



The 2014 Budget: A World-Leading Commitment to Science and Research

Science, Technology, Innovation, and STEM Education in the 2014 Budget

“When we invest in the best ideas before anybody else does, our businesses and our workers can make the best products and deliver the best services before anybody else. And because of that incredible dynamism, we don’t just attract the best scientists or the best entrepreneurs -- we also continually invest in their success.”

- President Barack Obama
April 2013

The President’s 2014 Budget is guided by the ambitious vision of a growing, globally competitive economy that generates secure middle-class jobs on a solid foundation of free enterprise, individual initiative, and opportunity for everyone. The Budget supports the vision by investing wisely in science and engineering research, a sector of the American economy that has a proven track record of turning ideas into realities. And it provides support for the creation of new technologies, products, and services that—despite barely having been imagined a few years earlier—have the potential to create some of the biggest businesses, industries, and jobs of the future.

The 2014 Budget recognizes today’s fiscal constraints and makes tough but discriminating choices, limiting spending in many areas that in other times would be deemed worthy of greater support. But the Budget also focuses on and shows confidence in the future. By building and fueling America’s engines of discovery, it aims to expand the frontiers of human knowledge; promote sustainable economic growth by revitalizing America’s manufacturing sector with good middle-class jobs; cultivate a clean-energy future for the Nation and the world; improve health-care outcomes for more people at lower cost; manage competing demands on environmental resources while addressing global climate-change challenges; and strengthen our national security.

Under the President’s Budget—and in particular with its strong and strategically targeted investments in research and development (R&D)—America can strengthen its position as a magnet for new jobs and manufacturing, unlock the promise of American energy, and equip its citizens with the skills and training they need to create and fill the jobs of the future. To accomplish these goals, the President’s 2014 Budget proposes \$142.8 billion for Federal R&D (see Table 1). The 2014 Budget:

- **Sustains a World-Leading Commitment to Science and Research.** To meet America’s challenges, including those related to the economy, manufacturing, health, energy, climate, environment, and national security, the 2014 Budget calls for a Federal basic and applied research investment totaling \$68.1 billion, up \$4.8 billion or 7.5 percent compared to the 2012 enacted level. (All comparisons are in current, not-adjusted-for-inflation dollars; all comparisons are to 2012 enacted funding levels.)
- **Spurs Innovation.** To strengthen U.S. leadership in the 21st century’s knowledge-based economy within budget constraints, the 2014 Budget proposes a substantial increase in non-defense R&D to \$69.6 billion, an increase of 9.2 percent over the 2012 enacted level. The Budget also invests \$73.2 billion for defense R&D, a reduction of 5.2 percent compared to 2012.

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- **Maintains the President’s Commitment to Three Key Science Agencies.** Three key science agencies—the National Science Foundation (NSF), the Department of Energy (DOE) Office of Science, and the National Institute of Standards and Technology (NIST) laboratories—are critical to preserving America’s place as the world leader in innovation. The 2014 Budget maintains the President’s commitment to increase funding for research at these three science agencies by providing a total of \$13.5 billion, an increase of 8.0 percent above 2012 funding levels.
 - **Makes America a Magnet for Manufacturing.** Bolstering a growing national effort to partner with industry and academic centers to create new technologies and high-quality manufacturing jobs, the 2014 Budget provides \$2.9 billion for advanced manufacturing R&D, an 87 percent increase from 2012. The Budget will expand support for innovative manufacturing processes, advanced industrial materials, and robotics. These investments will complement ongoing efforts to encourage entrepreneurship and to improve the transitions from discovery to the marketplace. The Budget also includes a one-time \$1 billion investment to launch a network of up to 15 manufacturing innovation institutes across the country in a National Network for Manufacturing Innovation (NNMI).
 - **Advances Clean, American Energy.** To unlock the promise of American energy and continue on the path to a cleaner and more secure energy future, the Budget continues to advance the President’s “all-of-the-above” strategy of investing in clean energy R&D, promoting energy efficiency, and encouraging responsible domestic energy production. The 2014 Budget proposes \$379 million for transformational energy R&D in DOE’s Advanced Research Projects Agency-Energy (ARPA-E). The Budget proposes \$2.8 billion for DOE’s Office of Energy Efficiency and Renewable Energy, with a focus on further reducing cost and improving performance for renewable energy technologies, improving advanced vehicle technologies to make them as affordable and convenient as gasoline powered vehicles by 2022, and developing energy efficient advanced materials and processes that would enhance U.S. competitiveness by using less energy and cutting manufacturing costs. The Budget also calls on Congress to establish an Energy Security Trust (a mandatory program) that would invest \$200 million annually over ten years to fund research in transportation technologies that shift our cars and trucks off oil.
 - **Improves Our Understanding of the Threat of Global Climate Change.** The clean-energy proposals in the Budget will help to reduce the emissions driving climate-disrupting global change. The 2014 Budget also proposes \$2.7 billion, a 6.0 percent increase over 2012 enacted, for the U.S. Global Change Research Program (USGCRP) to support research to improve our ability to understand, predict, mitigate, and adapt to global change (see Table 2). The Budget also funds new investments in actionable science on climate change impacts and the development of technical resources, data, and tools for communities. And it supports efforts to make information about the Earth that is collected in several Federal agencies more consistent, reliable, and usable by local and regional planners and others.
 - **Supports Medical Research to Improve the Health of All Americans.** To maintain American leadership in biomedical research, improve the health of Americans, and build the American bioeconomy of the future, the 2014 Budget proposes \$31.3 billion for the National Institutes of Health (NIH), an increase of 1.5 percent compared to 2012.
 - **Educates Our Children in Science, Technology, Engineering, and Mathematics.** To ensure that our educational system is preparing students to become highly skilled workers and innovators prepared for challenging 21st century careers, the 2014 Budget proposes \$3.1 billion for Federal investments in science, technology, engineering, and mathematics (STEM) education, an increase

