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# **Associates LLC**

## **Analysis of the President's FY 2015 Budget Request for Federal Research, Health and Education Programs**

**Prepared by Lewis-Burke Associates LLC  
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Please Note: At the time of this writing (March 4), several agencies have not released complete FY 2015 budget request details. Lewis-Burke will update this document once those details are made available.

## Executive Summary

Only a month removed from the final fiscal year (FY) 2014 spending decisions in Congress and with the FY 2015 discretionary spending caps largely the same, President Obama released his FY 2015 budget request on March 4<sup>th</sup>, a month after the required February submission to Congress and with many on Capitol Hill already moving into the appropriations process.

The budget request presents a very mixed picture in which the President reflects a forecast for non-profit organizations which is in part optimistic, while proposing new programs which appeal to his base in an election year. Based in part on bipartisan supported initiatives such as advanced manufacturing and exascale computing, the request continually touts the virtues of research and education to enable the economy of the future. In addition, the request proposes several new initiatives, such as a competitive graduate medical education program and incentives for colleges and universities which graduate large cohorts of Pell-eligible students, but bases these ideas on difficult offsets and at a time when many in Congress are unable or unwilling to accommodate new proposals. Finally, reflecting the continuing pressures on research, health, and education organizations, the request would make substantial cuts to provider payments such as indirect medical education, would squeeze defense basic research accounts in favor of more applied or translational initiatives, and includes the proposed college rating system trumpeted by the President during his annual State of the Union speech.

Overall, adhering to the two year budgetary framework (P.L. 113-67) passed in December 2013, the budget request includes \$1.014 trillion in discretionary spending, a level which is largely consistent with FY 2014. The request also includes the continued partial offset to sequestration in FY 2015. While there is unlikely to be much debate over the overall spending levels, the total investment proposed for individual agencies, accounts, or programs will be adjusted by Congress in the annual appropriations process, especially in areas where substantial changes have been proposed from FY 2014 funding levels.

Regardless, the annual budget request, reflecting nearly nine months of planning and negotiations by the White House Administration, does provide a window into forthcoming plans and priorities. The proposed increases for research, assessment, education, and infrastructure reflect areas of emphasis for the remaining two and a half years of the Obama Administration and benchmarks for which congressional champions will advocate throughout the appropriations process.

Going beyond the budget requests for each agency and the statutory caps, President Obama proposes a new \$55.4 billion Opportunity, Growth, and Security Initiative (Opportunity Initiative), which includes numerous spending priorities such as advanced manufacturing, renewable energy, early education, infrastructure, etc. Beyond this stimulus-like fund, the budget proposes an ending of sequestration in FY 2016 and beyond through a combination of spending cuts, nearly \$650 billion in added tax revenue, and from deficit reduction resulting from enactment of immigration reform legislation. While none of these politically charged proposals are expected to be taken up by Congress in this election year, it does provide specific initiatives around which Democrats are expected to rally and reinforces the looming fight which must be waged by the next Congress for FY 2016 and beyond with respect to overall spending and the fate of sequestration.

*Note: In each of the budget write-ups included in this document, specific funding, which would only be included as part of the Opportunity Initiative detailed above, is highlighted separately where appropriate.*

## Department of Commerce

### National Oceanic and Atmospheric Administration

The President's FY 2015 budget request includes approximately \$5.59 billion for the National Oceanic and Atmospheric Administration (NOAA), which is an increase of approximately \$279.4 million or 5.3 percent over the FY 2014 enacted level.

- Full details of the FY 2015 NOAA budget request are still pending and are expected to be available in the next few weeks.
- The Obama Administration continues to prioritize support for NOAA's weather and climate satellites, with the National Environmental Satellite Service proposed to receive a 7.9 percent increase. Other line offices would also see significant boosts, with the exception of the National Weather Service (NWS), which would receive a slight cut.
- Scrutiny of NOAA by some Members of Congress is likely to continue this year, especially with respect to NOAA's proposal to lower funding for NWS despite the fact that Congress directed NOAA to focus on its weather mission in the FY 2014 appropriations bill.

### New and Signature Initiatives

NOAA notes the Gulf Coast Ecosystem Restoration Science, Observation, Monitoring and Technology Fund will continue to provide funding and support for the **NOAA RESTORE Act Science Program**. NOAA has requested \$2 million to coordinate with federal and state governments and science agencies to ensure the "best use of resources."

Additionally, the budget would provide funding to **NWS** to update its IT infrastructure in order to help improve weather and climate forecasts and warnings.

Source: The Department of Commerce's NOAA Budget in Brief document is available at <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/com.pdf>.

### National Oceanic and Atmospheric Administration

(In thousands)

	FY 2014 Enacted	FY 2015 Request*	Request vs. FY 2014
<b>NOAA, total</b>	<b>5,314,606</b>	<b>5,594,000</b>	<b>279,394 (5.3%)</b>
Oceanic & Atmospheric Research (OAR)	426,771	462,000	35,229 (8.3%)
National Weather Service (NWS)	1,067,246	1,064,000	-3,246 (0.3%)
National Ocean Service (NOS)	475,646	496,000	20,354 (4.3%)
National Marine Fisheries Services (NMFS)	812,560	837,000	24,440 (3.0%)
NOAA-Wide Program Support	445,700	487,000	41,300 (9.3%)
National Environmental Satellite Service	2,084,133	2,248,000	163,867 (7.9%)

\*FY 2015 request numbers are based on the Office of Management and Budget's NOAA Budget in Brief, which rounds to the nearest million, and are subject to change.

**National Institute of Standards and Technology**

As of Tuesday, March 4, the National Institute of Standards and Technology (NIST) has not released its FY 2015 budget request documents. Lewis-Burke will update this document with NIST's budget request details when information is released.

**Economic Development Administration**

As of Tuesday, March 4, the Economic Development Administration (EDA) has not released its FY 2015 budget request documents. Lewis-Burke will update this document with EDA's budget request details when information is released.

## Department of Defense

**The President's FY 2015 budget request would provide \$63.5 billion for Research, Development, Test, and Evaluation (RDTE) programs at the Department of Defense, including \$11.5 billion for Science and Technology (S&T) accounts. These amounts would represent an increase of 0.7 percent and a decrease of 4.1 percent from the FY 2014 enacted levels, respectively.**

- The President's FY 2015 budget request for the Department of Defense (DOD) reflects an ongoing debate about the size and direction of the nation's armed forces as the war in Afghanistan winds down. Constrained total spending levels force the Administration to propose a future military that is leaner, more agile, and more technologically advanced; President Obama's budget request for FY 2015 illustrates those goals.
- RDTE accounts, and particularly the S&T activities, would decline less than other areas of the defense budget. Within S&T funding, after years of robust funding for basic research championed by former Secretary Robert Gates, the budget would place a greater emphasis on applied research and advanced technology development accounts, indicating DOD's desire to push more technologies through the development pipeline.
- The President's budget request for DOD will be hotly debated during the FY 2015 defense appropriations and authorization processes. While many Members of Congress support defense research, some lawmakers have argued for prioritizing increased spending on training, operations, and readiness and may seek deeper cuts to research accounts as an offset.

### New and Signature Initiatives

President Obama's FY 2015 budget request would continue efforts to reshape DOD and the armed forces to adapt to a new budget reality following a decade of spending increases. With a total budget allocation of \$495.6 billion, the President's budget seeks to preserve the capability and readiness of U.S. armed forces while at the same time making difficult tradeoffs to meet budgetary constraints due to sequestration. The President's budget request seeks to advance the DOD priorities outlined in the 2012 Defense Strategic Guidance, as well as the more recent Strategic Management and Choices Review and the 2014 Quadrennial Defense Review (QDR) released in conjunction with the President's budget request.

Accordingly and as Lewis-Burke has previously reported, the President's budget request would direct resources away from a primary focus on the Middle East and towards the Asia-Pacific, including China. The proposed **rebalance to Asia** includes a greater reliance on air and sea power to counteract a decline in ground forces. It remains unclear whether Members of Congress will approve the proposed rebalance following recent events in Ukraine and Syria.

DOD is central to President Obama's efforts to reinvigorate the nation's manufacturing enterprise. With this in mind, the President's FY 2015 DOD budget request would support additional institutes through the **National Network for Manufacturing Innovation (NNMI)** to build on existing DOD-supported institutes. DOD does not reveal the topics for the new proposed NNMI institutes in the President's FY 2015 budget request, but demonstrates a commitment to using DOD's status as the federal government's largest buyer to promote the President's vision for advanced manufacturing.

The President's FY 2015 budget request would also provide \$26 billion for DOD through the interagency **Opportunity, Growth, and Security Initiative** (Opportunity Initiative), including \$355 million for S&T accounts. While unlikely to be approved, Opportunity Initiative funds for DOD would, according to the President's budget request, be used for enhanced modernization and readiness activities in FY 2015. Rather than support new initiatives, the President's budget request proposes Opportunity Initiative funds primarily to backfill modernization and readiness activities reduced by sequestration.

## Proposed Reductions and Terminations

President Obama's FY 2015 budget request proposes numerous reductions and terminations aimed at shrinking the DOD budget to align with the cap contained in the Ryan-Murray budget agreement. While few of the proposed reductions and terminations contained in the President's FY 2015 budget request would directly impact the research community, if Members of Congress reject these, they may be forced to cut from other areas in RDTE to comply with the budget cap for DOD.

Among the proposed reductions and terminations in the President's FY 2015 budget request are: another Base Realignment and Closure (BRAC) process to reduce the number of active military installations; scaling back or ending large acquisition programs, including the Army's Ground Combat Vehicle; reductions to the total size of the armed forces and reserves; and increasing the amount that service members pay for medical benefits through DOD's Tricare system.

Of specific note to the research and education community, the President's FY 2015 budget request proposes the termination of DOD's STARBASE program in accordance with the broader push to consolidate federal science, technology, engineering, and mathematics programs. STARBASE was previously proposed for termination in the FY 2014 budget request, but Congress rejected the termination.

## Ongoing Areas of Interest

Despite a reduction of 4.1 percent for S&T from the FY 2014 enacted level, the President's FY 2015 budget request for **DOD repeatedly identifies defense S&T programs as a priority**. However, after years of increases largely at the behest of former Secretary Robert Gates, DOD proposes to reduce basic research more than applied research or advanced technology development programs. This change is due to a desire among DOD and military leadership to push more technologies from the laboratory to the battlefield and the commercial marketplace. DOD officials continue to believe that sustaining technological supremacy will be paramount as total manpower declines in the coming years. Consistent with the rebalance to the Asia-Pacific and a corresponding reliance on air and sea power, Navy and Air Force RDTE would both be increased while Army RDTE spending would be cut under the President's FY 2015 budget request.

Specific priorities for DOD S&T programs outlined in the President's budget request include cybersecurity, power projection, autonomy, space, electronic warfare, efforts to counter weapons of mass destruction, and advanced weapons development. These topics are consistent with the S&T priorities previously outlined by DOD, which Acting Assistant Secretary of Defense for Research and Engineering Al Shaffer has indicated will continue to guide the Department's investment strategy going

forward. Other DOD research priorities identified in the President's FY 2015 budget request include mental health, renewable energy development, and neuroscience research through the interagency BRAIN initiative.

The **Defense Advanced Research Projects Agency (DARPA)** would receive a 4.9 percent increase to \$2.9 billion in the President's request to support high-risk, high-reward research. Additionally, the **Defense Threat Reduction Agency (DTRA) Basic Research Initiative** would be funded at \$37.8 million, a reduction of 17.6 percent from the FY 2014 enacted level.

Source: The overview of DOD's FY 2015 budget request can be found at:

[http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2015/fy2015\\_Budget\\_Request\\_Overview\\_Book.pdf](http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2015/fy2015_Budget_Request_Overview_Book.pdf). Detailed budget documents for each of the service branches and defense-wide

programs are available on the DOD comptroller's website at:

<http://comptroller.defense.gov/budgetmaterials/budget2015.aspx>.

### Department of Defense

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY2014
<b>RDTE, total*</b>	<b>63,100,093</b>	<b>63,533,947</b>	<b>433,854 (0.7%)</b>
<b>S&amp;T, Total</b>	<b>12,008,545</b>	<b>11,514,568</b>	<b>-493,977 (-4.1%)</b>
6.1, Total	2,166,598	2,017,502	-149,096 (6.9%)
6.2, Total	4,641,173	4,457,042	-184,131 (4.0%)
6.3, Total	5,200,774	5,040,024	-160,750 (3.1%)
Army RDTE	7,136,181	6,593,898	-542,283 (-7.6%)
Army Basic	436,493	424,176	-12,317 (-2.8%)
Army Applied	954,451	862,611	-91,840 (-9.6%)
Army ATD	1,063,636	917,791	-145,845 (-13.7%)
Navy RDTE	14,980,755	16,266,335	1,285,580 (8.6%)
Navy Basic	619,234	576,339	-42,895 (-6.9%)
Navy Applied	859,469	820,883	-38,586 (-4.5%)
Navy ATD	623,614	595,014	-28,600 (-4.6%)
Air Force RDTE	23,580,637	23,739,892	159,255 (0.7%)
Air Force Basic	524,770	454,490	-70,280 (-13.4%)



<i>Air Force Applied</i>	1,146,421	1,081,133	-65,288 (-5.7%)
<i>Air Force ATD</i>	636,442	593,817	-42,625 (-6.7%)
DW RDTE	17,156,429	16,766,084	-390,345 (-2.3%)
<i>DW Basic</i>	586,101	562,497	-23,604 (-4.0%)
<i>DW Applied</i>	1,680,832	1,692,415	11,583 (0.7%)
<i>DW ATD</i>	2,877,082	2,933,402	56,320 (2.0%)

\*Includes Overseas Contingency Operations funding.

