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Other Selected Agencies

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HIGHLIGHTS

- The discretionary R&D budget of the **National Institute of Standards and Technology (NIST)** would increase by 18.1 percent to reach \$655 million. Additional mandatory proposals would push NIST R&D to \$1.9 billion, more than triple FY 2012 levels.
- R&D at the **National Oceanic and Atmospheric Administration (NOAA)** would increase 12.1 percent to \$651 million, with the bulk of the increase going to satellites.
- The FY 2013 **U.S. Geological Survey (USGS)** request is \$1.1 billion, a \$34.5 million increase. R&D would increase 7.6 percent to \$727 million in the request, which prioritizes programs that protect lives and human property, long-term monitoring, and R&D.
- Compared to FY 2012, the **Environmental Protection Agency's (EPA)** R&D would increase 1.4 percent to \$576 million in the request, contrasting the 1.2 percent decline in the request for the agency as a whole.
- The President's FY 2013 budget request for the **Department of Transportation (DOT)** includes a 17 percent increase in R&D, and among other things, would elevate the Research and Innovative Technology Administration to the Office of the Secretary.

- **The Department of Veterans Affairs (VA)** requested \$1.2 billion in direct R&D appropriations for 2013, a flat budget that would fail to keep pace with inflation.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

In recent years, many policymakers have placed the **National Institute for Standards and Technology (NIST)** at the heart of efforts to boost innovation in America's manufacturing base, as outlined in the Administration's recent *National Strategic Plan for Advanced Manufacturing*. The FY 2013 request would increase NIST's discretionary budget to \$857 million, a 14 percent increase from the prior year. The R&D portion of the budget would receive an 18.1 percent increase to \$655 million. These figures fall short of the levels authorized in the 2010 America COMPETES Act, which established an 11-year doubling trajectory for NIST from FY 2006 and authorized slightly more than \$1 billion for FY 2013. However, the Administration has also requested \$1.2 billion in mandatory R&D funding via a pair of legislative proposals dealing with advanced manufacturing and wireless public safety infrastructure. This funding would increase the agency's total budget to \$2.2 billion and the R&D budget to \$1.9 billion. One of these proposals has already been approved by Congress; both are discussed below (also see Table II-14).

Scientific and Technical Research and Services (STRS), the largest NIST account, houses the agency's laboratory research programs and covers 88 percent of the agency's discretionary R&D funding, including all of its basic research. The FY 2013 request would increase the total STRS budget to \$648 million, a 14.2 percent increase. STRS is largely focused on measurement science and standards development across an array of fields, including bio- and nanomanufacturing, advanced communications, forensic science, and cybersecurity. The request includes \$20 million for the establishment of four university-based Centers of Excellence in interdisciplinary measurement science and technology development, and \$10 million for participation in the interagency Materials Genome Initiative. The request would also reduce select STRS extramural grant programs by \$12 million. To support these activities, the Administration is requesting \$60 million in NIST's Construction of Research Facilities account, including \$12 million for major renovations to the agency's laboratories in Boulder, CO.

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The other manufacturing R&D performance account, Industrial Technology Services (ITS), has experienced flux in recent years. The program houses the Hollings Manufacturing Extension Partnership (MEP) program, now in its 24th year, but also formerly housed the Technology Innovation Program and the Baldrige Performance Excellence Program. Both of these public-private extramural initiatives were zeroed out by Congress in FY 2012. The Administration proposes an essentially flat budget for MEP in FY 2013, but requests an additional \$21 million for the establishment of a new industry-led manufacturing consortia program. STRS funding would also supplement ITS activities with \$45 million in advanced manufacturing research support.

As mentioned above, mandatory proposals substantially boost the agency's budget request. One of these proposals, for the Wireless Innovation Fund, provides \$300 million for research and development of advanced technologies for wireless public safety communication. Authorization and funding for this program was provided in Sections 6303 and 6413 of the Middle Class Tax Relief and Job Creation Act of 2012, which Congress passed and the President signed in February 2012 (PL 112-96). The other proposal, for a National Network for Manufacturing Innovation, is described as "a network of institutes where researchers, companies, and entrepreneurs can come together to invest in new manufacturing technologies with broad applications," and would help technologies transition across the valley of death. The Administration is requesting legislation to provide one-time mandatory funding of \$1 billion for this network.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

The **National Oceanic and Atmospheric Administration** (NOAA) made headlines before the budget request, when President Obama proposed moving NOAA from the Department of Commerce to the Department of the Interior as part of a reorganization of the Commerce Department. Congress would need to approve such a move, and it does not appear to be imminent, but the scientific community and members of Congress were decidedly mixed at the prospect.

NOAA's FY 2013 budget request is \$5.1 billion, an increase of \$153 million over FY 2012. NOAA's satellite programs are the big winner in the request, with the National Environmental Satellite, Data and Information Service seeing an 8.7 percent requested increase to \$2.0 billion. After underfunding in FY 2011 led to the possibility of gaps in

monitoring and data, the Administration's request of \$916 million would get the Joint Polar Satellite System back on track, especially after receiving \$924 million in FY 2012. The Geostationary Operational Environmental Satellite – R Series weather satellite would also see an increase.