of 6.7 percent over 2012 funding levels. The Budget includes a reorganization of STEM education programs to improve the effectiveness of Federal investments in this domain.

- **Expands Private Sector Investment.** To provide incentives for U.S. industries to keep investing in American innovation, the 2014 Budget proposes to expand, simplify, and make permanent the Research and Experimentation (R&E) Tax Credit, providing companies with certainty that the credit will be available for the duration of their R&D investments.
- **Makes Smart Choices.** The Budget’s science, technology, and innovation investments fit within an overall discretionary budget capped at Budget Control Act of 2011 levels. The Budget reflects strategic decisions to focus resources on those areas where the payoff for the American people is likely to be highest, and allows for cuts in areas of lesser leverage. For example, the \$71.5 billion proposed for development—the “D” in R&D—in the 2014 Budget represents a decline of \$3.8 billion compared to 2012 enacted funding levels.

Priorities for Federal Research and Development in the 2014 Budget

“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 2013

The President’s 2014 Budget proposes \$142.8 billion for the Federal investment in research and development (see Table 1). The 2014 Budget sets strategic priorities and makes tough but smart choices to support investments in innovation that have the most potential to strengthen the American economy. Within a budget that reduces projected deficits and caps overall discretionary spending as required by the Budget Control Act of 2011, Federal R&D overall would increase \$1.9 billion or 1.3 percent over the 2012 enacted level. The 2014 Budget proposes a reduction in defense R&D to \$73.2 billion, \$4.0 billion or 5.2 percent less than the 2012 enacted level, and **\$69.6 billion for non-defense R&D, an increase of 9.2 percent or \$5.9 billion over the 2012 enacted level.** (All comparisons between 2012 appropriations and the 2014 Budget are in current, not-adjusted-for-inflation dollars. All figures exclude the potential effects of budget sequestration.)

The 2014 Budget recognizes the essential role of the Federal Government in fostering groundbreaking scientific and technological breakthroughs through its support of **basic and applied research**, which is key to improving our fundamental understanding of nature, revolutionizing key fields of science, and boosting long-term economic growth and quality of life through new technologies. **The Federal research investment (comprising basic and applied research, or the “R” in “R&D”) totals \$68.1 billion in the 2014 Budget (see Figure 1 and Table 3), up \$4.8 billion or 7.5 percent compared to the 2012 enacted level.** The 2014 Budget provides \$71.5 billion for development, the “D” in “R&D,” a reduction of \$3.8 billion or 5.0 percent compared to the 2012 level, mostly due to reductions in weapons-systems development activities in the Department of Defense (DOD) as its programs mature and transition to the production phase. R&D facilities and capital equipment funding totals \$3.2 billion, an increase of \$875 million above the 2012 enacted funding level to recapitalize research infrastructure.

