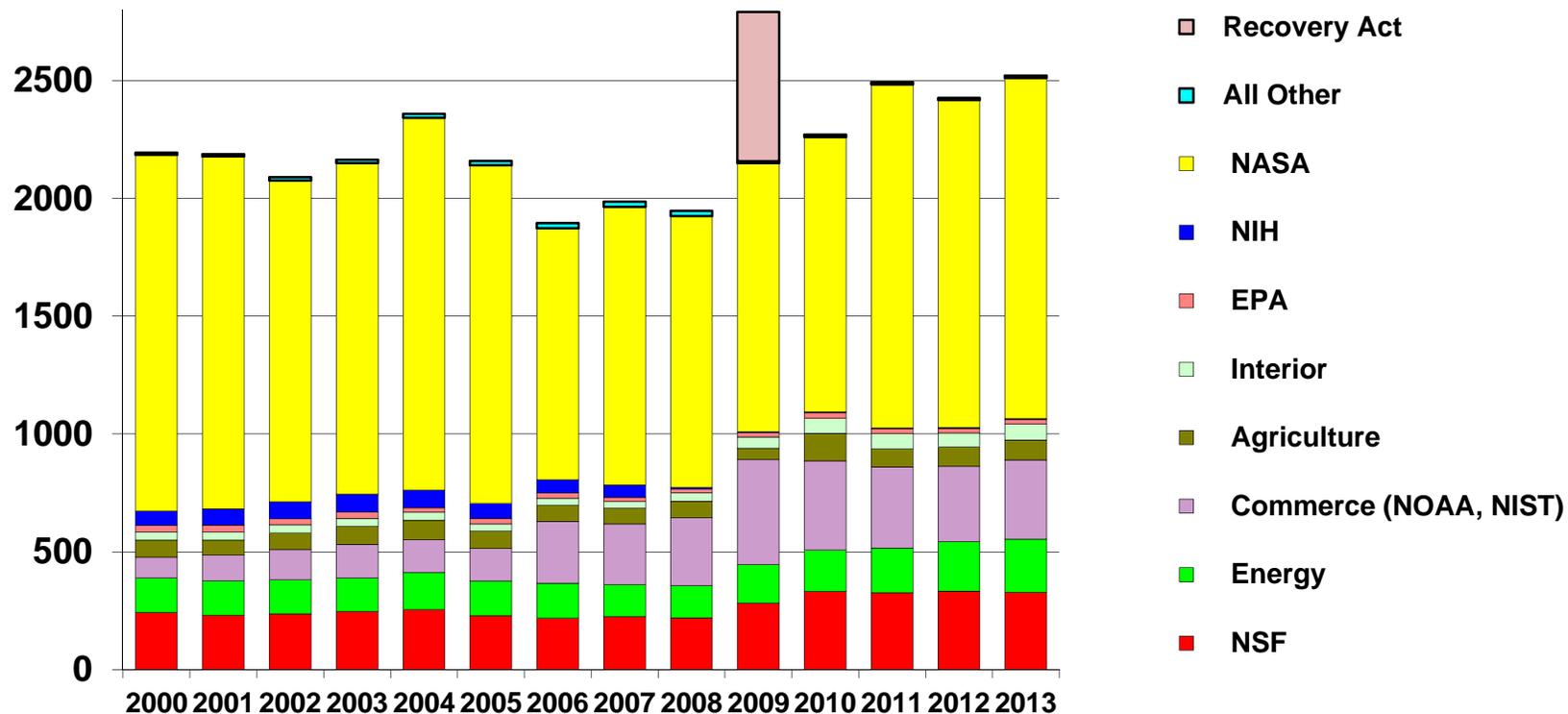


THE NATIONAL GLOBAL CHANGE RESEARCH PLAN 2012-2021

A STRATEGIC PLAN FOR THE U.S. GLOBAL CHANGE RESEARCH PROGRAM



US Global Change Research Program



in millions of constant FY 2012 dollars

FEB. '12 OSTP

FY 2009 figures include Recovery Act funding.

THANK YOU
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www.whitehouse.gov/ostp