## Department of Education

The President's FY 2015 budget request includes \$68.6 billion for the Department of Education (ED), which is an increase of \$1.3 billion (1.9 percent) over the FY 2014 enacted level.

- The FY 2015 budget request continues the Obama Administration priorities of increasing college access and completion; expanding early childhood education across the U.S.; expanding science, technology, engineering, and mathematics (STEM) education across K-12; support for greater teacher evaluation and assessment; and continuing support for the Race to the Top (RttT) and Investing in Innovation (i3) programs.
- The FY 2015 budget request supports President Obama's proposed new rating system for colleges and universities and includes mandatory funding to incentivize institutions to support access and completion efforts. This includes additional federal student aid dollars for institutions who successfully enroll and graduate a significant number of Pell eligible students; competitive grants for states to support the implementation of performance based policy; and changes to allocations for campus based aid programs, including the Supplemental Educational Opportunity Grant (SEOG) and Federal Work Study programs, to reward institutions that enroll and graduate large numbers of Pell eligible students.
- The ED budget request would enact several policy provisions typically authorized in the *Higher Education Act* (HEA). However, with Congress struggling with consensus and HEA reauthorization unlikely, the Administration is positioned to continue to influence higher education reform through grant programs (i.e. the First in the World program and the new College Opportunity and Graduate Bonus program) or through executive orders.

### New and Signature Initiatives

#### College Access and Completion

The FY 2015 budget request includes increases and changes to the federal student aid programs which advance the Administration's policy priorities of increasing access and completion. The request would fund the **Pell Grant** program at a maximum award level of \$5,830, an increase of 1.7 percent. The request would also expand Pell to adults who are enrolled in a career pathway program. The Administration also proposes that satisfactory academic progress (SAP) requirements for Pell eligibility be strengthened to encourage faster completion. The request also includes mandatory funding (\$7 billion over 10 years) for **College Opportunity and Graduation Bonus** grants, a new program that would reward colleges and universities for enrolling and graduating a significant number of low-income students. Funding would be allocated based on how many Pell students an institution graduates on time. The request would also provide \$4 million in mandatory funding for a **State Higher Education Performance Fund**. This would be a new competitive grant program for states (with a required 1:1 match) for performance based policy and funding reforms. The budget request also includes \$100 million for the **First in the World** program, which would fund new and innovative programs to improve college completion and access, particularly focused on low-income students.

The Administration continues to expand programs to support student loan borrowers. The FY 2015 budget request includes an expansion of the **Pay As You Earn (PAYE)** program, which caps monthly payments at 10 percent of discretionary income. The request would restructure Campus Based Aid

Programs, including the **Supplemental Educational Opportunity Grants (SEOG)** and **Federal Work Study** programs, to better aid institutions that enroll and graduate significant numbers of Pell-eligible students; this would include expanding the Perkins program from \$1 billion to \$8.5 billion, but shift administration of those Perkins funds from universities to the federal government.

The FY 2015 budget request also includes proposed changes to the U.S. Tax Code for education tax credits. The President's budget request would make the **American Opportunity Tax Credit (AOTC)** permanent. The AOTC provides a total credit of up to \$2,500 for current students. It would also clarify the application of AOTC for Pell Grant recipients and exclude student loan forgiveness from taxation for student borrowers participating in the **Income Based Repayment** plan.

### **College Rating System**

Funding is also included to support the Administration's development of a college rating system, proposed by President Obama in late 2013. The budget request includes \$52 million for data collection and evaluation to develop and refine the rating system as well as overall performance measurement.

### **Opportunity, Growth, and Security Initiative**

ED would receive funding through the Opportunity, Growth, and Security Initiative for **Preschool Development Grants** (\$250 million), the **ConnectEDucators initiative** (\$300 million), and the **Promise Neighborhoods** program (\$200 million). This funding would be in addition to the top line discretionary funding level.

### **Support for Minority Serving Institutions (MSIs)**

The FY 2015 budget request includes \$75 million in support of MSIs, including Hispanic Serving Institutions (HSIs) and Title III institutions, to support expanding services to Pell eligible students and increasing completion. Grants within the program could support partnerships with local education agencies (LEAs) in college recruitment; establish dual enrollment programs; create strategies to improve student outcomes; provide additional need-based aid to incentivize completion; and reduce the need for remedial education.

### **STEM Initiatives**

Similar to the FY 2014 proposal, the FY 2015 budget request includes a reorganization of STEM programs. For ED this includes the creation of new programs, such as the **STEM Innovation Networks** and the **STEM Teacher Pathways** program. See the interagency section of this report for additional information.

## **Ongoing Areas of Interest**

### **Signature Obama Administration Programs**

The request includes \$100 million for the **Promise Neighborhoods** program, an increase of 76.1 percent above the FY 2014 enacted level (and in addition to the \$200 million that would be included for the program under the Opportunity Initiative). The signature **i3** program would receive \$165 million, an increase of 16.5 percent, of which \$49.5 million would be used for the **Advanced Research Projects Agency for Education (ARPA-ED)** for innovative technological breakthroughs relating to teaching and learning. While ARPA-ED has been proposed in previous budget requests, it has not yet been funded.

### Teacher Training Programs

As in past years, the Administration requests funding for new programs to help enhance school teachers and leaders and add additional quality teachers to the profession. The budget request includes \$300 million for a new RttT program focused on equity and opportunity (**RTT-Opportunity**). This program would provide funding to states and school districts with the goal to improve performance at the lowest performing schools. It would fund activities including “developing, attracting, and retaining effective teachers and leaders in high-poverty schools<sup>1</sup>”. The request also includes funding for:

- **School Turnaround Grants** (\$505.8 million) for states and school districts funding activities that improve school leaders and teachers,
- **Effective Teachers and Leaders State Grants** program (\$2.0 billion) for states and districts that commit to improved evaluation systems for teachers and principals,
- **Teacher and Leader Innovation Fund** (\$320 million) to adjust compensation systems in high-need schools to help teachers and principals advance and to improve school teams, and
- **School Leadership Program** (\$35 million) focused on evidence-based professional development for principals,

In addition, the Administration requests mandatory funding for the **Recognizing Education Success, Professional Excellence, and Collaborative Teaching (RESPECT)** initiative. This would be \$5 billion in mandatory funding for early career development to assist in the shift to college and career ready standards. This program would fund grants to states and school districts. The Administration also requests \$200 million for a new **ConnectEDucators** initiative to help provide access to technology for teachers’ use in the classroom to help personalize learning.

### Title VI International Education and Foreign Language Studies

The FY 2015 budget proposal includes a \$4 million increase for the Title VI programs. The increase would support new awards in critical foreign languages, including those spoken in the Asia-Pacific, Sub-Saharan Africa Regions; and new “mobility” awards that would support cooperative partnerships with institutions in Southeast Asia and Sub-Saharan Africa.

### Institute of Education Sciences (IES)

The FY 2015 budget request includes an increase of \$60.2 million over the FY 2014 appropriation that would allow IES to award over \$60 million in additional grants in FY 2015. The budget request also includes funding to support a new **Research and Development Center** on online and blended learning strategies and the development of training programs within the **National Center for Education Research** for the use of “big data” in education research.

Source: ED’s FY 2015 Blue Book can be viewed at:

<http://www2.ed.gov/about/overview/budget/budget15/summary/15summary.pdf>.

<sup>1</sup> <http://www2.ed.gov/about/overview/budget/budget15/summary/15summary.pdf>, “U.S. Department of Education Fiscal Year 2015 Budget Summary,” Department of Education, 2014, page 4.

## Department of Education

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014
<b>ED, Total</b>	<b>67,301,715</b>	<b>68,587,781</b>	<b>1,286,066 (1.9%)</b>
<b>Elementary and Secondary Education</b>	<b>23,407,420</b>	<b>24,094,415</b>	<b>686,995 (2.9%)</b>
Race to the Top	250,000	300,000	50,000 (20.0%)
Investing in Innovation	141,602	165,000	23,398 (16.5%)
<i>ARPA-ED</i>	--	49,500	49,500 (N/A)
STEM Innovation	149,717	319,717	170,000 (113.5%)
Effective Teachers and Leaders State Grants	--	2,000,000	2,000,000 (N/A)
School Turnaround Grants	505,756	505,756	--
ConnectEDucators	--	200,000	200,000 (N/A)
Teacher and Leader Innovation Fund	288,771	320,000	31,229 (10.8%)
School Leadership	25,763	35,000	9,237 (35.9%)
Promise Neighborhoods	56,754	100,000	43,246 (76.2%)
Successful, Safe, and Healthy Students	214,138	214,000	-138 (0.1%)
<b>Office of Special Education and Rehabilitative Services</b>			
Special Education Grants to States	2,189,465	1,448,745	-740,720 (33.8%)
National Institute on Disability and Rehabilitation Research	103,970	108,000	4,030 (3.9%)
<b>Student Financial Assistance</b>			
Pell Grant*	5,730	5,830	100 (1.7%)
Perkins Loan Program†	1,000,000	8,500,000	7,500,000 (750.0%)
SEOG	733,130	733,130	--
Work-Study	974,728	974,728	--
<b>Higher Education</b>			
Title III Aid for Institutional Development	422,842	422,842	--
Title V Aid for HSIs	107,428	107,428	--
Title VI International Education and Foreign Language Studies	72,164	76,164	4,000 (5.5%)
FIPSE	79,400	175,000	95,600 (120.4%)
<i>First in the World</i>	75,000	100,000	25,000 (33.3%)
<i>College Success Grants for MSIs</i>	--	75,000	75,000 (N/A)
TRIO Programs	838,252	838,252	--
GEAR UP	301,639	301,639	--
GAANN	29,293	29,293	--
Data/Evaluation	575	52,000	51,425 (8,943.5%)

State Higher Education Performance Fund	--	4,000,000	4,000,000 (N/A)
College Opportunity and Graduation Bonus	--	647,000	647,000 (N/A)
<b>Institute of Education Sciences</b>	<b>576,935</b>	<b>637,180</b>	<b>60,245 (10.4%)</b>
Research, Development and Dissemination	179,860	190,273	10,413 (5.8%)
Research in Special Education	54,000	54,000	--
Statewide Longitudinal Data Systems	34,539	70,000	35,461 (102.7%)

\* Note, the Pell Grant amount listed is the maximum grant award.

† Note, Perkins funding is outside of the overall discretionary funding for the Department of Education. The FY 2015 proposal would change the allocation formula and shift funds from university based oversight to ED based oversight.

## Department of Energy

**The President's FY 2015 budget request includes \$27.9 billion for the Department of Energy (DOE), which is an increase of 2.6 percent over the FY 2014 enacted level.**

- DOE continues to be a priority agency for the Administration to meet the President's goals of reenergizing the American economy through the creation of clean energy technologies and advanced manufacturing, addressing climate change by reducing greenhouse gas emissions, and promoting national security by implementing an "all of the above" energy strategy to diversify energy resources and end U.S. dependence on foreign oil.
- The President's budget request proposes significant new funding for DOE applied energy programs, including Energy Efficiency and Renewable Energy (EERE) and the Office of Electricity Delivery and Energy Reliability (OE). The Advanced Research Projects Agency-Energy (ARPA-E) would be increased to accelerate the commercialization of new energy technologies. The President's budget request would sustain the investment in basic research through the DOE Office of Science.
- Congress has shown bipartisan support for sustaining the federal investment in the basic research programs of the DOE Office of Science and ARPA-E. Congress is less likely to support new investments in the applied technology programs of EERE under the assumption that this R&D is close to commercialization and should more appropriately be funded by industry. The emphasis on smart grid and cybersecurity activities through OE should be well received by Congress.

### New and Signature Initiatives

President Obama has proposed an FY 2015 budget for DOE that largely sustains his signature initiatives from previous years. These include sustained investments in the basic research programs of the DOE Office of Science at slightly over \$5 billion. Within the Office of Basic Energy Sciences (BES), the budget request would continue support for the Fuels from Sunlight Hub and the Batteries and Energy Storage Hub and for the Energy Frontier Research Centers (EFRCs). With increased funding proposed for ARPA-E, the Administration lends full support to the three innovation models it has created: the Hubs, EFRCs, and ARPA-E. The President's budget request proposes \$141 million for exascale computing, including \$91 million within the Office of Science and \$50 million within the National Nuclear Security Administration (NNSA).

The FY 2015 DOE budget request would also support new investments in key clean energy programs, including three offshore wind energy projects, the SunShot solar initiative, the Electric Vehicles (EV) Everywhere initiative, and at least one additional Clean Energy Manufacturing Innovation Institute. The President's budget request proposes a significant 21.4 percent increase for renewable energy and applied technology programs to promote the clean energy economy and address climate change.

The President requests a 16.1 percent increase for ARPA-E with plans for an open funding call to solicit ideas across energy sectors that could lead to “transformational breakthroughs” in new energy technologies.<sup>2</sup>

For OE, the budget request would provide a 22.2 percent increase to accelerate smart grid R&D and energy storage activities and focus on infrastructure security.

The Administration requests reductions in fossil energy R&D and nuclear energy research; however, within the fossil energy program, the President proposes a new \$25 million carbon capture and storage program for natural gas.