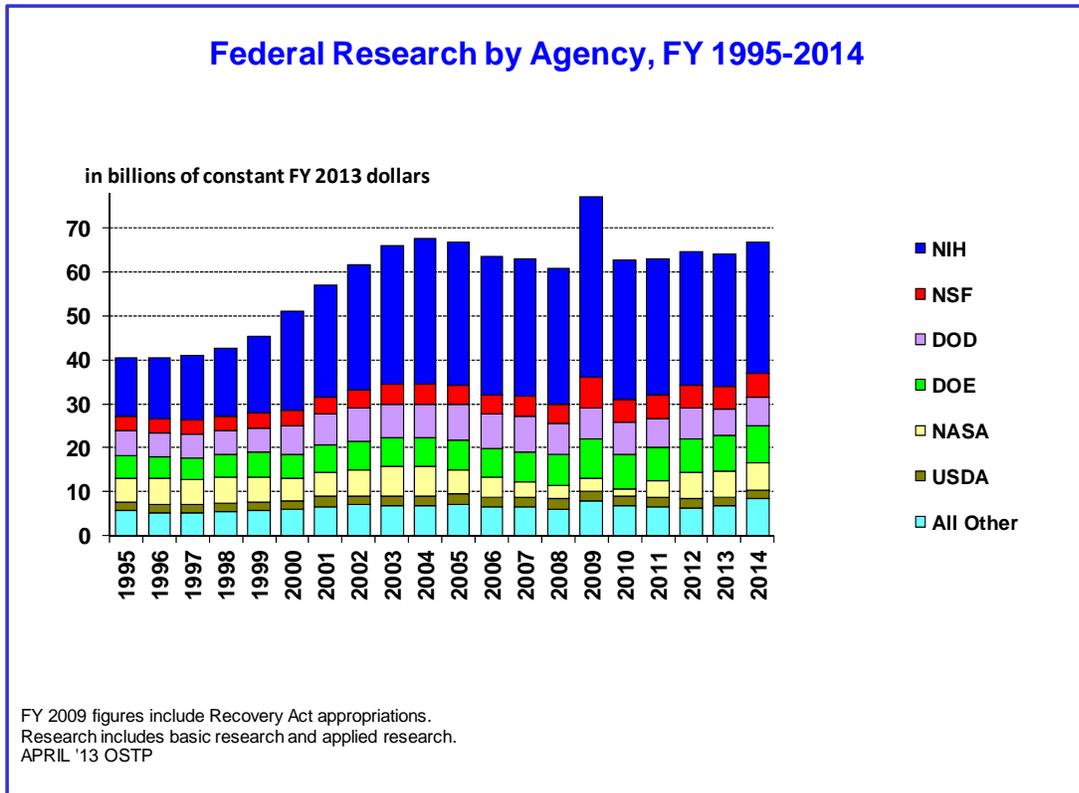


Figure 1.

Highlights of Key R&D Funding Agencies in the 2014 Budget

The **National Institutes of Health (NIH)** supports high-quality, innovative biomedical research aimed at developing knowledge and therapies that will lead to longer and healthier lives for all Americans. **The 2014 Budget provides \$31.3 billion for NIH, an increase of \$471 million or 1.5 percent over the 2012 funding level.** The 2014 Budget continues to support basic and applied biomedical research across a broad range of scientific and health opportunities, including delivering on the Administration's commitment to enhanced investment in Alzheimer's research. The Budget will increase focus on research that aims to increase understanding of the brain, improve the clinical trials network, and enhance the development of new therapeutics to treat diseases and disorders that affect millions of Americans. NIH will make an initial investment of \$40 million through the NIH Blueprint for Neuroscience Research for the development of new tools and training opportunities in support of the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative. NIH will implement new policies to collect better data on trainees and institutions' administrative costs. Within other agencies of the Department of Health and Human Services (HHS), the 2014 Budget includes \$10 million within the Centers for Disease Control and Prevention (CDC) to support research on the causes and prevention of gun violence and \$40 million for a new advanced molecular diagnostics initiative to more quickly determine where emerging diseases come from, whether microbes are resistant to antibiotics, and how microbes move through a population.

The **National Science Foundation (NSF)** is the primary source of support for academic research for most non-biomedical disciplines, integrating fundamental research and education across the entire spectrum of the sciences and engineering. **The increase in NSF funding to \$7.6 billion in 2014, or 8.4 percent more than the 2012 enacted level,** will expand the frontiers of knowledge, lay the foundation for economic growth and job creation, and educate a globally-competitive workforce. NSF will support job

creation in advanced manufacturing and emerging technologies with \$300 million for multidisciplinary research targeted at new materials, smart systems, advanced manufacturing technologies, and robotics technologies. To encourage interdisciplinary research for America's emerging bio-economy, the Budget proposes \$51 million for innovative proposals at the interface of biology, mathematics, the physical sciences, and engineering (BioMaPS). NSF intends to support approximately \$20 million in FY 2014 in research to advance the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative announced earlier this month by the President. NSF also proposes \$155 million, nearly double the 2012 enacted level, for a cyberinfrastructure initiative that will accelerate the pace of discovery in virtually every research discipline by advancing high performance computing, creating new research networks and data repositories, and developing new systems to better visualize data (CIF21). The Budget proposes \$25 million, an increase of \$17 million above the 2012 enacted level, for the public-private "Innovation Corps" program, which aims to speed the commercialization of discoveries made in university labs. The Budget also provides \$325 million for a newly-consolidated NSF graduate research fellowship program. (Additional NSF highlights can be found in OSTP's STEM Education fact sheet.)

