



# The 2015 Budget: Science, Technology, and Innovation for Opportunity and Growth

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“We know that the nation that goes all-in on innovation today will own the global economy tomorrow. This is an edge America cannot surrender. Federally funded research helped lead to the ideas and inventions behind Google and smartphones... There are entire industries to be built based on vaccines that stay ahead of drug-resistant bacteria, or paper-thin material that’s stronger than steel.”

- President Barack Obama  
January 28, 2014

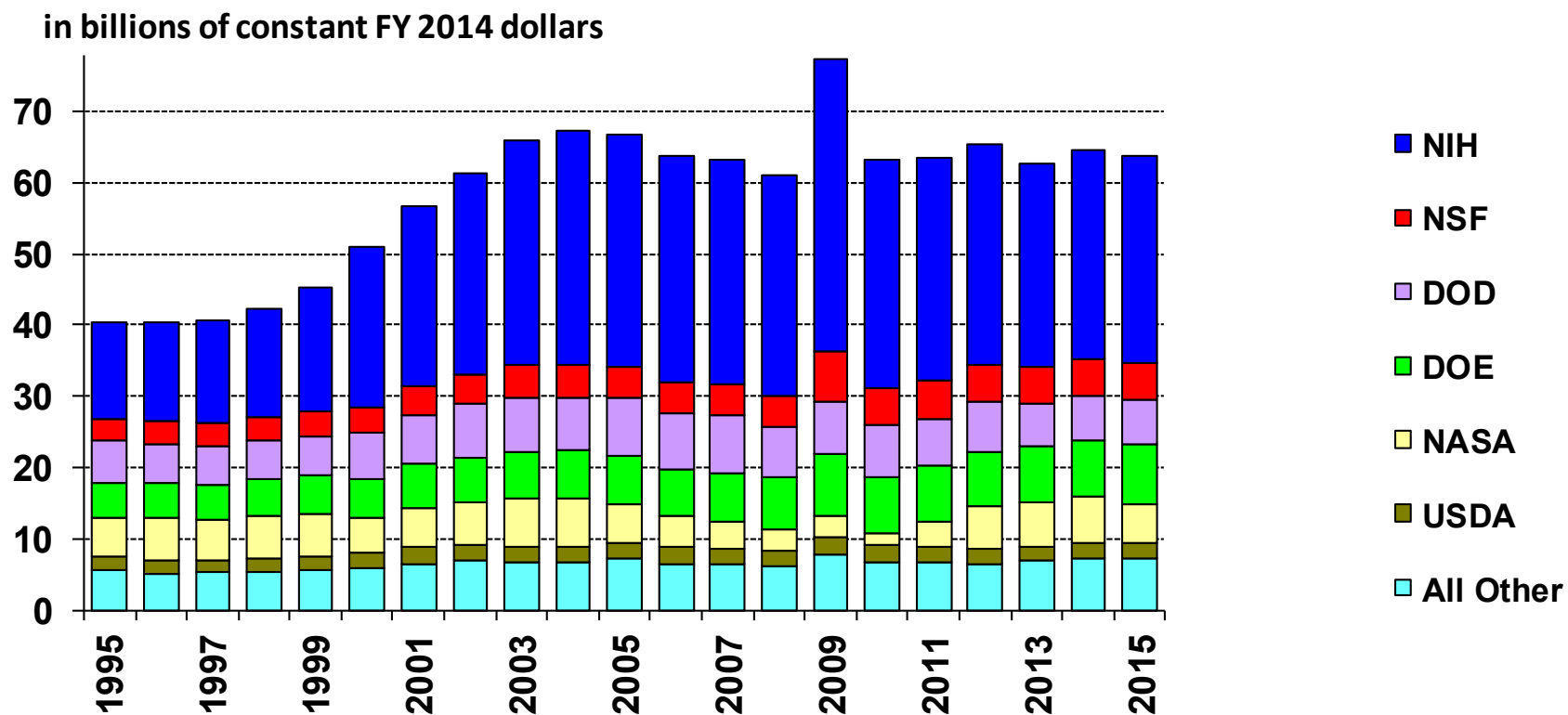


# The 2015 Budget:

- Sustains a world-leading science and research enterprise
- Spurs innovation
- Makes America a leader in advanced manufacturing
- Advances cleaner, American energy
- Improves our understanding of and response to global climate change
- Supports research to improve the health of all Americans
- Prepares Americans with science, technology, engineering, and mathematics skills
- Calls for an Opportunity, Growth, and Security Initiative
- Improves America's long-term fiscal health