The FY 2013 request would increase NOAA's R&D by 12.1 percent to \$651 million. Although the National Ocean Service, National Marine Fisheries Service, and National Weather Service would see a cut in their overall budget request, R&D within these programs would increase.

The Office of Oceanic and Atmospheric Research (OAR) would receive \$413.8 million, a 7.6 percent increase. Within OAR, increases are proposed for climate research, while ocean, coastal, and Great Lakes research would see cuts.

After several attempts, NOAA abandoned efforts to launch a National Climate Service. Billed as no-cost realignment to improve the delivery of climate information, the service was met with congressional opposition, particularly from the House Science, Space, and Technology Committee.

DEPARTMENT OF THE INTERIOR (DOI)

The largest research agency in the DOI is the **U.S. Geological Survey (USGS)**. The FY 2013 USGS request is \$1.1 billion, a \$34.5 million increase. R&D would increase 7.6 percent to \$727 million in the request, which prioritizes programs that protect lives and human property, long-term monitoring, and R&D.

Increases are seen for programs supporting the Department of the Interior's New Energy Frontier initiative, including a \$13 million USGS increase for hydraulic fracturing research. Within another DOI initiative focused on Water Challenges, USGS increases would go to WaterSMART and to establish a National Groundwater Monitoring Network.

In the mission areas, Ecosystems would receive \$178 million, a 10.3 percent increase. Increases are slated for ecosystem restoration in the Chesapeake Bay, the California Bay Delta, Puget Sound, and the Columbia River; invasive species research in the Everglades and on Asian carp; and research on white-nose syndrome in bats, coral reef health, and invasive brown tree snakes.

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Climate and Land Use Change would receive \$154 million, a nearly 7 percent increase. The largest increase is seen in the Climate Variability subaccount, which would increase \$8.8 million to \$67.7 million. The Land Use Change request is \$86 million. Landsat would receive \$53.3 million, which includes funding to complete the Landsat Data Continuing Missions/Landsat 8 Ground System. USGS is continuing to work with the White House Office of Science and Technology Policy (OSTP), National Aeronautics and Space Administration (NASA), and NOAA to develop future cost-efficient alternatives for Landsat 9, following appropriators' warning last year that funding Landsat 9 with its current cost projections would "decimat[e] all other Survey programs."

Energy, Minerals, and Environmental Health funding would increase 0.9 percent to \$97 million, with increases slated for rare earth elements and other research areas USGS highlighted as contributing to economic growth. Mineral Resources are slated for a \$5 million cut. The Natural Hazards budget would increase \$10 million to \$145 million. The budget request contains increases for improving rapid response to disasters, research on East Coast earthquakes, and coastal initiatives. Cuts are proposed for volcano hazards research and coastal and marine geology. Water Resources funding would decrease 2.2 percent to \$210 million. Cuts are proposed for the Cooperative Water Program, water resource research account, and hydrologic networks and analysis. Core Science Systems would increase \$14 million to \$120 million.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA's budget request is \$8.3 billion, a 1.2 percent decrease from FY 2012. EPA programs and regulations have not been popular in this session of Congress, and the FY 2012 House appropriations bill would have blocked EPA funding to implement a number of regulations. Although the final appropriation did not include many of those provisions, attacks are likely again this year. Meanwhile, the House Science, Space, and Technology Committee is examining EPA's R&D activities and considering reauthorizing the Environmental Research, Development and Demonstration Authorization Act.

EPA's R&D budget would increase 1.4 percent to \$576 million in the request. Although R&D exists across the agency, the majority of R&D funds are located in the Science and Technology account, which would increase 1.7 percent to \$807 million. Within Science and Technology, Sustainable Communities and Homeland Security research would

decline. Air, Climate and Energy and the Safe and Sustainable Water accounts would see the largest increase, both around 7 percent. Human Health Risk Assessment and Chemical Safety would see smaller increases of 2.4 and 2.7 percent, respectively. The request includes \$575.6 million for EPA's Office of Research and Development, a \$7 million increase.

The Administration requests \$81 million for Science to Achieve Results (STAR) fellowships and grants to conduct research in key areas such as hydraulic fracturing, potential endocrine disruptors, and green infrastructure. EPA's request includes \$14 million to assess potential impacts of hydraulic fracturing on air quality, water quality, and ecosystems, a study jointly conducted with USGS and DOE. The EPA also will release an Interim Report on the Impacts of Hydraulic Fracturing on Drinking Water Resources in 2012, contributing to a subject that is seeing much debate in Congress and the states.