The 2014 Budget makes strategic investments in long-term scientific and technological innovation within the **Department of Defense (DOD)** to ensure that the Nation has access to the best defense systems in the world. The Budget **proposes \$68.3 billion for DOD R&D, a \$4.6 billion decrease from the 2012 funding level.** The decrease represents reductions in development activities as programs mature and transition to production. The Budget proposes \$12.0 billion for DOD's S&T program, which consists of basic research, applied research and advanced technology development. The Budget proposes \$2.9 billion for the Defense Advanced Research Projects Agency (DARPA) for its support of longer-term breakthrough research, an increase of 1.8 percent over 2012. DARPA plans to invest \$50 million in a set of programs with the goal of understanding the dynamic functions of the brain and demonstrating breakthrough applications, in support of the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative. The 2014 Budget sustains DOD's support for basic research ("6.1") with a record commitment of \$2.1 billion, with a focus on high-priority areas such as cybersecurity, robotics, advanced learning, "big data," cleaner and more efficient energy, advanced manufacturing, and biodefense.

The **National Aeronautics and Space Administration (NASA)** 2014 Budget **provides \$17.7 billion, with an R&D portfolio totaling \$11.6 billion, an increase of \$290 million or 2.6 percent over the 2012 enacted level (see Table 1).** The Budget maintains NASA's current balanced portfolio of aeronautics and space technology development, Earth and space science, the development of rockets and capsules to carry explorers deeper into space, and the use of innovative commercial partnerships for crew and cargo transport to the International Space Station. The Budget provides \$821 million in NASA funding that will be coupled with private-sector investments to develop new U.S. capabilities to transport human crews to the International Space Station. It also provides \$2.7 billion for the next-generation, deep-space crew capsule and heavy lift rocket that will send human-exploration missions to new destinations—including a bold plan to send humans to an asteroid—and it invests \$942 million for the development of innovative new technologies that can expand the potential and lower the cost of our space science and exploration efforts as well as benefit other U.S. government and commercial space activities. NASA has unique expertise in satellite and sensor development, and the Budget makes best use of that expertise, providing \$1.8 billion to the Earth Science program, including funds to revamp the Landsat satellite program. The Budget accelerates efforts to develop the capabilities to defend Earth from asteroid impacts by identifying potentially hazardous objects and further investigating their scientific attributes. This work will also support NASA's new asteroid mission, which itself would serve as a key stepping stone to manned mission to Mars and other destinations. The Budget fully funds the James Webb Space Telescope, a 100-times more-capable successor to the Hubble Telescope, at \$658 million to keep it on track for launch in 2018 while maintaining a world-leading astrophysics program.

The **Department of Energy (DOE)** 2014 Budget positions the United States to extend its position as a world leader in clean energy and advanced manufacturing, and to respond to the threat of climate change, with an **R&D portfolio that totals \$12.7 billion, an increase of \$1.9 billion or 18 percent over the 2012 enacted level** (see Table 1). DOE's Office of Science (DOE SC) delivers discoveries and scientific tools that transform our understanding of energy and nature. The 2014 DOE SC Budget of \$5.2 billion increases funding for both research and cutting-edge facilities and is part of the President's commitment to increase funding for three key science agencies. The 2014 Budget invests in DOE's clean-energy programs to accelerate R&D and further increase the cost-competitiveness and deployment of renewable power, electric vehicles, next-generation biofuels, advanced energy-efficient manufacturing, and energy efficiency, including \$2.8 billion for the Office of Energy Efficiency and Renewable Energy (EERE). The 2014 Budget provides \$379 million for the Advanced Research Projects Agency – Energy (ARPA-E) to support transformational discoveries and to accelerate solutions in the development of clean energy technologies. The Budget also includes \$12 million for DOE to continue a research initiative in collaboration with the Environmental Protection Agency (EPA) and the U.S. Geological Survey (USGS) to understand and minimize the potential environmental, health, and safety impacts of natural gas and oil production from hydraulic fracturing. The Budget includes a new \$25 million prize for the first natural-gas combined-cycle power plant to demonstrate carbon capture and storage. In DOE's defense-related portfolio, the Budget includes \$4.9 billion, an increase of \$631 million over the 2012 enacted level, for R&D in support of the nuclear stockpile, nuclear nonproliferation, and U.S. Navy nuclear propulsion. The Budget also proposes an Energy Security Trust to support research into a range of cost-effective alternative transportation technologies by investing \$200 million annually over ten years from revenue generated by Federal oil and gas development.