## Federal Research by Agency, FY 1995-2015



FY 2009 figures include Recovery Act appropriations.  
 Research includes basic research and applied research.  
 FY 2015 figures exclude Opportunity, Growth, and Security Initiative proposals.

# Sustaining a world-leading science and research enterprise

- \$65.9 billion for non-defense R&D.
- \$69.5 billion for defense R&D.
- \$7.3 billion for the National Science Foundation (NSF).
- \$5.1 billion for the Department of Energy (DOE) Office of Science.
- \$17.5 billion for NASA.
- \$1.6 billion for Department of Commerce R&D.
- \$2.4 billion for U.S. Department of Agriculture R&D, including \$325 million for competitively-awarded research grants to meet national needs and \$75 million for three new multidisciplinary research institutes.
- Additional R&D investments are proposed in the Opportunity, Growth, and Security Initiative.



# Investing in R&D for National Security

	2014 estimate (\$ mil.)	2015 budget (\$ mil.)	'14-'15 Change (%)
DOD "S&T" (6.1-6.3)	12,009	11,515	-4.1%
DHS R&D	1,032	876	-15.1%
DOD DARPA	2,779	2,915	+4.9%

- The Budget invests in defense-related S&T across a diverse portfolio, including advanced manufacturing, energy, cybersecurity, robotics, a safe and secure nuclear arsenal, explosives detection, and biodefense.
- The Budget sustains support for Department of Homeland Security (DHS) S&T programs and provides funds to complete construction of the National Bio- and Agro-Defense Facility.
- There are additional security investments in the Opportunity, Growth, and Security Initiative.





“We also have the chance, right now, to beat other countries in the race for the next wave of high-tech manufacturing jobs. My administration has launched two hubs for high-tech manufacturing in Raleigh, North Carolina and Youngstown, Ohio, where we’ve connected businesses to research universities that can help America lead the world in advanced technologies.”

- President Barack Obama  
January 28, 2014



# Advanced Manufacturing in the 2015 Budget

## Making America a leader in advanced manufacturing

Support advanced manufacturing R&D

- \$2.2 billion in advanced manufacturing R&D in the 2015 Budget.
- These investments will expand R&D on innovative manufacturing processes, advanced industrial materials, and robotics.
- \$305 million for the DOE Advanced Manufacturing Office.

Establish a national network of manufacturing innovation institutes

- Investments in the Opportunity, Growth, and Security Initiative will help support a national network of up to 45 institutes.
- The Administration has already launched four manufacturing innovation institutes and has committed to funding five additional institutes to bring the total to nine.







“Now, one of the biggest factors in bringing more jobs back is our commitment to American energy. The all-of-the-above energy strategy I announced a few years ago is working, and today, America is closer to energy independence than we have been in decades... Taken together, our energy policy is creating jobs and leading to a cleaner, safer planet.”

- President Barack Obama

January 28,

2014



# Energy R&D Highlights in the 2015 Budget

## Advancing cleaner, American energy

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### Clean Energy Technology

- \$2.3 billion for DOE Energy Efficiency and Renewable Energy (EERE) and \$325 million for ARPA-E.

### Opportunity, Growth, and Security Initiative

- Additional renewable energy and energy efficiency R&D investments, and a Race to the Top for Energy Efficiency, are proposed in the Initiative.

### Hydraulic Fracturing

- \$48 million for DOE, EPA, and USGS for research to reduce health and environmental impacts from hydraulic fracturing.

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### Energy Security Trust

- \$2 billion over ten years, from existing Federal oil and gas development royalty revenues, in research on cost-effective transportation alternatives that use cleaner fuels to reduce our dependence on oil.