The Administration proposes several crosscutting activities for collaboration across DOE to advance the President’s national energy goals.<sup>3</sup> These include:

- Climate Action Plan (CAP)
- Grid Modernization
- Supercritical Carbon Dioxide in Electric Power Generation
- Subsurface Engineering
- Improving communication with state and local communities
- Exascale computing
- Cybersecurity

New initiatives are proposed for DOE through the President’s new Opportunity, Growth, and Security Initiative. Additional funding of \$1.6 billion proposed for DOE as part of the Opportunity Initiative<sup>4</sup> would include:

- \$355 million for climate resilience
- \$684 million for other energy initiatives, including \$200 million for Race to the Top awards to the states for energy efficiency and grid modernization activities
- \$600 million to accelerate activities associated with modernization of nuclear facilities and nuclear security

The President also proposes a new \$2 billion Energy Trust Fund as a mandatory program to fund R&D over the next 10 years on advanced transportation alternatives using clean fuels.<sup>5</sup> The initiatives under the new Opportunity Initiative and the proposed Energy Trust Fund are contingent upon Congress agreeing to proposed revenue (tax) changes and other major proposals that are not likely to have traction with Congress this year.

The Administration proposes a robust budget for the NNSA, custodian of the nation’s nuclear stockpile and related activities. The President requests \$79 million to begin to lay the groundwork for a new

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<sup>2</sup> <http://www.energy.gov/sites/prod/files/2014/03/f8/15Highlights.pdf>, “Department of Energy FY 2015 Congressional Budget Request, Budget Highlights,” March 2014, (pg. 36).

<sup>3</sup> *Ibid*, (pg. 4-5).

<sup>4</sup> <http://www.slideshare.net/energy/fy-2015-budget-rollout-secretary-moniz-presentation-to-press-and-stakeholders>, “Department of Energy FY 2015 Budget Request Overview,” March 4, 2014, (pg. 4).

<sup>5</sup> *Ibid*, (pg. 2).



approach to handling U.S.-based nuclear waste with the Administration's termination of the proposed Yucca Mountain storage facility.

## **Proposed Reductions and Terminations**

While the Administration proposes a slight increase for the DOE Office of Science overall, there are clear winners and losers within the program. Programs slated for reductions below the FY 2014 enacted level include Fusion Energy (-17.6 percent), High Energy Physics (-6.6 percent), and Science Laboratories Infrastructure (-19.0 percent). The Administration also proposes to reduce the fossil energy R&D budget by 16.6 percent below the FY 2014 enacted level, and research on nuclear energy by 2.8 percent. For NNSA, the President's budget would reduce nuclear non-proliferation activities by 20.4 percent. Reflecting the Administration's emphasis on reducing unnecessary subsidies, the President again proposes to eliminate \$4 billion in oil and gas tax subsidies.

## **Ongoing Areas of Interest**

The increases proposed for programs within the DOE Office of Science reflect the Administration's continued emphasis on promoting clean energy technologies, addressing climate change, and supporting computing, including activities leading to a new exascale computing initiative. Support for ARPA-E also underscores the ongoing emphasis on a pipeline of innovation from basic research to applied research and technology development and commercialization.

The Administration continues to emphasize public-private partnerships through the programs of OE and EERE, including advanced manufacturing. The goal of making new energy technologies cost competitive with conventional fossil-based energy sources results in DOE continuing to collaborate with utilities and other industry partners.

Signaling continued priority for the nation's nuclear stockpile, the President's budget request proposes \$11.7 billion for nuclear security, a 4 percent increase above the FY 2014 enacted level. Within this amount, \$8.3 billion is proposed for Weapons Activities, an increase of 6.9 percent above the FY 2014 enacted level. The budget request of \$1.6 billion for nuclear non-proliferation activities would represent a reduction of 20.4 percent below the current level. The Administration also proposes to halt construction of a Mixed Oxide (MOX) nuclear fuel facility in South Carolina, which is a joint venture with Russia. A total of \$5.6 billion is proposed for DOE's environmental management program to clean up the nuclear waste at DOE sites.

*Source: DOE's FY 2015 Budget Highlights Book and associated briefing materials can be viewed at: [www.energy.gov/budget](http://www.energy.gov/budget).*

## Department of Energy

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014
<b>DOE, total</b>	<b>27,224,810</b>	<b>27,940,428</b>	<b>715,618 (2.6%)</b>
<b>Science</b>	<b>5,066,372</b>	<b>5,111,155</b>	<b>44,783 (0.9%)</b>
Advanced Scientific Computing Research	478,093	541,000	62,907 (13.2%)
Basic Energy Sciences	1,711,929	1,806,500	94,571 (5.5%)
Biological and Environmental Research	609,696	628,000	18,304 (3.0%)
Fusion Energy Sciences Program	504,677	416,000	-88,677 (17.6%)
High-energy Physics	796,521	744,000	-52,521(6.6%)
Nuclear Physics	569,138	593,573	24,435 (4.3%)
Workforce Development for Teachers and Scientists	26,500	19,500	-7,000 (26.4%)
Science Laboratories Infrastructure	97,818	79,189	-18,629 (19.0%)
<b>EERE</b>	<b>1,913,441</b>	<b>2,321,962</b>	<b>408,521 (21.4%)</b>
Hydrogen and Fuel Cell Technology	92,928	92,983	55 (0.1%)
Bioenergy Technologies	232,290	253,200	20,910 (9.0%)
Solar Energy	257,058	282,300	25,242 (9.8%)
Wind Energy	88,126	115,000	26,874 (30.5%)
Geothermal Technology	45,775	61,500	15,725 (34.4%)
Water Power	58,565	62,500	3,935 (6.7%)
Vehicle Technologies	289,737	359,000	69,263 (23.9%)
Building Technologies	177,868	211,700	33,832 (19.0%)
Advanced Manufacturing (formerly Industrial Technologies)	180,471	305,100	124,629 (69.1%)
<b>Federal Energy Management Program</b>	<b>28,248</b>	<b>36,200</b>	<b>7,952 (28.2%)</b>
<b>Electricity Delivery and Energy Reliability</b>	<b>147,242</b>	<b>180,000</b>	<b>32,758 (22.2%)</b>
<b>Nuclear Energy</b>	<b>888,376</b>	<b>863,386</b>	<b>-24,990 (2.8%)</b>

Fossil Energy Research and Development	570,431	475,500	-94,931 (16.6%)
ARPA-E	280,000	325,000	45,000 (16.1%)
DOE Defense Activities	16,962,000	17,738,538	776,538 (4.6%)
Weapons Activities	7,781,000	8,314,902	533,902 (6.9%)
Defense Nuclear Nonproliferation	1,954,000	1,555,156	-398,844 (20.4%)
Defense Environmental Cleanup	5,000,000	5,327,538	327,538 (6.6%)

## Department of Health and Human Services

### National Institutes of Health

The President's FY 2015 budget request includes \$30.4 billion for the National Institutes of Health (NIH), which is a \$211 million (0.7 percent) increase above the FY 2014 level of \$30.2 billion.

- The Obama Administration has positioned certain NIH programs, such as the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, Big Data, Alzheimer's disease research, and the new Accelerating Medicines Partnership (AMP), at the center of its Opportunity, Growth, and Security Initiative. The Opportunity Initiative would provide an additional \$970 million for NIH, bringing it to a total level of \$31.3 billion. However, this increase would require that Congress provide supplemental funding and breach the caps set in the budget agreement, which is unlikely to occur, particularly in an election year.
- A new emphasis in the FY 2015 budget request focuses on research to tailor treatments to patients' unique characteristics, known as "precision medicine." Included in this category is the National Center for Advancing Translational Sciences (NCATS) effort to reengineer drug discovery and development in collaboration with industry, academia, the Food and Drug Administration (FDA), the Defense Advanced Research Projects Agency (DARPA), and the Cures Acceleration Network (CAN), which has yet to receive funding sufficient to award extramural grants.
- In the wake of sequestration and the government shutdown, bipartisan support for NIH has seemingly grown as lawmakers decried the effect of cuts and funding disruptions on the nation's biomedical research enterprise. Despite the community's calls for at least restoration of the 5 percent sequestration cut, given the political and budget pressures of an election year, funding beyond the Administration's request for NIH is unlikely in FY 2015.

### New and Signature Initiatives

The President's FY 2015 budget request highlights new and continuing NIH initiatives.

#### **"DARPA-like" Innovation Program**

Placing additional emphasis on research innovation, the Administration is proposing a new \$30 million Common Fund program modeled after DARPA's flexible funding mechanism that would allow the NIH program office or project leader to put together a team of extramural researchers best suited to tackle specific biomedical challenges. At the Department of Health and Human Services budget briefing on March 4, NIH Director Francis Collins cited as an example a possible project that would design technology to modulate the peripheral nervous system. The budget request proposes that the Opportunity Initiative would amplify the \$30 million investment in this new endeavor with additional support, but does not specify an amount. As noted above, given the tight funding environment, it is unlikely Congress will provide direct funding to the Opportunity Initiative.

#### **BRAIN Initiative**

The budget request would provide \$100 million for the BRAIN Initiative at NIH in FY 2015. This would be a \$60 million increase above the \$40 million NIH is awarding in FY 2014 and would complement investments at the National Science Foundation (NSF) and DARPA, resulting in a \$200 million total

investment by the three agencies. The NIH portion of the multi-agency project aims to develop new tools to map brain circuits, measure activity within these circuits, and understand how they dictate human cognition and behavior. See the interagency section of this report for additional information.

### **Advancing Medicines Partnership (AMP)**

In FY 2015, NIH would continue the AMP initiative that was launched on February 4. Slated for \$230 million in FY 2014, it is a five-year partnership with 10 industry partners aimed at pursuing new drug treatments for Alzheimer's disease, diabetes, and the autoimmune diseases of rheumatoid arthritis and lupus. The new venture is one of NIH's primary contributions to the Administration's focus on investing in innovation and partnering with industry to advance scientific discovery and technological breakthroughs.

### **Biomedical Workforce**

The budget request highlights the need for a diverse and highly creative workforce and puts its support behind programs that direct support to the investigator rather than the project, such as the **NIH Director's Early Independence Award**, the **New Innovator Award**, and the **Pathway to Independence Award**. The budget request document emphasizes NIH's efforts to recruit and mentor young people from traditional underrepresented backgrounds interested in science careers. Additionally, the budget request would provide \$767 million for the **Ruth L. Kirschstein National Research Service Awards (NRSA)** program and proposes a 2 percent stipend increase in FY 2015.

### **Alzheimer's Disease Research**

NIH continues its implementation of the research components of the National Plan to Address Alzheimer's Disease, and the budget request would provide \$566 million on this research in FY 2015. At a recent Senate hearing on this issue, Dr. Collins noted that NIH currently spends \$504 million on Alzheimer's and highlighted the agency's genomics and imaging activities. He also cited the AMP and BRAIN Initiative as contributing to the pursuit of new drugs and treatments for this costly disease.

### **Big Data**

The budget request highlights NIH's **Big Data to Knowledge (BD2K)** initiative and the Centers of Excellence that are slated to help solve Big Data problems and remove barriers that impede understanding of new diseases and development of new treatments. At the writing of this report, specific funding information is not available.

### **Ongoing Areas of Interest**

NIH estimates it would devote \$16.2 billion (53 percent of its total budget) to 34,197 competitive **Research Project Grants (RPGs)** in FY 2015. Due to sequestration, this number is considerably below the 36,610 grants the FY 2014 budget request estimated NIH would support. However, NIH estimates that it would support 9,326 new and competing RPGs, which would be an increase of 329 grants over FY 2014.

The budget request includes \$273.3 million for the **Institutional Development Award (IDeA) program**, which is the same level provided in FY 2014. This marks the first time in a few years that the Obama Administration has not proposed a funding decrease for this program that is popular with many members of Congress.

The budget retains the **salary cap for extramural grants at Executive Level II**, which is the same level as in FY 2014. The decrease from Executive Level I was enacted in the FY 2012 budget.

The budget request specifies that the **Clinical and Translational Science Awards (CTSA)** program within NCATS should receive at least \$474.7 million, which is the same amount provided in FY 2014.

The Administration is again proposing a consolidation of the science, technology, engineering, and mathematics (STEM) education programs, but it would retain **the Science Education Partnership Awards (SEPA)** within NIH, which would be funded at \$15 million, the same level as FY 2014. See the interagency section of this report for additional information on this activity.

It is estimated NIH would invest more than \$3 billion in **HIV/AIDS research** in FY 2015. Details on how this funding would be distributed among the institutes and center are not yet available.

Sources: The HHS FY 2015 budget materials can be found at: <http://www.hhs.gov/budget/fy2015/fy-2015-budget-in-brief.pdf>. At the writing of this report, additional NIH budget details are not available, but are expected to be posted at <http://officeofbudget.od.nih.gov/> within a week.