R&D in the **U.S. Department of Agriculture (USDA)** increases \$192 million to **\$2.5 billion** in the 2014 Budget. The Budget increases funding to \$383 million for the National Institute of Food and Agriculture's (NIFA) key competitive research program, the Agriculture and Food Research Initiative (AFRI), and targets areas that are fundamental to maintaining American scientific leadership in the agricultural sciences: human nutrition and obesity reduction, food safety, bioenergy, sustainable agriculture, and climate change. The Budget also increases in-house research in select areas such as crop protection, sustainable agriculture, climate change, childhood obesity, and food safety, and fully funds the Census of Agriculture. The Budget includes \$155 million for the full cost of renovation and construction of a USDA poultry disease bio surveillance and research facility to reduce poultry diseases that could affect human health and the agricultural sector

The Department of Commerce's **National Institute of Standards and Technology (NIST)** promotes U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology. The 2014 Budget proposes **\$754 million for NIST's intramural laboratories, a 21 percent increase over the 2012 enacted level**, to help fulfill the President's commitment to increase funding for three key science agencies. This funding will accelerate advances in areas germane to advanced manufacturing, nanotechnology, cybersecurity, disaster resilience, and forensic science. It also includes \$21 million for the Advanced Manufacturing Technology Consortia program, a public-private partnership that supports innovative approaches to addressing common manufacturing challenges faced by American businesses. The Budget includes a one-time \$1 billion investment to launch a network of up to 15 manufacturing innovation institutes across the country in a National Network for Manufacturing Innovation (NNMI). The **National Oceanic and Atmospheric Administration (NOAA)**, also part of the Department of Commerce, plays a vital role in monitoring and stewardship of the Earth's oceans, atmosphere, and marine habitats. The NOAA budget of \$5.4 billion in appropriations, including \$733 million for R&D, strengthens support for critical weather satellite programs, Earth observations, and NOAA's other core science and stewardship responsibilities. The 2014 Budget provides \$2.0 billion to continue the development of polar-orbiting and geostationary weather satellite systems, as well as satellite-borne measurements of sea level and potentially damaging solar storms. The Budget also

includes significant investments in NOAA's ocean and coastal research and observing programs, while increasing support for stock assessments and habitat and species conservation activities that are essential to restoring and maintaining healthy, sustainable fisheries.

Department of Homeland Security (DHS) R&D totals \$1.4 billion in the 2014 Budget, up \$893 million from the 2012 enacted level in order to restore steep cuts enacted in 2011 and 2012 appropriations and to fully fund construction of a state-of-the-art biomedical countermeasures facility. The 2014 Budget funds important R&D on cybersecurity, nuclear materials and explosives detection, and chemical/biological response systems, and supports the development of state-of-the-art technologies for use by Federal, State, and local homeland security operators. The Budget also proposes \$714 million to construct the National Bio- and Agro-Defense Facility (NBAF), a state-of-the-art laboratory to study and develop countermeasures for animal, emerging, and zoonotic diseases that threaten human health and our agricultural industry.

The **Department of Education** R&D portfolio totals **\$352 million in the 2014 Budget.** The Budget provides ongoing support to achieve the President's goal of educating 100,000 effective STEM teachers over the next decade. The Budget invests \$150 million, redirected from within the Department and from other agencies, to support STEM Innovation Networks, which would be consortia of districts working in partnership with universities, science agencies, businesses, and other educational entities. (Additional Education highlights can be found in OSTP's STEM Education fact sheet.)

The **Department of Veterans Affairs (VA)** 2014 Budget provides a total of \$1.2 billion for R&D. VA research focuses on biomedical topics of special relevance to wounded warriors and supports a robust program of clinical and translational research. VA's research program benefits from clinical care and research occurring together, allowing discoveries to be directly applied to the care of veterans.