DEPARTMENT OF TRANSPORTATION (DOT)

While few dispute that infrastructure is a central responsibility for government, broad legislative challenges overhang the FY 2013 DOT request. The last surface transportation authorization bill, dubbed SAFETEA-LU (PL 109-59), was passed by Congress in 2005 and expired in 2009. Since then, funding has come through a series of short-term extensions. At the time of this writing, the most recent is set to expire in March 2012, and the politics for passage of a new reauthorization appear difficult. Nevertheless, the Administration's request proposes a six-year reauthorization totaling \$476 billion.

For FY 2013, the budget requests \$74.5 billion in budgetary resources for DOT, of which \$1.1 billion is for R&D, plus an additional \$440 million for technology investment. The R&D component represents a 17 percent increase above FY 2012. Three-quarters of DOT's R&D funding is for applied research, with most of the rest classified as development.

The budget also proposes to elevate the Research and Innovative Technology Administration (RITA) into an Office of the Assistant Secretary for Research and Technology. The Administration believes this will give research and technology a more central role within the department and enable better coordination. The proposal would reduce the RITA direct appropriation by 13 percent to \$14 million, but more than \$500 million in additional technical and statistical activities would

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be funded indirectly, via shared agreements with DOT's operating administrations, fees, and other means. Of this sum, \$100 million, representing a 35.3 percent increase, would fund competitively selected University Transportation Centers to pursue multimodal transportation research; an additional \$20 million would be dedicated to short-term multimodal research awards to universities, industry, or other entities.

Among the operating administrations, the Federal Highway Administration (FHWA) accounts for close to half of all R&D funding. The FY 2013 budget would increase the FHWA's R&D budget by \$117 million to \$528 million, a 28.4 percent increase, plus provide an additional \$323 million for technology development. The budget substantially increases investment in the Advanced Exploratory Research program, which conducts long-term high-risk research; the Intelligent Transportation Systems program, which seeks to meld highway infrastructure with advanced wireless technologies and is administered by RITA; and funding for state research.

The Federal Aviation Administration (FAA) is the other large R&D performer. While the agency's R&D budget would receive an overall decrease of 3.6 percent, this is primarily due to a reduction in facilities and equipment. The FAA's flagship R&D program — the NextGen initiative — would receive a 10.6 percent increase to \$1 billion, though less than 10 percent of this amount is R&D. This initiative is geared toward modernizing the nation's air traffic control system with automated satellite-based technology, and also pursues aircraft technology work to reduce noise and emissions and improve performance.

Lastly, the President's budget would provide a 60.1 percent increase in R&D funding to the National Highway Traffic and Safety Administration (NHTSA), the third-largest R&D performer, with what would be a \$110 million budget. The R&D performed by NHTSA addresses crashworthiness and crash avoidance; hydrogen fuel safety; and emerging vehicle electronics.

DEPARTMENT OF VETERANS AFFAIRS (VA)

With the population of American veterans surpassing 20 million — more than 10 times the number of active-duty personnel — the **Department of Veterans Affairs (VA)** has an important role to play in advancing their health and well-being through investments in research. In the FY 2013

request, the VA's direct R&D budget, which includes medical and prosthetics research and research support services, would remain flat, increasing by just \$2 million to \$1.2 billion. When factoring in the rate of inflation in the biomedical sciences, this would represent a real decrease of more than 2 percent. In addition to direction appropriations, the VA also pursues R&D funded from other federal and private sources. This other support typically reaches more than \$600 million per year, with two-thirds coming from other federal sources like the Department of Defense, Centers for Disease Control, and the National Institutes of Health. The Administration expects these contributions also to remain flat at \$710 million, bringing total VA-performed R&D to \$1.9 billion.

VA research covers 22 research areas, ranging from lung, kidney, and autoimmune disorders to sensory loss to bioterrorism. Very few of these areas would avoid reductions under the FY 2013 budget. Indeed, all would see a 2.4 percent reduction in funding, except for three: acute and traumatic injury research would receive an 11.5 percent increase; health systems research would receive a 16.5 percent increase; and mental illness, the largest research area, would receive a 2.2 percent increase. These increases are enough to offset the across-the-board cuts elsewhere to maintain a flat top line research budget of \$583 million in FY 2013.

In spite of these cuts, the Administration intends to prioritize research in a few key areas. First, special emphasis is placed on research needs in service to veterans of Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND), as well as illness in Gulf War veterans. Particular funding increases include 11.9 percent more for post-deployment mental health and 16.7 percent more for brain injury and neurotrauma, though Gulf War veterans illness research funding would decline by 2.3 percent, and women's health research would remain flat. The request also proposes a new \$2 million initiative to research the causes and management of pain, in light of the unique injuries veterans can sustain during combat. The Administration also is seeking \$27 million, a 36.3 percent increase, for the Million Veterans Program budget, an initiative to obtain voluntary genetic material samples from 1 million veterans.

Lastly, prosthetics research — a signature focus area for VA — would also receive a flat budget. Collaborative work on advanced prosthetics technology with industry and the Defense Advanced Research Projects Agency would proceed, however, including development of a prosthetic arm that could be controlled via neural signals.