### National Institutes of Health

(In millions)

	FY 2014 Enacted	FY 2015 Request	Request v. FY 2014 Enacted
<b>NIH total</b>	<b>30,151</b>	<b>30,362</b>	<b>211 (0.7%)</b>
<b>National Cancer Institute (NCI)</b>	4,923	4,931	8 (0.2%)
<b>National Heart, Lung, and Blood Institute (NHLBI)</b>	2,983	2,988	5 (0.2%)
<b>National Institute of Dental and Craniofacial Research (NIDCR)</b>	397	397	--
<b>National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)</b>	1,881	1,893	12 (0.6%)
<b>National Institute of Neurological Disorders and Stroke (NINDS)</b>	1,586	1,608	22 (1.4%)
<b>National Institute of Allergy and Infectious Diseases (NIAID)</b>	4,393	4,423	30 (0.7%)
<b>National Institute of General Medical Sciences (NIGMS)</b>	2,362	2,369	7 (0.3%)
<b>Institutional Development Award (IDeA)</b>	273	273	--
<b>Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)</b>	1,281	1,283	2 (0.2%)
<b>National Eye Institute (NEI)</b>	674	675	1 (0.2%)
<b>National Institute of Environmental Health Sciences (NIEHS)</b>	665	665	--
<b>National Institute on Aging (NIA)</b>	1,169	1,171	2 (0.2%)

<b>National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)</b>	519	520	1 (0.2%)
<b>National Institute on Deafness and Other Communications Disorders (NIDCD)</b>	403	404	1 (0.25%)
<b>National Institute of Mental Health (NIMH)</b>	1,417	1,440	23 (1.6%)
<b>National Institute on Drug Abuse (NIDA)</b>	1,016	1,023	7 (0.7%)
<b>National Institute on Alcohol Abuse and Alcoholism (NIAAA)</b>	445	446	1 (0.2%)
<b>National Institute of Nursing Research (NINR)</b>	140	140	--
<b>National Human Genome Research Institute (NHGRI)</b>	497	498	1 (0.2%)
<b>National Institute of Biomedical Imaging and Bioengineering (NIBIB)</b>	326	329	3 (0.9%)
<b>National Institute on Minority Health and Health Disparities (NIMHD)</b>	268	268	--
<b>National Center for Complementary and Alternative Medicine (NCCAM)</b>	124	125	1 (0.8%)
<b>National Center for Advancing Translational Sciences (NCATS)</b>	632	657	25 (4.0%)
<b>Cures Acceleration Network (CAN)</b>	9.8	29.8	20 (204.1%)
<b>John E. Fogarty International Center (FIC)</b>	67	68	1 (1.5%)
<b>National Library of Medicine (NLM)</b>	375	381	6 (1.6%)
<b>Office of the Director (OD)*</b>	1,400	1,452	52 (3.7%)
<b>Common Fund</b>	533	583	50 (9.4%)
<b>Building and Facilities</b>	129	129	--

## **Other HHS Agencies and Priorities**

**The President's FY 2015 budget request would provide \$77.1 billion in discretionary funding for the Department of Health and Human Services (HHS), a \$1.3 billion decrease below FY 2014. The total budget outlays for the next 10 years are \$1 trillion.**

- New investments in the President's budget request would support the implementation of the *Patient Protection and Affordable Care Act* (ACA) by providing funding for new and existing programs focused on improving health and access to healthcare.
- The President's budget request for FY 2015 would make significant investments in the healthcare workforce, including increases for the National Health Service Corps (NHSC) and graduate medical education (GME). Unfortunately, some of these investments would come at a high cost to teaching hospitals and indirect medical education (IME).
- Several of President Obama's mental health initiatives, which are part of the *Now Is the Time Initiative*, received funding in the FY 2014 omnibus. The President's FY 2015 budget request again seeks support for several of these proposals, which are viewed favorably by many in Congress.
- It is expected that Republicans again will target provisions related to implementation of the ACA. Senate Democratic appropriations leadership has signaled a strong will to bring a Labor-Health and Human Services-Education appropriations bill to the floor for debate, providing time for those who oppose the ACA to target provisions. In addition, some of the ACA provisions, such as the increased Medicaid payments for primary care physicians (Medicaid bump), will begin to expire, requiring the Administration to work with Congress to extend expiring measures. The President's budget request proposes to extend the Medicaid bump.

## **New and Signature Initiatives**

### **New Workforce Investments**

The President's budget request would support \$530 million in FY 2015 (\$5.2 billion over 10 years) to establish a new competitive GME program at the Health Resources and Services Administration (HRSA) for primary care and "high need specialties." Specifically, the new program called Targeted Support for Graduate Medical Education, will support teaching hospitals, children's hospitals, and community-based consortia of teaching hospitals partnered with other health entities.

According to information released by the Administration, the program would support 13,000 new residents through the new competitive program, which includes \$100 million in mandatory set-aside for funding for pediatric children's hospital training. The focus will be on preventative and ambulatory care, and the budget indicates the funding would come from reinvesting a significant IME cut proposed in the budget request (discussed below), making it very difficult to garner support for the new initiative.

The budget proposal would also provide \$810 million for NHSC in FY 2015 (almost \$4 billion over 10 years), which is a nearly \$527 million increase over the FY 2014 level. Of this total funding, \$710 million would be mandatory money each year.

According to HRSA, the budget request would also provide \$10 million for a new Clinical Training and Interprofessional Practice program, and \$4 million for a new Rural Physician Training grant.



### **Access to Mental Health Services**

The President's budget request again proposes investments to support and expand mental health services. It would support funding for treatment and prevention services as part of the *Now Is the Time* initiative, as well as workforce investments to ensure there are trained professionals to serve patients and communities.

Specifically, the budget request would provide \$130 million for the Substance Abuse and Mental Health Services Administration (SAMHSA). Funding at SAMHSA would support Project AWARE (Advancing Wellness and Resilience in Education) for state support to local schools and communities to recognize mental health illness and refer young people to services. Also included is \$15 million for the Mental Health First Aid program.

The President's budget request would also include \$55 million for SAMHSA and HRSA to increase the number of licensed behavioral health professionals, and \$5 million for the expansion of the Minority Health Fellowship program, which was originally expanded in FY 2014. The budget request would also provide \$10 million for a new peer professionals program to increase access to treatments by increasing the number of trained recovery coaches, mental health/addiction specialists, prevention specialists, and pre-Master's level addiction counselors.

### **Proposed Reductions and Terminations**

#### **Centers for Medicare and Medicaid Services (CMS)**

As mentioned above, CMS would reduce funding for IME by 10 percent starting in 2015, which would cut \$14.6 billion from the program over 10 years. CMS would reinvest only \$5.2 billion over 10 years in a new GME program at HRSA. In addition, according to the CMS brief, "the Secretary would be granted the authority to set standards for teaching hospitals receiving Graduate Medical Education payments to encourage training of primary care residents and emphasize skills that promote high quality and high value health care."<sup>6</sup>

The President's budget proposal would again reduce Medicare coverage for bad debts to 25 percent over three years. The President's budget request would also support legislative efforts to rebase Medicaid Disproportionate Share Hospital Payments through 2024.

#### **Health Resources and Services Administration**

The President's request would again eliminate funding for the Area Health Education Centers (AHECs), leaving it to Congress to restore funding as it has done in previous years.

HRSA plans to incorporate the Children's Graduate Medical Education (CHGME) program into the new Targeted Support for Graduate Medical Education program.

#### **Centers for Disease Control and Prevention (CDC)**

The President's budget request would provide \$411 million for Prevention Research Centers, a \$14

<sup>6</sup> <http://www.hhs.gov/budget/fy2015/fy-2015-budget-in-brief.pdf>, "Fiscal Year 2015 Budget in Brief Strengthening Health and Opportunity for All Americans", Department of Health and Human Services, 2014 (pg. 59)

million reduction below FY 2014. The budget also proposes to eliminate funding for the Racial and Ethnic Approaches to Community (REACH) program and the Education Research Centers at CDC.

### Ongoing Areas of Interest

The **Nursing Workforce Development** programs would receive \$144 million in the President's budget request, the same level as FY 2014. The **Nursing Loan Repayment and Scholarships** would receive \$80 million bringing the total to \$224 million for the Title VIII nursing programs.

**Injury prevention** at CDC would receive \$194 million which is an increase of \$43 million above the FY 2014 level. Funding would support prevention activities that include, but are not limited to, **intimate partner violence, sexual violence, elder falls, and motor vehicle crashes**. The budget also includes \$10 million to continue conducting research on the causes and prevention of gun violence.

The President's budget proposal would provide \$75 million for the Office of the National Coordinator for Health Information Technology (ONC), an increase of \$14 million above FY 2014. New investments would target safety of health IT through support for a new **Health IT Safety Center** and **public-private partnerships to enhance patient safety and health IT usability**.

Sources: Budget materials for the Department of Health and Human Services can be viewed at: <http://www.hhs.gov/budget/fy2015/fy-2015-budget-in-brief.pdf> and <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/budget.pdf>.

### Department of Health and Human Services

(In millions)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014
<b>HHS, total</b>	<b>962,554</b>	<b>1,020,284</b>	<b>57,730 (6.0%)</b>
<b>Health Resources and Services Administration (HRSA)</b>	8,915	10,753	1,838 (20.6%)
<i>Title VII</i>	245	216	-29 (11.8%)
<i>Title VIII</i>	224	224	--
<b>Substance Abuse and Mental Health Services Administration (SAMHSA)</b>	3,631	3,568	-63 (1.7%)
<i>Center for Mental Health     Services</i>	1,080	1,057	-23 (2.1%)
<i>Center for Substance     Abuse Treatment</i>	2,181	2,117	-64 (2.9%)
<i>Center for Substance     Abuse Prevention</i>	176	186	10 (5.7%)

<b>Agency for Healthcare Research and Quality (AHRQ)</b>	464	440	-24 (5.2%)
<b>Food and Drug Administration (FDA)</b>	4,387	4,745	358 (8.2%)
<b>Centers for Disease Control and Prevention (CDC)</b>	10,806	11,117	311 (2.9%)
<i>Chronic Disease prevention and Health Promotion</i>	1,188	1,078	-110 (-9.3%)
<i>National Institute for Occupational Safety and Health (NIOSH)</i>	333	281	-52 (15.6%)
<i>Environmental Health</i>	180	169	-11 (6.1%)
<b>Indian Health Service (IHS)</b>	5,761	5,989	228 (4.0%)
<b>Administration on Community Living (ACL)</b>	2,147	2,123	-24 (1.1%)
<b>Administration for Children and Families (ACF)</b>	17,683	17,046	-637 (3.6%)
<b>Office of the National Coordinator for Health IT</b>	60	75	15 (25.0%)

## Department of Homeland Security

The President's FY 2015 budget request includes \$38.176 billion in discretionary funding for the Department of Homeland Security (DHS), which is a 4.0 percent decrease below the FY 2014 enacted level.

- DHS would see a slight reduction in funding for FY 2015. New leadership should help give energy to an agency often regarded as bloated and inefficient as newly-appointed Secretary Jeh Johnson prioritizes issues surrounding agency morale, cybersecurity, disasters, and terrorism prevention.
- The Science and Technology Directorate (S&T) receives continued support as the Administration sees science and technology as a small but important part of DHS's mission. However, the University Programs Office, which oversees the Centers of Excellence program, and the Research, Development, and Innovation (RD&I) account would receive noticeable reductions.
- The Administration's funding proposals for DHS R&D accounts align with recent congressionally-approved levels, and as a result these proposals will not likely face much resistance with lawmakers.

### New and Signature Initiatives

Under the President's Opportunity, Growth, and Security Initiative, DHS would invest \$410 million into two **climate resilience initiatives**. Additional funding proposed as part of the Opportunity Initiative would include:

- The Federal Emergency Management Administration (FEMA) would receive \$400 million for planning and pilot projects for cities and communities as part of the Administration's National Mitigation Framework.
- The National Protection and Programs Directorate (NPPD) would receive \$10 million to assess critical facilities and sectors vulnerable to an attack.

### Proposed Reductions and Terminations

The **University Programs Office**, which oversees the Centers of Excellence program and DHS's graduate and student research programs, would receive \$31 million, which is 22 percent below the FY 2014 enacted level. DHS states that this reduction would affect the number of future competitions for centers.

The **Research, Development, and Innovation (RD&I)** account, which funds the Directorate's core R&D programs, would receive a 6.1 percent reduction compared to the final FY 2014 level. Thrust areas for RD&I remain: APEX (crosscutting operational research); Border Security; Chemical, Biological, and Explosive (CBE) Defense; Counter Terrorist; Cyber Security/Information Analytics; and First Responder/Disaster Resilience.

## Ongoing Areas of Interest

The **Science and Technology Directorate (S&T)** would receive a 12.2 percent reduction compared to the FY 2014 level. A large portion of this decrease would come from the Laboratory Facilities account, though \$300 million is included for the construction of the National Bio-Agro-Defense Facility (NBAF) in Kansas. S&T continues efforts to prioritize R&D spending in response to past congressional frustrations over duplicative and inefficient activities.

Source: DHS's FY 2015 budget proposal can be viewed at:

<https://www.dhs.gov/sites/default/files/publications/FY-2015-BIB.pdf>.

### Department of Homeland Security

(In thousands)\*

	FY 2014 Enacted†	FY 2015 Request†	FY 2015 Request vs. FY 2014 Enacted†
<b>DHS, total</b>	<b>39,769,144</b>	<b>38,175,700</b>	<b>-1,593,444 (4.0%)</b>
<b>Science and Technology Directorate</b>	1,220,212	1,071,818	<b>-148,394 (12.2%)</b>
University Programs	39,724	31,000	<b>-8,724 (22.0%)</b>

\*Funding amounts reflect net discretionary funding levels.

† Does not include rescissions or Disaster Relief Fund Major Disasters Cap Adjustment.

## Department of State/USAID

The President's FY 2015 budget request includes \$46.2 billion for programs through the Department of State and the United States Agency for International Development (USAID), which is a decrease of 1.3 percent below the FY 2014 enacted level. This amount includes Overseas Contingency Operations (OCO) funding.

- Activities through the Department of State and USAID remain central to the Obama Administration's strategy of increasing reliance on diplomacy and development as tools of foreign policy.
- The President's FY 2015 budget request would continue support for priorities such as promoting global health, increasing global food security, and combating global climate change.
- The President's FY 2015 budget request for international affairs is likely to face skepticism from some Members of Congress who object to the above priorities and disagree with the total proposed funding level for international activities in a constrained budgetary environment.

### New and Signature Initiatives

Similar to the Department of Defense (DOD), the President's FY 2015 budget request for the Department of State and USAID illustrates the Administration's desire to shift focus to the Asia-Pacific after a decade of conflict in the Middle East. Numerous new diplomacy and development programs are proposed to focus on the Asia-Pacific. The President's budget request also describes the Administration's intent to shift resources from existing programs to target the region. Of interest to the research and education community, the President's request would provide funding for a new **Young South-East Asian Leaders Initiative (YSEALI)** exchange program derived from the current Young African Leaders Initiative. The YSEALI program would receive \$10 million in initial funding under the President's request. Further reflecting the focus on the Asia-Pacific, the President's request states that FY 2015 funding for the **Fulbright Educational Exchange Program** would be geared towards South-East Asia (along with Sub-Saharan Africa) should the request be approved.