The 2014 Budget for the **Department of the Interior** provides \$963 million for R&D, an increase of 17 percent or \$143 million over the 2012 enacted level, to invest in science to support decision-making in the Department's resource management and trust responsibilities. This funding supports scientific monitoring, research, and analysis. Specific science activities supported include energy permitting, ecosystem management, rapid response to natural disasters, climate change adaptation, oil-spill restoration, water and wildlife monitoring, and tribal natural resource management. The total budget of the **United States Geological Survey (USGS)** is **\$1.2 billion, or a \$99 million increase from the 2012 enacted level.** The 2014 Budget proposes \$19 million for USGS to continue its collaboration with EPA and DOE to conduct a research initiative to understand and minimize the potential environmental, health, and safety impacts of natural gas development using hydraulic fracturing.

Environmental Protection Agency (EPA) R&D funding totals \$560 million in the 2014 Budget, a slight decrease from the 2012 funding level. With this investment, EPA will focus on enhancing and strengthening the planning and delivery of science in its restructured research and science programs, making these efforts more integrated and cross-disciplinary. The 2014 Budget supports high-priority research of national importance in such areas as potential endocrine disrupting chemicals, green chemistry, green infrastructure, computational toxicology, and drinking water. The 2014 Budget proposes \$14 million for EPA's research collaboration with USGS and DOE to reduce the potential health and environmental impacts of natural gas development using hydraulic fracturing.

The 2014 Budget provides **\$942 million for Department of Transportation (DOT) R&D**, an increase of 2.3 percent compared to the 2012 funding level. The Budget request includes funding for several R&D activities in the Federal Aviation Administration's (FAA) Next Generation Air Transportation System, known as NextGen. The Federal Highway Administration (FHWA) also manages a comprehensive, nationally coordinated highway research and technology program, engaging and cooperating with other

highway research stakeholders. FHWA performs research activities associated with safety, infrastructure preservation and improvements, operations, and environmental mitigation and streamlining. Other DOT agencies conduct critical targeted research in support of transportation safety goals.

The 2014 Budget **provides \$250 million for R&D programs in the Smithsonian Institution**, an increase of \$7 million over the 2012 enacted level. The Smithsonian is an important partner in the Federal effort to improve the reach of informal education activities in STEM fields by ensuring that they are aligned with State standards and are relevant to the classroom.

Multi-agency initiatives

A number of R&D investments are being addressed through multi-agency activities coordinated through the National Science and Technology Council (NSTC) and other interagency forums. Table 2 shows details of three such efforts: global change research, networking and information technology R&D, and nanotechnology R&D.

U.S. Global Change Research Program: The 2014 Budget provides \$2.7 billion for the 13-agency U.S. Global Change Research Program (USGCRP), an increase of 6.0 percent over the 2012 enacted level (see Table 2). The Budget includes an expanded commitment to global-change research, with the understanding that insights derived today will pay off with interest in the years and decades ahead as the Nation works to limit and adapt to shifting environmental conditions. The trends in global climate are clear, as are their primary causes, and the investments in this research arena in the 2014 Budget are a critical part of the President’s overall strategy to mitigate U.S. greenhouse-gas emissions and move toward a clean- energy economy even as the Nation adapts to those changes that are inevitable. (Additional USGCRP highlights can be found in OSTP’s USGCRP fact sheet.)

Networking and Information Technology R&D: The 2014 Budget proposes \$4.0 billion for the multi-agency Networking and Information Technology Research and Development (NITRD) Program, an increase of 4.2 percent over the 2012 enacted level. The NITRD Program provides strategic planning for and coordination of agency research efforts in cybersecurity, high-end computing systems, advanced networking, software development, high-confidence systems, health IT, wireless spectrum sharing, cloud computing, and other information technologies. The 2014 Budget includes a focus on research to improve our ability to derive value and scientific inferences from unprecedented quantities of data (“big data”) and continues to invest in technological foundations for assured computing and improved hardware, software, and network design and engineering to address the goal of making Internet communications more secure and reliable. Budget information for NITRD is available at www.nitrd.gov.

National Nanotechnology Initiative: The 2014 Budget proposes \$1.7 billion for the multi-agency National Nanotechnology Initiative (NNI)—a \$159 million reduction from the 2012 enacted level. To accelerate nanotechnology development in support of the President’s priorities and innovation strategy, the NNI member agencies focus on R&D of materials, devices, and systems that exploit the unique physical, chemical, and biological properties that emerge in materials at the nanoscale (approximately 1 to 100 nanometers). Participating agencies continue to support fundamental research for nanotechnology-based innovation, technology transfer, and nanomanufacturing through individual investigator awards; multidisciplinary centers of excellence; education and training; and infrastructure and standards development, including openly-accessible user facilities and networks. Furthermore, agencies have identified and are pursuing Nanotechnology Signature Initiatives in the national priority areas of nanomanufacturing, solar energy, sustainable design of nanoengineered materials, nanoscale sensors, and nanoelectronics through close alignment of existing and planned research programs, public-private partnerships, and research roadmaps (for details see nano.gov/initiatives/government/signature). Budget information is available at www.nano.gov.