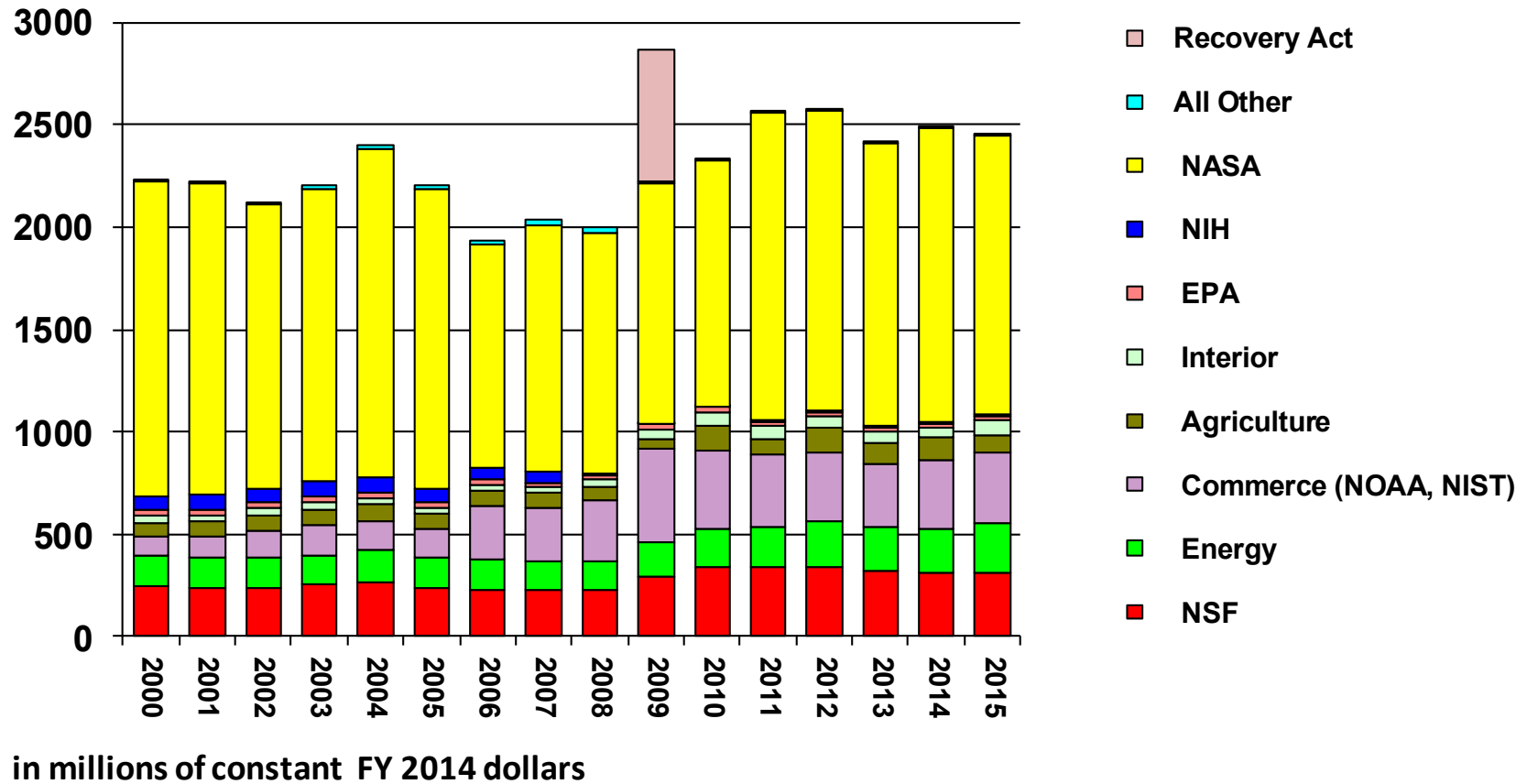


“Over the past eight years, the United States has reduced our total carbon pollution more than any other nation on Earth. But we have to act with more urgency -- because a changing climate is already harming Western communities struggling with drought, and coastal cities dealing with floods... The shift to a cleaner energy economy won’t happen overnight, and it will require some tough choices along the way. But the debate is settled. Climate change is a fact. ”

- President Barack Obama  
January 28, 2014



# US Global Change Research Program



MARCH 2014 OSTP  
 FY 2009 figures include Recovery Act funding.