Also within the Educational and Cultural Exchange Programs account, for which an increase of 1.6 percent is proposed, the President would create an **Exchanges Rapid Response (ERR)** program to promote exchange activities in countries experiencing crises or dramatic political transitions.

### Proposed Reductions and Terminations

Most savings from proposed reductions and terminations in the President's FY 2015 budget request would come from reduced contributions to multilateral assistance, international security assistance, international financing and credit assistance, and embassy construction accounts that do not directly impact the research and education community. The President also proposes a reduction for bilateral assistance programs, although not to the Development Assistance line that funds many programs relevant to universities and non-profit research institutions (see below).

## Ongoing Areas of Interest

With the budget for the Department of State and USAID often a topic of partisan disagreement on Capitol Hill, the President's FY 2015 budget request concentrates on implementing existing priorities. Although targeted for a 4.6 percent reduction, the Administration continues to identify the **Global Health Initiative (GHI)** as among its priorities for FY 2015. In FY 2015 the President's budget request would continue to emphasize improving the health of women and girls, a signature issue for former Secretary of State Hillary Clinton that has been carried on by President Obama and USAID Administrator Rajiv Shah. The three overarching priorities for global health programs in FY 2015 would be Ending Preventable Child and Maternal Deaths; Creating an AIDS-free Generation; and Protecting Communities from Infectious Diseases.

Many of the activities of greatest interest to universities and non-profit research institutions are funded through USAID's **Development Assistance** account, which would receive a 4.5 percent increase in the President's FY 2015 budget request. Specifically, the President's request would provide \$924 million for the **Feed the Future (FTF)** global food security initiative, which focuses on improving food production and distribution throughout the value chain. FTF also has significant research components. The President's budget request would create a new focus on programs to support nutrition-sensitive agriculture in FY 2015.

Also within the Development Assistance account, the President proposes \$146.3 million for science, technology, and innovation programs through the **U.S. Global Development Lab (USGDL)**. USGDL hosts many of the programs through which USAID has sought to leverage science and innovation in support of a modernized global development enterprise, including the Higher Education Solutions Network, Development Innovation Ventures, and Grand Challenges for Development. Consistent with the President's desire to engage outside resources in support of global development, USGDL supports a variety of public-private partnerships to involve the academic and industry sectors in global development activities.

Finally, demonstrating a personal priority for both President Obama and Secretary of State John Kerry, the President's FY 2015 budget request includes robust funding for programs to combat **global climate change**. The \$316.9 million included in the President's request for global climate change would support adaptation programs as well as the development of sustainable energy technologies. Funding would also be dedicated to sustainable landscapes programs to help reduce deforestation.

*Source: The President's FY 2015 budget request for the Department of State and USAID can be found at: <http://www.state.gov/documents/organization/222898.pdf>.*

## International Affairs

*(In thousands)*

	FY 2014 Enacted	FY 2015 Request	Request v. FY 2014
<b>Department of State and USAID, Total*</b>	<b>46,810,704</b>	<b>46,220,643</b>	<b>-590,061 (1.3%)</b>
Department of State Operations and Related Accounts	15,693,026	16,640,016	946,990 (6.0%)
Educational and Cultural Exchange Programs	568,628	577,900	9,272 (1.6%)
USAID Operations Development Assistance	1,313,207	1,568,916	255,709 (19.5%)
Global Health Programs, Total	2,507,001	2,619,984	112,983 (4.5%)
	8,439,450	8,050,000	-389,450 (4.6%)

\*Includes OCO funding levels for consistency in reporting.



## Environmental Protection Agency

The President's FY 2015 budget request includes \$7.890 billion for the Environmental Protection Agency (EPA), which is a decrease of \$310 million or 3.8 percent below the FY 2014 enacted level.

- The Obama Administration continues to prioritize EPA's mission to protect public health and the environment by funding the highest agency priorities that align with the EPA FY 2014–FY 2018 Strategic Plan. The EPA budget request is a result of the constrained budget environment in which many agencies seek to reorganize their workforce and reduce costs through more efficient approaches. The FY 2015 request includes a number of cuts, primarily through the Drinking Water and Clean Water State Revolving Funds and the Hazardous Substance Superfund Account, in order to invest in areas such as small and underserved communities.
- The Science and Technology account, including the Office of Research and Development (ORD), would receive slight increases in funding. Despite the agency's budget constraint, the Administration continues to sustain its investment in science and research, particularly climate change. This includes support for the President's Climate Action Plan to reduce carbon pollution from vehicles and power plants and to prepare the public for the global impacts of a changing climate. Additionally, the EPA Science and Technology account supports the government-wide approach to streamline science, technology, engineering, and mathematics (STEM) activities and fellowships by moving ORD's Science to Achieve Results (STAR) fellowship program to the National Science Foundation (NSF).
- It is likely that some in Congress will continue their scrutiny of EPA and the size of the EPA workforce along with the efforts to cut carbon pollution. This will include the budget request's support for the President's Climate Action Plan that includes regulatory science, especially greenhouse gas (GHG) emissions and cross-state emissions rules and clean water standards. Conversely, others in Congress will be pleased with the continuing investment in research and will highlight the human-health benefits of environmental regulations and the need for scientific research to support those regulations.

### New and Signature Initiatives

EPA's budget requests provides \$1.03 billion (\$41 million increase over the FY 2014 enacted level) for the Climate Change and Air Quality account to reduce domestic GHG emissions; support the President's Climate Action Plan; and support states to implement the *Clean Air Act*. This investment primarily includes the **ENERGY STAR** program, the **Global Methane Initiative**, the **GHG Reporting Rule**, and technical assistance for water utilities through the **Climate Resilience Evaluation Awareness Tool (CREAT)**.

EPA would also seek to achieve programmatic effectiveness through the implementation of the **E-Enterprise Initiative**. The initiative would allow EPA and states to enhance business practices through the transitioning from paper-based to electronic reporting and more efficient methods for EPA contract needs. Additionally EPA seeks to realign its workforce to ensure the EPA workforce is relevant and modernized with the necessary skills to address current environmental challenges.

As part of the Opportunity, Growth, and Security Initiative and \$1 billion for a Climate Resilience Fund, funding at EPA would include:

- \$10 million for protecting and enhancing coastal wetlands;
- \$ 4 million to support urban forest enhancement and protection; and
- Preparation for the impacts of climate change.

## Proposed Reductions and Terminations

The President's EPA budget request includes a consolidation and move of the **STAR** and **Greater Research Opportunities (GRO)** fellowships to NSF. This is a proposal, similar to the proposal in the FY 2014 budget request, by the Administration to reorganize all STEM programs in an effort to increase the results and outcomes of federal investments in STEM fellowships, K-12 instructors, undergraduate education, training, and education.

## Ongoing Areas of Interest

EPA would continue to provide funding to improve water quality; support interagency partnerships in local watersheds; and prevention and preparation for accidental chemical releases at industrial facilities.

As in previous years, EPA's budget request revolves around major themes. FY 2015's themes are:

1. Taking Action on Climate Change and Improving Air Quality
2. Protecting America's Waters
3. Cleaning Up Communities and Advancing Sustainable Development
4. Ensuring the Safety of Chemicals and Preventing Pollution
5. Protecting Human Health and the Environment by Enforcing Laws and Assuring Compliance

Source: EPA's FY 2015 budget materials can be viewed at:

[http://www2.epa.gov/sites/production/files/2014-03/documents/fy\\_2015\\_bib.pdf](http://www2.epa.gov/sites/production/files/2014-03/documents/fy_2015_bib.pdf).

## Environmental Protection Agency

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014 Enacted
<b>EPA, total</b>	<b>8,200,000</b>	<b>7,890,020</b>	<b>-309,980 (3.8%)</b>
<b>Science and Technology</b>	<b>759,156</b>	<b>763,772</b>	<b>4,616 (0.6%)</b>
Office of Research and Development (ORD)	N/A	537,300	N/A
Environmental Program and Management (EPM)	2,624,149	2,737,156	113,007 (4.3%)

## Institute of Museum and Library Services

The President's FY 2015 budget request includes \$226.448 million for the Institute of Museum and Library Services (IMLS). This would be a decrease of \$412,000 or 0.2 percent below the FY 2014 level.

- For FY 2015, IMLS would focus funding on four strategic goals: learning; community; content; and special focus areas, which include the Obama Administration's priorities of science, technology, engineering, and mathematics (STEM) learning, early childhood learning, and expanding access to federal information.
- As part of the FY 2015 budget request, IMLS will coordinate with other federal agencies to create a "Civic Literacy Network" which will focus on streamlining and coordinating government services and federal information through local libraries.

### New and Signature Initiatives

#### Civic Literacy Network

While the IMLS press release on the FY 2015 budget request provides few details, the Civic Literacy Network project may be part of the Museum, Libraries, and 21<sup>st</sup> Century Skills initiative at IMLS. This national initiative has previously focused on holding workshops and offering best practices in how libraries and museums "help create a network of community organizations that together address the 21st century learning needs of their citizens."<sup>7</sup>

#### STEM

In the FY 2015 budget request IMLS would continue to include STEM as a funding priority across grant competitions for projects that develop new STEM programs for at-risk youth.

#### Early Learning

The FY 2015 budget proposal would incorporate IMLS in the overarching early learning priority of the Obama Administration. The FY 2015 proposal would encourage the incorporation of museums and libraries into national, state, and local early learning strategies.

### Ongoing Areas of Interest

It is unclear from the details released if the FY 2015 budget request would continue the **Sparks! Ignition** grant program. The program, which began in 2013, provides small grants for high-risk, innovative projects that expand and test new library, archive, and museum practices. The program has been popular at IMLS because it allows program officers the opportunity to fund small grants directly through the submission of short white papers.

Sources: A press release outlining IMLS's FY 2015 budget request can be viewed at:

[http://www.ims.gov/president%E2%80%99s\\_fy\\_2015\\_budget\\_request\\_includes\\_226448000\\_for\\_the\\_institute\\_of\\_museum\\_and\\_library\\_services.aspx](http://www.ims.gov/president%E2%80%99s_fy_2015_budget_request_includes_226448000_for_the_institute_of_museum_and_library_services.aspx).

<sup>7</sup> [http://www.ims.gov/about/21st\\_century\\_skills\\_home.aspx](http://www.ims.gov/about/21st_century_skills_home.aspx), "Museums, Libraries, and 21<sup>st</sup> Century Skills," Institute of Museum and Library Services, 2014

## Institute of Museum and Library Services

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014
<b>IMLS, total</b>	<b>226,860</b>	<b>226,448</b>	<b>-412 (0.2%)</b>
Library Services	180,909	178,602	-2,307 (1.3%)
<i>National Leadership Grants: Libraries</i>	12,200	12,232	32 (0.3%)
<i>Laura Bush 21<sup>st</sup> Century</i>	10,000	10,000	--
Museum Services	28,724	29,649	925 (4.6%)
<i>Museums for America</i>	20,200	20,643	443 (0.1%)
<i>National Leadership Grants: Museums</i>	7,600	8,080	480 (6.3%)

## National Aeronautics and Space Administration

The President's FY 2015 budget request includes \$17.461 billion for the National Aeronautics and Space Administration (NASA), which is a slight decrease of \$185.9 million or 1.1 percent below the FY 2014 enacted level.

- Full details of the FY 2015 NASA budget request are still pending and are expected to be available soon.
- Consistent with the FY 2014 budget request, NASA overall would see slightly reduced funding. However, **Space Technology** and **Commercial Crew Development** remain high priorities for the Obama Administration and would see substantial increases.
- In contrast to previous years, no account within the **Science Mission Directorate** would see substantial increases and all divisions apart from **Heliophysics** would see declines of two percent or more. **Astrophysics** would see the largest decrease and **Planetary Science** again is targeted for substantial cuts.
- NASA top-line priorities are largely supported by Congress; however, significant adjustments are expected to more closely reflect the final FY 2014 spending levels and subsequent discussions regarding NASA's re-authorization legislation later this year.

### New and Signature Initiatives

The budget request proposes no major new initiatives but continues to emphasize priority areas from the FY 2014 budget request, such as the **asteroid retrieval mission**. For FY 2015, the request would provide \$133 million for concept review, early development, and relevant technology investments such as advancing solar electric propulsion and capture systems for an asteroid mission retrieval mission designed to robotically rendezvous with an asteroid and bring it back to a nearby LaGrange point for future human exploration.

Similar to last year's priorities for the budget request, the FY 2015 budget request proposes a 22.5 percent increase for **Space Technology**, which began under the Obama Administration, to develop advanced technologies in areas such as communications, sensors, robotics, materials, and propulsion.

In addition, the Obama Administration would, once again, dramatically increase funding for the development of the **Commercial Crew** program (up 21.9 percent) to develop commercial vehicles capable of transporting humans to low-Earth orbit.

The Obama Administration's Opportunity Initiative would additionally add \$885.5 million across NASA accounts.

### Proposed Reductions and Terminations

Consistent with its FY 2014 request, the Obama Administration would again significantly cut funding for **Planetary Science** (down 4.8 percent), although the cuts would be much less severe than proposed in prior year budget requests. In contrast to the FY 2013 and FY 2014 requests, the FY 2015 request would fund pre-formulation for a mission to Europa as recommended by the Planetary Science Decadal Survey.

The request also includes funding to continue formulation and development of the Mars 2020 mission; however, further details on the level of funding for **Mars Exploration** are not available at this time.