Table 1. R&D in the 2014 Budget

Table 1. R&D in the FY 2014 Budget by Agency

(budget authority in millions of dollars)

| | FY 2012 | FY 2014 | Change FY 12-14 | |
|--------------------------------------|---------|----------------|-----------------|---------|
| | Actual | Budget | Amount | Percent |
| Total R&D | | | | |
| Defense (military) | 72,916 | 68,291 | -4,625 | -6.3% |
| S&T ('6.1'-'6.3') | 12,058 | 11,984 | -74 | -0.6% |
| Health and Human Services | 31,377 | 32,046 | 669 | 2.1% |
| <i>Nat'l Institutes of Health</i> | 30,012 | 30,490 | 478 | 1.6% |
| <i>All Other HHS R&D</i> | 1,365 | 1,556 | 191 | 14.0% |
| NASA | 11,315 | 11,605 | 290 | 2.6% |
| Energy 1/ | 10,811 | 12,739 | 1,928 | 17.8% |
| <i>Atomic Energy Defense R&D</i> | 4,257 | 4,888 | 631 | 14.8% |
| <i>Office of Science</i> | 4,463 | 4,744 | 281 | 6.3% |
| <i>Energy R&D 1/</i> | 2,091 | 3,107 | 1,016 | 48.6% |
| National Science Foundation | 5,636 | 6,148 | 512 | 9.1% |
| Agriculture | 2,331 | 2,523 | 192 | 8.2% |
| Commerce 2/ | 1,254 | 2,682 | 1,428 | 113.9% |
| NOAA | 574 | 733 | 159 | 27.7% |
| NIST 2/ | 557 | 1,626 | 1,069 | 191.9% |
| Interior | 820 | 963 | 143 | 17.4% |
| <i>U.S. Geological Survey</i> | 673 | 761 | 88 | 13.1% |
| Transportation | 921 | 942 | 21 | 2.3% |
| Environmental Protection Agency | 568 | 560 | -8 | -1.4% |
| Veterans Affairs | 1,160 | 1,172 | 12 | 1.0% |
| Education | 397 | 352 | -45 | -11.3% |
| Homeland Security | 481 | 1,374 | 893 | 185.7% |
| Smithsonian | 243 | 250 | 7 | 2.9% |
| Patient Centered Outcomes Res. | 120 | 498 | 378 | 315.0% |
| Int'l Assistance Programs | 188 | 182 | -6 | -3.2% |
| All Other | 374 | 446 | 72 | 19.3% |
| Total R&D | 140,912 | 142,773 | 1,861 | 1.3% |
| Defense R&D | 77,173 | 73,179 | -3,994 | -5.2% |
| Nondefense R&D | 63,739 | 69,594 | 5,855 | 9.2% |
| Basic Research | 31,740 | 33,162 | 1,422 | 4.5% |
| Applied Research | 31,618 | 34,963 | 3,345 | 10.6% |
| Total Research | 63,358 | 68,125 | 4,767 | 7.5% |
| Development | 75,244 | 71,463 | -3,781 | -5.0% |
| R&D Facilities and Equipment | 2,310 | 3,185 | 875 | 37.9% |

1/ DOE 2014 total includes mandatory proposal for the Energy Security Trust.

2/ NIST 2014 total includes mandatory proposal for the National Network for Manufacturing Innovation.

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All comparisons are between 2012 and 2014 because of the late completion of 2013 appropriations.

Table 2. Interagency Science and Technology Initiatives

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(budget authority in millions)