# Global Change Research in the 2015 Budget

## Understanding and responding to global climate change

- \$2.5 billion for the U.S. Global Change Research Program (USGCRP).
- USGCRP supports research to improve our ability to understand, assess, predict, and respond to global change.
- The 2015 Budget supports an integrated suite of climate change observations, process-based research, modeling and assessment, and adaptation science activities.
- USGCRP investments support the President's Climate Action Plan.
- Additional climate investments, including \$1 billion for a new Climate Resilience Fund, are proposed in the Opportunity, Growth, and Security Initiative.



# Health Research in the 2015 Budget

## Supporting research to improve the health of all Americans

- The 2015 Budget provides \$30.2 billion for the National Institutes of Health (NIH).
- The Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative will continue with a Federal commitment of approximately \$200 million from NIH, DARPA, and NSF.





“Teachers and principals in schools from Tennessee to Washington, D.C. are making big strides in preparing students with the skills for the new economy -- problem solving, critical thinking, science, technology, engineering, math.”

- President Barack Obama  
January 28, 2014



# Preparing Americans with STEM skills

- \$2.9 billion for Federal science, technology, engineering, and mathematics (STEM) education programs in the 2015 Budget.
- Agencies will coordinate to implement the Federal STEM Education 5-Year Strategic Plan.
- \$320 million for a STEM Innovation Initiative in the Department of Education, including funds to prepare and support 100,000 excellent STEM teachers over the next decade.
- NSF has a \$118 million effort to improve retention of STEM-inclined undergraduates toward the goal of 1 million more STEM graduates.
- \$333 million in NSF for the Graduate Research Fellowship program.
- \$150+ million in investments at agencies including NSF, NASA, and the Smithsonian Institution to provide students with engaging hands-on STEM experiences beyond the classroom.
- The Budget proposes a fresh reorganization of STEM education programs to improve the effectiveness of Federal investments.





# Opportunity, Growth, and Security Initiative

The \$56 billion Opportunity, Growth, and Security Initiative is fully paid for with a balanced package of reforms. These additional investments in education; research and innovation; infrastructure and jobs; opportunity and mobility; public health, safety, and security; and more efficient and effective government can spur economic progress and strengthen our national security. The Initiative proposes:

- \$970 million in additional NIH funding;
- \$1 billion in a Climate Resilience Fund;
- \$552 million for NSF to expand the frontiers of knowledge;
- \$2.1 billion for Department of Defense (DOD) R&D;
- \$886 million in additional NASA funding;
- and additional funds for investments in USDA, DOE, NIST, NOAA, and other science agencies.



# Improving America's Long-Term Fiscal Health

- Over the last four years, the Federal budget deficit has been cut in half as a share of the economy.
- The 2015 Budget continues to reduce projected deficits while making investments for the future.
- The Budget's proposals falls within the caps of the Budget Control Act of 2011 and the Bipartisan Budget Act of 2013.
- The Budget proposes a separate, fully-paid-for Opportunity, Growth, and Security Initiative for additional investments in research, education, infrastructure, and other national priorities.





“We’ve got to restore the idea of opportunity for all people... Now, the opportunity agenda I laid out in my State of the Union address is going to help us do that. It’s an agenda built around four parts. Number one: More new jobs in American manufacturing, American energy, American innovation, American technology. Number two: Training folks with the skills to fill those jobs. Number three: Guaranteeing access to a world-class education for every child, not just some. Number four: Making sure our economy rewards honest work with wages you can live on, and savings you can retire on, and health insurance that is there for you when you need it.”

- President Barack Obama  
February 7, 2014





*THANK YOU*

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