**Astrophysics** would receive a significant decrease (9.1 percent) consistent with the continued funding required for the James Webb Space Telescope. The cut would largely be funded by discontinuing the majority of funding for SOFIA and grounding the plane unless international partners agree to cover the remaining operational costs. NASA does plan to continue support for the **Explorer** program and the budget request would also fund pre-formulation and technology development for WFIRST, the top priority mission of the 2010 Astronomy and Astrophysics Decadal Survey.

As in past budget requests, **Education** would be significantly decreased, with the largest proposed decrease (23.8 percent) of any account from FY 2014 enacted levels. This decrease would be in addition to the significant decrease for NASA education enacted in FY 2014, and would leave Education down 35.8 percent from its FY 2012 level. The FY 2015 request again proposes a consolidation of NASA's education activities, whereby individual education activities would compete for funding. Unlike the FY 2014 proposal, no funding would be shifted to the Department of Education and the Science Mission Directorate education activities would be separately consolidated within the Science Mission Directorate. Funding would be continued for **Space Grant** and **EPSCoR** but specific funding details are not yet available.

### Ongoing Areas of Interest

The budget request would largely continue the Obama Administration's signature Science Mission Directorate missions, although with slight decreases from FY 2014 based on previously determined mission schedules. The **James Webb Space Telescope** would decrease 1.9 percent while continuing to support a launch by 2018, and **Earth Science** missions and research would decrease 3.1 percent from the FY 2014 enacted level due to the launch of flagship Decadal Survey missions, including SMAP and OCO-2, while continuing development of ICESat-2.

**Heliophysics** (up 2.3 percent) would receive the only increase of any Science Mission Directorate division. The request would largely support ongoing activities, including development of Solar Probe Plus for launch in 2018 and formulation for newly selected **Explorer** missions ICON and GOLD.

**Aeronautics** (down 2.6 percent) would focus on new strategic thrust areas developed in the 2013 Aeronautics Research Strategic Vision. The new strategic thrusts are: safe, efficient growth in global operations; innovation in commercial supersonic aircraft; ultra-efficient commercial transports; transition to low-carbon propulsion; real-time, system-wide safety assurance; and assured autonomy for aviation transformation.<sup>8</sup>

In addition to the large increases proposed for Commercial Crew development, **Exploration** would receive funding to keep development of the Orion Crew Vehicle and the Space Launch System on track. Support would also continue for the Human Research program.

<sup>8</sup> [http://www.aeronautics.nasa.gov/pdf/armd\\_strategic\\_vision\\_2013.pdf](http://www.aeronautics.nasa.gov/pdf/armd_strategic_vision_2013.pdf), "Aeronautics Research Strategic Vision", NASA, 2013 (pg. 3).

Source: NASA's FY 2015 budget materials can be viewed at: <http://www.nasa.gov/news/budget/>.

### National Aeronautics and Space Administration

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014
<b>NASA, total</b>	<b>17,646,500</b>	<b>17,460,600</b>	<b>-185,900 (1.1%)</b>
<b>Science</b>	5,151,200	4,972,000	-179,200 (3.5%)
Earth Science	1,826,000	1,770,300	-55,700 (3.1%)
Planetary Science	1,345,000	1,280,300	-64,700 (4.8%)
Astrophysics	668,000	607,300	-60,700 (9.1%)
James Webb Space Telescope	658,200	645,400	-12,800 (1.9%)
Heliophysics	654,000	668,900	14,900 (2.3%)
<b>Aeronautics</b>	566,000	551,100	-14,900 (2.6%)
<b>Space Technology</b>	576,000	705,500	129,500 (22.5%)
<b>Exploration</b>	4,113,200	3,976,000	-137,200 (3.3%)
Exploration Systems Development	3,115,200	2,784,400	-330,800 (10.6%)
Commercial Spaceflight	696,000	848,300	152,300 (21.9%)
Exploration Research and Development	302,000	343,200	41,400 (13.7%)
<b>Space Operations</b>	3,778,000	3,905,400	127,400 (3.4%)
<b>Education</b>	116,600	88,900	-27,700 (23.8%)
<b>Cross Agency Support</b>	2,793,000	2,778,600	-14,400 (0.5%)
<b>Construction and Environmental Compliance and Restoration</b>	515,000	446,100	-68,900 (13.4%)
<b>Office of Inspector General</b>	37,500	37,000	-500 (1.3%)

## National Endowment for the Arts & National Endowment for the Humanities

The President's FY 2015 budget request includes \$146 million each for the National Endowment for the Humanities (NEH) and the National Endowment for the Arts (NEA). This requested funding is equal to the FY 2014 enacted level.

- The request would not provide funding for NEH's **We the People program**, a popular program which was started in 2003. The Administration has requested zeroing out this program in the past, but Congress has previously restored it. It did not receive funding in the FY 2014 omnibus, thereby likely signaling the end of the program.
- Despite overall flat funding compared with FY 2014 enacted levels, all NEH program divisions and offices would receive small funding increases over their FY 2014 amounts. The Administration has proposed reductions in administration funds which would allow for these modest increases.
- Full details of the NEH and NEA budget request will be released on Friday, March 7.

### New and Signature Initiatives

#### National Endowment for the Humanities

The FY 2015 budget request would provide funding for a new initiative, titled "**Standing Together: The Humanities and the Experience of War**," which would "support the nation's active duty military, veterans, military families, and civilians by encouraging and expanding humanities projects that focus on the history, experiences, and meaning of war and military service."<sup>9</sup> Funding amounts for this initiative have not yet been released.

The request would provide continued support for ongoing NEH programs and initiatives. **Bridging Cultures: Understanding the U.S. and the World**, a special initiative to teach Americans about their own history as well as the histories of other nations; as well as NEH's partnership with that National Science Foundation for projects that document endangered languages would continue to receive support in the FY 2015 request.

The budget request would also provide funding for NEH to continue to support projects and programs in the humanities, including those that bring the humanities to Americans in rural areas, urban neighborhoods, and suburban communities; research and scholarship; preservation and access of humanities resources; and humanities teaching and learning.

#### National Endowment for the Arts

As of Tuesday, March 4, the National Endowment for the Arts (NEA) has not released its FY 2015 budget request documents. Lewis-Burke will update this document with NEA's budget request details when information is released.

<sup>9</sup> <http://www.neh.gov/news/press-release/2014-03-04>, "Obama Administration requests \$146,021,000 for NEH in 2015," National Endowment for the Humanities, 2014.



Sources: NEH's FY 2015 budget request details can be viewed at: <http://www.neh.gov/news/press-release/2014-03-04>. NEA's current budget request details can be viewed at: <http://arts.gov/news/2014/president-obama-releases-fy-2015-budget-number-national-endowment-arts>.

### National Endowment for the Humanities & National Endowment for the Arts

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014
<b>NEH, total</b>	<b>146,021</b>	<b>146,021</b>	--
Bridging Cultures	3,494	3,500	6 (0.2%)
We the People	0	0	0 (0.0%)
Digital Humanities	4,388	4,400	12 (0.3%)
Education Programs	13,237	13,265	28 (0.2%)
Federal/State Partnerships	42,435	42,528	93 (0.2%)
Preservation and Access	15,426	15,460	34 (0.2%)
Public Programs	13,654	13,684	30 (0.2%)
Research	14,752	14,784	32 (0.2%)
Challenge Grants	8,357	8,500	143 (1.7%)
<b>NEA, total</b>	<b>146,021</b>	<b>146,021</b>	--
Grants	N/A	N/A	N/A
<i>Our Town</i>	N/A	N/A	N/A
State and Regional Partnerships	N/A	N/A	N/A

## National Science Foundation

**The President's FY 2015 budget request includes \$7.255 billion for the National Science Foundation (NSF), which is an increase of \$83.1 million or 1.2 percent over the FY 2014 enacted level.**

- The Administration continues to see basic research and education supported by NSF as key to long-term economic growth in the U.S.
- Fundamental research along with strategic investments in areas such as neuroscience, advanced manufacturing and clean energy are highlighted as key components in the budget request that contribute towards building an innovation economy. The request also emphasizes the importance of NSF in preparing a globally competitive workforce through education in science, technology, engineering, and mathematics (STEM).
- While Congress remains supportive of the basic research supported by NSF and its importance to the U.S. economy, concerns remain over the balance between fundamental research and strategic investments that focus on more applied research.

### New and Signature Initiatives

The NSF FY 2015 budget request builds on existing initiatives that align with the Administration's priority areas. The request highlights building an innovation economy and educating globally competitive American workers through both fundamental research and focused initiatives.

#### STEM Education

NSF remains committed to advancing STEM education at all levels; the FY 2015 budget request includes:

- Funding of \$333 million to support graduate training through the Graduate Research Fellowship program (GRF).
- Funding of \$58 million to support the NSF Research Traineeship (NRT). NRTs are a new program for FY 2014 that replaced the Integrative Graduate Education and Research Traineeship (IGERT) program to focus on topics related to national priorities.
- A new initiative that would be supported at \$7 million to encourage innovation in graduate education that would support universities that introduce new models of student training to enhance innovation.
- Funding of \$118 million to support a consolidated undergraduate education program that uses an evidence base to explore and implement new technologies and approaches to enhance education. The Research Experiences for Undergraduates (REU) program would be supported at \$75 million.

#### Improving Impact and Efficiency

The budget request outlines a number of actions to increase the impact of NSF supported activities and the efficiency of NSF operations, specific actions include:

- Increase public access to results of research, for example through a repository of articles published on NSF-supported research.
- Improve evaluation activities across NSF.
- Increase the automation of grant processing to reduce associate personnel costs.
- Increase the use of virtual panels to assess research proposals.

### **Opportunity, Growth, and Security Initiative**

The Opportunity Initiative would include \$552 million for NSF to support fundamental research and innovation across all disciplines. The initiative would support an additional 1,000 new research grants and additional research and education activities in high priority areas, such as STEM education, neuroscience, cybersecurity, advanced manufacturing, and NRTs.

### **Proposed Reductions and Terminations**

The FY 2015 budget request includes a number of proposed program reductions including the following programs:

- Enhancing the Mathematical Sciences Workforce in the 21st Century – the budget would be reduced from \$10 million in FY 2014 to \$6 million in FY 2015.
- Network for Earthquake Engineering Simulation – the budget would be reduced from \$20 million in FY 2014 to \$12 million in FY 2015.
- Science of Learning Centers – the budget would be reduced from \$19 million in FY 2014 to \$7 million in FY 2015.

The FY 2015 budget request also includes proposed terminations of the University Radio Observatories and Virtual Astronomy Observatory programs.

### **Ongoing Areas of Interest**

#### **Interdisciplinary Research**

The budget request highlights the role of NSF in linking fundamental research to the needs of society to support industries and jobs of the future. The budget request includes \$29 million to support innovative proposals at the interface of biology, mathematics, physical sciences, and engineering (BioMaPS). The budget request also includes \$125 million to support the Cyberinfrastructure Framework for 21<sup>st</sup> Century Science, Engineering, and Education (CIF21) initiative that would include new research networks, data repositories, and new systems to visualize data across disciplines.

#### **Advanced Manufacturing**

The budget request includes \$151 million to support fundamental research in advanced manufacturing as part of a larger \$213 million NSF initiative in Cyber-Enabled Materials, Manufacturing, and Smart Systems (CEMMSS). Included in the larger initiative is \$29 million for the NSF contribution to the National Robotics Initiative (NRI). The budget request also includes \$22 million for the NSF contribution to the Materials Genome Initiative (MGI).

#### **Clean Energy / Sustainability**

Similar to previous budget requests under the Obama Administration, the FY 2015 budget request includes \$362 million for fundamental research on clean energy technologies including solar energy and energy efficiency. The budget would also support the cross-agency Science, Engineering, and Education for Sustainability (SEES) initiative at \$139 million for FY 2015.

#### **Cognitive Science and Neuroscience**

The budget request would support cross-NSF activity in cognitive science and neuroscience at \$29 million as part of NSF's contribution to the Administration's Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative

**Cyber Research**

The budget request includes \$100 million for the Secure and Trustworthy Cyberspace (SaTC) program.

**Innovation**

The Innovation Corps (I-Corps) program continues be supported by the Administration with \$25 million proposed in the FY 2015 budget request.

*Sources: The White House FY 2015 budget request document can be viewed at:*

*<http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/budget.pdf>. At the time of writing (March 4, 2014), NSF had not yet released full details of its budget request. A summary of the NSF FY 2015 Budget Request can be viewed at: <http://www.nsf.gov/about/budget/fy2015/index.jsp>.*

## National Science Foundation

(In thousands)

	FY 2014 Enacted	FY 2015 Request	FY 2015 Request vs. FY 2014
<b>NSF, total</b>	7,171,918	7,255,000	83,082 (1.2%)
<b>Research and Related Activities</b>	5,808,918	5,807,460	-1,458 (0.03%)
Biological Sciences*	721,000	709,000	-12,000 (1.7%)
Computer and Information Science and Engineering*	894,000	893,000	-1,000 (0.1%)
Engineering*	859,000	858,000	-1,000 (0.1%)
Geosciences*	1,303,000	1,304,000	1,000 (0.1%)
Mathematical and Physical Sciences *	1,300,000	1,296,000	-4,000 (0.3%)
Social, Behavioral, and Economic Sciences*	257,000	272,000	15,000 (5.8%)
International and Integrative Activities*	482,000	474,000	-8,000 (1.7%)
US Arctic Research Commission*	1	1	--
<b>Education and Human Resources</b>	846,500	889,750	43,250 (5.1%)
<b>Major Research Equipment and Facilities Construction</b>	200,000	200,760	760 (0.4%)
<b>Agency Operation and Award Management</b>	298,000	338,230	40,230 (13.5%)
<b>National Science Board</b>	4,300	4,370	70 (1.6%)
<b>Office of Inspector General</b>	14,200	14,430	230 (1.6%)

\*NOTE: These numbers are from the White House Office of Management and Budget FY 2015 appendix and may be adjusted following the full NSF budget request release. The appendix can be viewed at:

<http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/nsf.pdf>.