| | FY 2012 | FY 2014 | Change FY 12-14 | |
|--|--------------|--------------|-----------------|--------------|
| | Actual | Budget | Amount | Percent |
| National Nanotechnology Initiative (NNI) | | | | |
| National Science Foundation | 466 | 431 | -35 | -7.6% |
| Defense | 426 | 217 | -209 | -49.1% |
| Energy | 314 | 370 | 56 | 17.8% |
| NASA | 19 | 18 | -1 | -5.9% |
| Commerce (NIST) | 95 | 102 | 7 | 7.0% |
| Health and Human Services | 480 | 488 | 8 | 1.7% |
| Agriculture | 25 | 23 | -1 | -5.2% |
| Environmental Protection Agency | 18 | 17 | 0 | -1.7% |
| Homeland Security | 19 | 35 | 16 | 86.5% |
| DOT - FHWA | 1 | 2 | 1 | 100.0% |
| All Other | 2 | 2 | 0 | 0.0% |
| Total Nanotechnology | 1,863 | 1,704 | -159 | -8.6% |
| Networking and Information Technology R&D (NITRD) | | | | |
| Commerce | 119 | 170 | 51 | 42.6% |
| Defense | 1,279 | 1,317 | 38 | 3.0% |
| Energy | 498 | 541 | 44 | 8.8% |
| Homeland Security | 54 | 77 | 22 | 40.6% |
| Health and Human Services 1/ | 558 | 552 | -6 | -1.0% |
| NASA | 78 | 76 | -2 | -1.9% |
| National Science Foundation | 1,216 | 1,227 | 11 | 0.9% |
| All Other | 7 | 8 | 1 | 10.0% |
| Total NITRD | 3,809 | 3,968 | 159 | 4.2% |
| U.S. Global Change Research Program (USGCRP) | | | | |
| National Science Foundation | 333 | 326 | -7 | -2.1% |
| Energy | 212 | 220 | 8 | 3.9% |
| Commerce (NOAA, NIST) | 327 | 371 | 45 | 13.8% |
| Agriculture | 115 | 126 | 11 | 9.8% |
| Interior (USGS) | 59 | 72 | 13 | 22.2% |
| Environmental Protection Agency | 18 | 20 | 2 | 11.1% |
| National Institutes of Health | 6 | 15 | 9 | 150.0% |
| NASA | 1,422 | 1,493 | 71 | 5.0% |
| Smithsonian | 8 | 8 | 0 | 0.0% |
| Transportation | 1 | 1 | 0 | 0.0% |
| Total USGCRP | 2,501 | 2,652 | 151 | 6.0% |

1/ Includes funds from offsetting collections for Agency for Healthcare Research and Quality (AHRQ).

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All comparisons are between 2012 and 2014 because of the late enactment of 2013 appropriations.

Table 3. Research in the 2014 Budget

Table 3. Research in the FY 2014 Budget

(budget authority in millions of dollars)

| | FY 2012 | FY 2014 | Change FY 12-14 | |
|-----------------------------------|---------|---------------|-----------------|---------|
| | Actual | Budget | Amount | Percent |
| RESEARCH (basic + applied) | | | | |
| Defense (military) | 6,742 | 6,736 | -6 | -0.1% |
| <i>Basic Research ("6.1")</i> | 2,014 | 2,134 | 120 | 6.0% |
| Health and Human Services | 31,128 | 31,842 | 714 | 2.3% |
| <i>Nat'l Institutes of Health</i> | 29,879 | 30,356 | 477 | 1.6% |
| NASA | 5,831 | 6,301 | 470 | 8.1% |
| Energy 1/ | 7,496 | 8,534 | 1,038 | 13.8% |
| <i>Office of Science</i> | 3,839 | 4,053 | 214 | 5.6% |
| National Science Foundation | 5,101 | 5,600 | 499 | 9.8% |
| Agriculture | 2,051 | 2,081 | 30 | 1.5% |
| Commerce 2/ | 941 | 2,278 | 1,337 | 142.1% |
| NOAA | 396 | 504 | 108 | 27.3% |
| NIST 2/ | 461 | 1,515 | 1,054 | 228.6% |
| Interior | 704 | 831 | 127 | 18.0% |
| <i>U.S. Geological Survey</i> | 573 | 640 | 67 | 11.7% |
| Transportation | 651 | 658 | 7 | 1.1% |
| Environmental Protection Agency | 480 | 473 | -7 | -1.5% |
| Veterans Affairs | 1,088 | 1,100 | 12 | 1.1% |
| Education | 233 | 212 | -21 | -9.0% |
| Homeland Security | 161 | 274 | 113 | 70.2% |
| Smithsonian | 200 | 214 | 14 | 7.0% |
| Patient Centered Outcomes Res. | 120 | 498 | 378 | 315.0% |
| Int'l Assistance Programs | 163 | 157 | -6 | -3.7% |
| All Other | 268 | 336 | 68 | 25.4% |
| Total Research | 63,358 | 68,125 | 4,767 | 7.5% |

1/ DOE 2014 total includes mandatory proposal for the Energy Security Trust.

2/ NIST 2014 total includes mandatory proposal for the National Network for Manufacturing Innovation.

OSTP - April 2013

All comparisons are between 2012 and 2014 because of the late completion of 2013 appropriations.