## U.S. Department of Agriculture

The President's FY 2015 budget request would provide \$23.7 billion in discretionary funding for the U.S. Department of Agriculture (USDA), which is a decrease of about \$938 million (3.8 percent) below the FY 2014 enacted level. Within this discretionary budget, the Agricultural Research Service (ARS) would receive a slight decrease and the National Institute of Food and Agriculture (NIFA) would receive an increase.

- The mission of USDA continues to align well with the Administration's priorities, especially in the areas of nutrition, rural development, and renewable energy. These goals would be accomplished in part by supporting the Supplemental Nutrition Assistance Program (SNAP) and healthy eating programs, doubling funding for broadband internet in rural areas, and providing \$5 billion to aid the transition of rural utilities to clean energy. Furthermore, the President's FY 2015 budget request would make strategic investments in USDA's research portfolio to strengthen key activities in climate resilience and crop production techniques.
- In the FY 2015 budget request, the Administration promotes a shift toward competitive research grants but steps back somewhat from the robust budgetary support it has given in previous years to NIFA's primary competitive extramural research program, the Agriculture and Food Research Initiative (AFRI). Specifically, AFRI would receive \$325 million, which is an increase of 2.8 percent over the FY 2014 enacted level.
- It is not expected that the President's request will pass Congress in its current form, and actual USDA appropriations have not kept pace with the Administration's requests in previous years due to overall budget constraints. However, Congress continues to voice bipartisan support for USDA research programs, and the recent passage of the Farm Bill has at least temporarily resolved some of the more controversial issues surrounding the USDA budget.

### New and Signature Initiatives

Under the President's FY 2015 proposal, NIFA would receive a total of about \$1.5 billion, a 4.8 percent increase over the FY 2014 level. Additionally, the request proposes about \$1.1 billion in discretionary spending for ARS, representing a 1.6 percent decrease below FY 2014 appropriations.

#### Agriculture and Food Research Initiative (AFRI)

In addition to proposing an increase in the AFRI budget to \$325 million, the President's budget request highlights AFRI research in climate variability and change, water for agriculture, food security, nutrition and obesity prevention in at-risk populations, food safety, sustainable bioenergy production, and foundational science. The request also includes within AFRI a food, agricultural, natural resources, and human sciences education initiative that would support the development of the future food and agriculture workforce.

#### Innovation Institutes

In agreement with recommendations of the President's Council of Advisors on Science and Technology, the budget request would provide \$75 million to create three multidisciplinary institutes, each funded at \$25 million per year for at least five years. The institutes are intended to leverage public-private partnerships to address specific challenges related to agricultural research. One institute would focus

on pollinator health research, a second would establish a National Network for Manufacturing Innovation focused on bio-manufacturing and bioproducts research, and a third would focus on anti-microbial resistance research and mitigation.

### **Pollinator Health Initiative**

The budget request would provide \$45 million in total mandatory and discretionary funding for USDA, the Environmental Protection Agency, and other federal partners to address the declining pollinator population, especially that of honey bees. Leveraging public-private partnerships, the initiative would support research to understand and prevent Colony Collapse Disorder and also would include efforts to preserve pollinator habitat and support improved surveys of pollinator populations.

### **Additional funding proposed as part of the Opportunity Initiative would include:**

- \$197 million would be provided for ARS, which would include \$42.2 million for intramural programs and \$155 million for the construction of a new Southeast Poultry Disease Research Laboratory located in Athens, GA to consolidate the functions of two currently outdated facilities.
- \$60 million would be provided for AFRI competitive research.
- \$20 million would be provided to facilitate a new, competitive awards program to support research projects through the Hatch Act and Evans-Allen formula funding grants.

### **Proposed Reductions and Terminations**

Within NIFA, reductions were proposed within the Animal Health and Disease Research, Pest Management/Crop Protection Activities, and Higher Education Programs. Minor reductions within ARS were made to the Livestock Production, Food Safety, Livestock Protection, Crop Protection, and Environmental Stewardship research programs.

Continuing a proposal from last year, six Science, Technology, Engineering, and Math (STEM) programs, including the Higher Education Challenge Grants and Graduate and Postgraduate Fellowship Grants, would be consolidated into the Department of Education and the National Science Foundation as part of a government-wide effort to streamline and minimize duplication among STEM programs. See the interagency section of this report for additional information on this proposal.

In an effort to establish additional reforms beyond those included in the 2014 Farm Bill, the FY 2015 budget request proposes changes to the structure of the crop insurance program and would reduce subsidies to save an estimated \$14 billion over ten years.

### **Ongoing Areas of Interest**

The budget request for USDA continues to be organized around the four strategic program goals of the agency: helping rural communities become self-sustaining and economically healthy; ensuring forest, land, and water resources are conserved, restored, and protected from climate change; promoting agricultural production and biotechnology exports to improve food security; and ensuring the nation's children have access to safe and nutritious food.

The President's continued support for USDA's Research, Education, and Economics (REE) mission area signals the acknowledgement that USDA REE activities are critical to the advancement of a number of the Administration's broader priorities. For example, the budget request would reallocate \$44 million of the ARS budget to support research to understand and mitigate the effects of climate change on agriculture. This ARS investment would be coordinated with activities of the recently named USDA Regional Climate Hubs, which are expected to focus on region-specific research.

As in last year's request, the FY 2015 budget request would provide \$10 million to establish a Hispanic-Serving Agricultural Colleges and Universities Endowment Fund to increase participation of Hispanic students in agricultural sciences.

Mandatory spending on Farm Bill programs of interest were restored with passage of the 2014 Farm Bill. The FY 2015 budget request would provide the Organic Agriculture Research and Education Initiative with \$20 million, the Beginning Farmer and Rancher Development Program with \$20 million, the Specialty Crop Research Initiative with \$80 million, and the Biomass Research and Development Program with \$3 million.

The budget request also sustains formula funding under the Smith-Lever Act 3(b) and 3(c) and Hatch Act grants at current funding levels.

Source: USDA's FY 2015 budget materials can be viewed at:

<http://www.obpa.usda.gov/budsum/FY15budsum.pdf>.

### U.S. Department of Agriculture

(In millions)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014
<b>USDA, Research, Education, Economics</b>	<b>2,815</b>	<b>2,889</b>	<b>74 (2.6%)</b>
Agricultural Research Service (ARS)	1,154	1,136	-18 (1.6%)
National Institute of Food and Agriculture (NIFA)	1,422	1,490	68 (4.8%)
<i>AFRI</i>	316	325	9 (2.8%)
<i>Hatch Act</i>	244	244	--
<i>Hispanic Serving Institutions Education Grants</i>	9.2	9.2	--
<i>Higher Education Programs</i>	38	34	-4 (10.5%)
<i>Smith-Lever Act 3(b) and 3(c)</i>	300	300	--
Food Safety and Inspection Service (USDA)	1,024	1,014	-10 (1.0%)



## U.S. Geological Survey

The President's FY 2015 budget request includes \$1.073 billion for the U.S. Geological Survey (USGS), which is an increase of \$41.27 million or 4.0 percent over the FY 2014 enacted level.

- As the Department of the Interior's science arm, USGS continues to provide science for decision-making for many of the nation's pressing natural resources and environmental challenges. The budget request prioritizes certain "targeted" areas over others. Most notably, the Natural Hazards account would receive a minor decrease while all of the other science accounts receive decent increases. As such, the request highlights "ecosystem restoration, water resources management, sustainable energy development, climate resilience, and earth observation systems."<sup>10</sup>
- As noted above, the Natural Hazards account fared the worst in the FY 2015 request as it is the only science account slated for an overall decrease. Conversely, it received the largest percentage gain in the FY 2014 appropriations bill. Natural Hazards may fare well in the appropriations process, however, as it is favored by both Republicans and Democrats in Congress.
- Similar to past budget requests, USGS would reduce by nearly half the *Water Resources Research Act* program, which supports Water Resources Research Institutes (WRRIs). However, Congress historically appropriates the full \$6.5 million to the program each year regardless of the budget request.
- Unlike past budget requests that have proposed moving Landsat from the National Aeronautics and Space Administration (NASA) to USGS, similar to last year, this budget request proposes maintaining Landsat at NASA and USGS managing the data.

### New and Signature Initiatives

As in past budget requests, the President's FY 2015 request seeks to sustain funding for many of USGS's existing initiatives. For the third year in a row, the Obama Administration would fund the continuation of a hydraulic fracturing research and development program between USGS, the Department of Energy, and the Environmental Protection Agency.

### Ongoing Areas of Interest

For FY 2015, the President's budget request would prioritize the following research areas:

1. The **Natural Hazards** area would support research and tools to protect lives and property. \$700,000 would go toward studying induced seismicity from hydraulic fracturing.
2. The **Ecosystem** area would focus on addressing invasive species, restoring ecosystems, and assessing and quantifying ecosystem services.
3. The **Climate and Land Use Change** area would focus on resource management, climate adaptation, and sustaining data collection from the Landsat platforms. USGS would commit \$3 million to research on drought impacts and adaptive management. This account also houses the

<sup>10</sup> <http://www.doi.gov/budget/appropriations/2015/highlights/upload/BH051.pdf>, "Bureau Highlights: U.S. Geological Survey," Department of the Interior, 2014 (pg. BH-51).

Landsat program and USGS is slated to begin working with NASA on a 20-year sustained land-imaging program.

4. The **Energy, Minerals, and Environmental Health** area would pursue research and mapping related to energy and minerals. The study of pathogens and contaminants would also be a priority.
5. The **Water Resources** area would continue to emphasize hydrologic modeling as well as the impacts of climate change and hydraulic fracturing on water resources.
6. The **Core Science Systems** area continues to prioritize data preservation and access as they relate to the USGS mission.

Source: USGS's FY 2015 budget materials can be viewed at:

<http://www.doi.gov/budget/appropriations/2015/highlights/upload/BH051.pdf>.

### U.S. Geological Survey

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request vs. FY 2014
<b>USGS, total</b>	<b>1,032,000</b>	<b>1,073,268</b>	<b>41,268 (4.0%)</b>
<b>Natural Hazards</b>	<b>128,486</b>	<b>128,339</b>	<b>-147 (0.1%)</b>
Earthquake Hazards	53,803	54,117	314 (0.6%)
Global Seismographic Network	4,853	4,866	13 (0.3%)
<b>Ecosystems</b>	<b>152,811</b>	<b>162,025</b>	<b>9,214 (6.0%)</b>
<b>Climate and Land Use Change</b>	<b>131,975</b>	<b>149,081</b>	<b>17,106 (13.0%)</b>
<b>Energy, Minerals, and Environmental Health</b>	<b>91,515</b>	<b>99,073</b>	<b>7,558 (8.3%)</b>
<b>Water Resources</b>	<b>207,281</b>	<b>210,386</b>	<b>3,105 (1.5%)</b>
Water Resources Research Act	6,500	3,500	-3,000 (46.2%)
<b>Core Science Systems</b>	<b>108,807</b>	<b>109,400</b>	<b>593 (0.5%)</b>
<b>Facilities</b>	<b>100,421</b>	<b>106,697</b>	<b>6,276 (6.2%)</b>

## Corporation for National and Community Service

The President's FY 2015 budget request includes \$1.050 billion for the Corporation for National and Community Service (CNCS), which is less than one percent above the FY 2014 enacted level.

The Corporation continues to be a priority for the Administration. In July 2013, President Obama announced the creation of the President's Task Force on Expanding National Service, and in his 2014 State of the Union speech, he emphasized the importance of and duty to community service. The FY 2015 budget request supports flat funding for the AmeriCorps program and the Social Innovation Fund, a signature initiative that supports communities through innovative solutions in three areas: economic opportunity, youth development, and healthy futures. Additionally, the budget request would support collaboration on a new service corps with other federal agencies, State Service Commissions, institutes of higher education, and the nonprofit sector. The new service corps would build on the initial success of FEMA Corps, a unit of AmeriCorps NCCC; School Turnaround AmeriCorps; and other service-related initiatives.

Source: The CNCS FY 2015 Congressional Budget Justification can be viewed at:

[http://www.nationalservice.gov/sites/default/files/documents/FY2015\\_BudgetinBrief.pdf](http://www.nationalservice.gov/sites/default/files/documents/FY2015_BudgetinBrief.pdf); a quick reference budget chart can be viewed at:

[http://www.nationalservice.gov/sites/default/files/documents/FY2015\\_Budget\\_Request\\_Summary\\_Table.pdf](http://www.nationalservice.gov/sites/default/files/documents/FY2015_Budget_Request_Summary_Table.pdf).

### Corporation for National and Community Service

(In thousands)

	FY 2014 Enacted	FY 2015 Request	Request v. FY 2014
<b>CNCS, total</b>	<b>1,049,954</b>	<b>1,050,235</b>	<b>281 (0.03%)</b>
Social Innovation Fund	70,000	70,000	--
AmeriCorps State and National	335,430	335,430	--
AmeriCorps VISTA	92,364	92,364	--
AmeriCorps NCCC	30,000	30,000	--

## Interagency Initiatives and Priorities

### **Advanced Manufacturing**

The President's budget request for FY 2015 would provide \$2.2 billion for advanced manufacturing research and development across federal agencies, a 12 percent increase from 2014<sup>11</sup>. The President continues to support research activities in advanced manufacturing with a proposal for five new high-tech manufacturing hubs supported through the National Network for Manufacturing Innovation (NNMI) that connect universities with industry. Four institutes have already been awarded.

Beyond the five institutes included as part of the Department of Energy (DOE) and the Department of Defense (DOD) base budgets, the request proposes additional funding as part of the Opportunity Initiative to establish a network of 45 manufacturing institutes across the U.S. over the next 10 years, led by DOE, DOD, and U.S. Department of Agriculture (USDA).

Specific manufacturing initiatives included in the budget request are highlighted below:

- USDA would support three new multidisciplinary agricultural research institutes, one of which would focus on advanced bio-based manufacturing.
- The Hollings Manufacturing Extension Partnership (MEP) at the National Institute of Standards and Technology (NIST) would receive \$141 million, a 10 percent increase over FY 2014 to expand technology and supply chain capabilities. The budget also includes additional funding of \$15 million for the Advanced Manufacturing Technology Consortia (AMTech) program, created in FY 2014 at the level of \$14.5 million.
- The budget request for DOE includes funding to support advanced manufacturing to strengthen U.S. competitiveness and cut carbon pollution as part of efforts towards clean energy technologies. The budget would provide \$305 million to increase activities related to advanced manufacturing processes, including Clean Energy Manufacturing Innovation Institutes as part of the larger NNMI activity. The first of the DOE NNMI hubs for FY 2015 was announced last week to establish an Advanced Composites Manufacturing Innovation Institute.
- The budget request for the National Science Foundation (NSF) includes an initiative to support smart systems research that includes \$151 million to support fundamental research in advanced manufacturing and \$29 million for the NSF contribution to the ongoing National Robotics Initiative (NRI). The budget request also includes \$22 million for the NSF contribution to the Materials Genome Initiative (MGI) under the Administration's advanced manufacturing umbrella.

Additional manufacturing activities proposed through the Opportunity Initiative include:

- Funding to support advanced manufacturing though basic research into scaling new manufacturing technologies as well as infrastructure and jobs through the NNMI.

<sup>11</sup> <http://www.whitehouse.gov/sites/default/files/microsites/ostp/Fy%202015%20R&D.pdf>, "The 2015 Budget: Science, Technology, and Innovation for Opportunity and Growth," White House Office of Science and Technology Policy, 2014 (pg. 1).

- NIST would receive funding through the Opportunity Initiative to accelerate research in specific areas including advanced manufacturing.

*Source: The White House FY 2015 Budget Request can be viewed at:*

<http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/budget.pdf>.

### **National Nanotechnology Initiative**

The President's FY 2015 budget request would provide \$1.5 billion for the National Nanotechnology Initiative (NNI), a slight decrease of \$1 million, or 0.1 percent, from the FY 2014 enacted level. NNI is a multi-agency initiative launched in 2001 that coordinates research and development on materials, devices, and systems in the size range of one to 100 nanometers. Participating agencies support fundamental nanoscience, nanotechnology innovation, technology transfer, and nanomanufacturing through individual investigator awards, multi-disciplinary centers of excellence, education and training programs, and the development of new infrastructure and standards.

The FY 2015 request notes that NNI investments continue to be guided by interagency Nanotechnology Signature Initiatives in key national priority areas. Current initiatives include: sustainable nanomanufacturing, solar energy, sustainable design of nanoengineered materials, nanoinformatics and modeling, nanoscale technology for sensors, and nanoelectronics. Signature initiatives are pursued, "through close alignment of existing and planned research programs, public-private partnerships, and research roadmaps."<sup>12</sup>

NNI is guided by a strategic plan released on February 28, 2014.<sup>13</sup> The plan continues to support the four NNI goals: (1) advance a world-class nanotechnology research and development program; (2) foster the transfer of new technologies into products for commercial and public benefit; (3) develop and sustain educational resources, a skilled workforce, and a dynamic infrastructure and toolset to advance nanotechnology; and (4) support responsible development of nanotechnology.

*Source: The White House Office of Science and Technology Policy's budget request fact sheet, "The 2015 Budget: Science, Technology, and Innovation for Opportunity and Growth," can be viewed at: <http://www.whitehouse.gov/sites/default/files/microsites/ostp/Fy%202015%20R&D.pdf>. Additional details will be available in the "NNI Supplement to the President's 2015 Budget" at <http://nano.gov>. The Supplement is generally available within five weeks of the release of the budget request.*

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<sup>12</sup> <http://www.whitehouse.gov/sites/default/files/microsites/ostp/Fy%202015%20R&D.pdf>, The 2015 Budget: Science, Technology, and Innovation for Opportunity and Growth, White House Office of Science and Technology Policy, 2014 (pg. 7).

<sup>13</sup> [http://nano.gov/sites/default/files/pub\\_resource/2014\\_nni\\_strategic\\_plan.pdf](http://nano.gov/sites/default/files/pub_resource/2014_nni_strategic_plan.pdf), 2014 National Nanotechnology Strategic Plan, National Science and Technology Council Subcommittee on Nanoscale Science, Engineering, and Technology.

## **Networking and Information Technology Research and Development Program**

The President's budget request includes \$3.79 billion for the Networking and Information Technology Development Program (NITRD), which is \$114 million or 2.9 percent lower than the FY 2014 estimated level. NITRD is an interagency program that plans and coordinates individual federal research agency funding and initiatives in cyberinfrastructure and information technology. As in previous budget requests, the FY 2015 budget request would further support a focus on big data, to better capture, manage, and process large heterogeneous data sets, such as those produced by satellites, telescopes, genome sequencing technologies, and particle accelerators. Additionally, the budget request would continue to prioritize cybersecurity research, as outlined in *Trustworthy Cyberspace: Strategic Plan for the Federal Cybersecurity R&D Program*, a report on how to best coordinate federal cybersecurity research priorities across federal agencies. Other ongoing NITRD research areas include information assurance, health IT, wireless spectrum sharing, cloud computing, high-end computing systems, advanced networking, software development, and high-confidence systems.

*Sources and Additional Information: The President's Budget Request for FY 2015 for NITRD can be viewed at: <http://www.whitehouse.gov/sites/default/files/microsites/ostp/Fy%202015%20R&D.pdf>. More information on NITRD is available at <http://www.nitrd.gov/>, and additional budget request details should be posted there within approximately 6 weeks under the FY 2015 NITRD Supplement to the President's Budget. The Trustworthy Cyberspace strategic plan is available at [http://www.whitehouse.gov/sites/default/files/microsites/ostp/fed\\_cybersecurity\\_rd\\_strategic\\_plan\\_2011.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/fed_cybersecurity_rd_strategic_plan_2011.pdf).*

The table below outlines the proposed NITRD funding contributions for each participating agency:

### **Networking and Information Technology Research and Development Program**

*(In thousands)*

	<b>FY 2014 Estimate</b>	<b>FY 2015 Request</b>	<b>Request vs. FY 2014 Estimate</b>
<b>NITRD, total</b>	<b>3,900,000</b>	<b>3,786,000</b>	<b>-114,000 (2.9%)</b>
NSF	1,160,000	1,158,000	-2,000 (0.2%)
DOE	583,000	637,000	54,000 (9.3%)
DOC	146,000	151,000	6,000 (3.8%)
DOD	1,231,000	1,084,000	-146,000 (11.9%)
DHS	92,000	79,000	-13,000 (13.6%)
HHS*	566,000	560,000	-6,000 (1.1%)
NASA	116,000	109,000	-7,000 (5.6%)
All Other	8,000	8,000	--

NOTE: numbers in the chart are rounded to the nearest million, due to this rounding, numbers may not add up.

\*HHS includes funds from offsetting collections for Agency for Healthcare Research and Quality (AHRQ).

### **Neuroscience: BRAIN Initiative**

The President's FY 2015 budget request includes a total of approximately \$200 million for the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative, doubling the initial investment of \$100 million in FY 2014. First announced by the White House on April 2, 2013 the initiative was launched to enhance the development and application of new technologies that will revolutionize our understanding of the brain. BRAIN is a multi-agency activity that issued funding opportunities last year to support the pursuit of new ways to better understand complex neurological illnesses and conditions ranging from traumatic brain injury to Alzheimer's disease. The President's budget request includes funding for the BRAIN Initiative across the three primary agencies: the National Institutes of Health (NIH), the Defense Advanced Research Projects Agency (DARPA), and the National Science Foundation (NSF).

The budget request details the proposed investments:

- **National Institutes of Health (NIH):** \$100 million to continue expanding its efforts to fund research that enables the development of tools for circuitry mapping and better understanding of the relationship between cognition and behavior. The NIH Advisory Committee to the Director Working Group will continue work on the final report to the Director that will inform NIH's next phase of research investments. The final report is expected to include NIH's role in the BRAIN Initiative along with timetables for completion of priorities and measurable goals.
- **Defense Advanced Research Projects Agency (DARPA):** \$80 million to develop new sets of tools for imaging and analytics of neural and synaptic brain activities that will improve diagnosis and care of wounded warriors with post-traumatic brain injury, stress, or loss of memory (i.e. the Restoring Active Memory (RAM) funding opportunity), as well as new neurotechnology-based capabilities (e.g. the Systems-Based Neurotechnology for Emerging Therapies (SUBNETS)) and better data management. DARPA seeks to improve the analysis of large neural data sets by creating interfaces that will allow researchers to generate new models across multiple scales. Additionally, DARPA's investment would include the Prosthetic Hand Proprioception and Touch Interfaces (using Haptix sensors) to develop human implantable microsystems to give amputees the ability to have advanced control and sensory functions.
- **National Science Foundation (NSF):** \$20 million for the basic understanding of cognition and the healthy functions of the brain within various animal models, including humans. In FY 2015, NSF seeks to organize its BRAIN research goals into three areas: integrative and interdisciplinary research in neuroscience and cognition science; computational models, tools, and theories; and data infrastructures and technologies to enhance the handling of large-scale datasets. Within these three areas, NSF would support research that develops physical and conceptual tools that give insight into the understanding of thoughts, memories, actions and their link to brain activity.

*Sources and Additional Information: BRAIN Initiative details can be viewed at:*

<http://www.whitehouse.gov/sites/default/files/microsites/ostp/FY%202015%20BRAIN.pdf> and <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/health.pdf>.



## **STEM Education Programs**

The President's FY 2015 budget request once again proposes a reorganization of science, technology, engineering, and mathematics (STEM) education programs across the federal science and education agencies. The proposal is similar to the restructuring proposed in the FY 2014 request, which Congress largely rejected in the FY 2014 omnibus. However, the FY 2015 budget request does not request a transfer of funding between agencies, as was the case in the FY 2014 proposal. Rather, agencies such as the Department of Education (ED) and National Science Foundation (NSF) would receive substantial funding increases to carry out new and expanded STEM activities, while mission agencies such as the National Aeronautics and Space Administration (NASA) would internally consolidate their programs. The FY 2015 budget request also calls for further interagency partnerships to implement the *Federal STEM Education Five-Year Strategic Plan* and develop joint projects such as the joint NASA/ ED 21<sup>st</sup> Century Learning Centers program and the joint NSF/ ED standards for education research.

Similar to the FY 2014 request, within ED, the President's budget request includes \$110 million to create STEM Innovation Networks, consortia of local education agencies (LEAs), universities, and community partners, to develop, test, and scale up innovative practices and tools to improve STEM learning in participating LEAs and schools. The request again includes \$20 million to launch a pilot STEM Master Teacher Corps which would support teachers who made multi-year commitments to teach STEM and take on leadership and mentoring responsibilities at their schools. The request would also provide \$40 million to again fund the STEM Teacher Pathways program to develop 100,000 new effective STEM teachers. The proposal additionally supports the creation of the Advanced Research Projects Agency for Education (ARPA-ED) which has been proposed in previous budgets but never funded by Congress.

The FY 2015 budget request would also provide over \$100 million to support the NSF Discovery Research K-12 program, and \$15 million for the National Institutes of Health (NIH) Science Education Partnership Award (SEPA) program. This is roughly consistent with previous funding levels for these programs. Within NSF, the budget proposal also includes \$118 million for a "consolidated" program at NSF to "implement evidence-based instructional practices, expand the evidence base, and support research on how new technologies can facilitate adoption and new use of instruction."<sup>14</sup> The budget proposal would also fund NSF's Research Experiences for Undergraduates (REU) at \$75 million and the Advanced Technological Education (ATE) program for STEM programs at community colleges at \$60 million. The request would support an expansion of NSF Graduate Research Fellowships at \$333 million and, similar to the FY 2014 request, the National Research Traineeship program would receive \$58 million. It is unclear how these funding levels would compare to FY 2014 funding as NIH and NSF have not yet released complete details of their budget requests.

The FY 2015 budget proposal also includes an increase of \$10 million to the Smithsonian Institution for informal STEM education activities, less than half the amount proposed in the FY 2014 request.

*Sources: The Preparing Americans with 21<sup>st</sup> Century Skills: Science, Technology, Engineering, and Mathematics (STEM) Education in the 2015 Budget document which outlines the interagency STEM*

<sup>14</sup> <http://www.whitehouse.gov/sites/default/files/microsites/ostp/Fy%202015%20STEM%20ed.pdf>, "Preparing Americans with 21<sup>st</sup> Century Skills: Science, Technology, Engineering, and Mathematics (STEM) Education in the 2015 Budget," Office of Science and Technology Policy, 2014 (page 4).

*activities and priorities in the FY 2015 budget can be viewed at:*

<http://www.whitehouse.gov/sites/default/files/microsites/ostp/Fy%202015%20STEM%20ed.pdf>.

*The Federal STEM Education Five-Year Strategic Plan can be viewed at:*

[http://www.whitehouse.gov/sites/default/files/microsites/ostp/stem\\_stratplan\\_2013.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/stem_stratplan_2013.pdf).



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1341 G Street, NW  
Eighth Floor  
Washington, DC 20005  
*t:* 202.289.7475  
*f:* 202.289.7454  
[www.lewis-burke.com](http://www.lewis-burke.com)