

# **APLU Analysis of the Administration's FY2014 Budget Request**

April 12, 2013

This document represents a preliminary analysis of the budget proposals for the various agencies and programs of interest to the APLU community. After more detailed reviews of the budget documents, the APLU staff will provide additional updates.

## **Broad Highlights of FY2014 Budget**

As expected, the Obama Administration released its FY2014 budget proposals earlier today. The \$3.77 trillion budget assumes that the sequester cuts will be repealed and proposes tax reform and entitlement reform as well as \$200 billion in further discretionary savings, with equal amounts from defense and non-defense. In total, the budget includes \$1.8 trillion in deficit reduction (revenue and savings) over ten years.

Typically the President's Budget Request (PBR) is compared to the current fiscal year. However, the PBR released today benchmarks FY2014 proposed funding levels against FY2012, rather than FY2013. One major reason for this is because the FY2013 funding levels are not yet known.

A significant highlight in the budget is the call for an increase of 9 percent above FY2012 levels for non-defense research and development (R&D), illustrating a commitment to science even in tight fiscal times.

While seeking to make the American Opportunity Tax Credit (AOTC) permanent, the Administration is also proposing to cap the tax deductions of the top two percent of earners to 28 percent.

An overview document of the budget request notes that the Administration seeks the creation of an America Fast Forward (AFF) Bond program to attract new capital for infrastructure, modeled after the Build America Bonds.

Continuing its past support for advanced manufacturing, the Administration calls for a one-time investment of \$1 billion to create a network of up to 15 manufacturing innovation institutes.

As part of a cross agency reorganization of science, technology, engineering, and mathematics (STEM) education programs to improve effectiveness of federal investments, the budget proposes consolidating disparate STEM K-12 education programs across the federal government. The consolidated programs will be led by the Department of Education (ED), the National Science Foundation (NSF), and the Smithsonian Institution. Additional details about this cross agency reorganization are provided below.

The documents related to the FY2014 budget request are available at the following website: <http://www.whitehouse.gov/omb/budget/Overview>. Below are some initial analyses of programs of interest, in alphabetical order by agency.

## **Department of Agriculture (USDA): National Institute of Food and Agriculture (NIFA)**

The President's FY 2014 budget includes \$383.3 million for NIFA's Agriculture and Food Research Initiative (AFRI), the core competitive research program at USDA. This is a \$106 million increase over the estimated FY2013 appropriation of \$277 million for AFRI and \$119 million over FY2012 levels.

For additional information on APLU's agriculture research priorities, see the APLU Board on Agriculture Assembly FY2014 appropriations request [here](#).

Documents related to the USDA budget request are available [here](#).

## **Department of Commerce**

The [FY2014 Commerce budget](#) includes \$1 billion in mandatory funding to establish a National Network of Manufacturing Innovation (NNMI) institutes, coordinated through NIST, that will develop cutting-edge manufacturing technologies and capabilities to propel the competitiveness of U.S. manufacturing.

The Budget also includes \$113 million for the Economic Development Administration (EDA) to create the Investing in Manufacturing Communities Fund, which will be invested in those regions that have created economic development strategies that build on the region's comparative advantages and leverage private-sector resources.

### **- National Institute of Standards and Technologies (NIST)**

The President's Budget provides \$928 million, \$176 million above the FY 2012 enacted level, for the [National Institute of Standards and Technologies \(NIST\)](#) in FY2014.

This budget, which prioritizes advanced manufacturing and cybersecurity, includes \$153.1 million, a \$25 million increase over FY2012, for the Hollings Manufacturing Extension Partnership (MEP) to assist manufacturers in adopting new technologies to improve their competitiveness. It also includes \$21 million for the Advanced Manufacturing Technology Consortia to develop road maps that would address common challenges faced by manufacturers.

### **- National Oceanic and Atmospheric Administration (NOAA)**

The budget request for the National Oceanic and Atmospheric Administration (NOAA) Office of Oceanic and Atmospheric Research (OAR) is \$472 million for FY2014, a significant increase when compared to \$385 million in FY2012. Of note to universities, NOAA aims to increase its extramural to intramural R&D spending ratio, from approximately 26 percent of its total budget in FY2012 to 34 percent of its total in FY2014.

An overview of the NOAA budget, which is incorporated into the larger budget for the Department of Commerce, is available [here](#).

## **Department of Defense (DOD)**

The budget request for the DOD proposes to fund both basic research (“6.1”) and applied research (“6.2”) programs at higher levels in FY2014 than the FY2013 requested level.

Specifically, the Pentagon budget seeks approximately \$2.165 billion for 6.1 research while proposing to fund 6.2 research at \$4.627 billion. These amounts represent increases of 2.3 percent and 3.3 percent, respectively, above the FY2013 requested levels.

The Defense Advanced Research Projects Agency (DARPA) would be funded at \$2.865 billion, an increase of 1.7 percent over the current year request.

Within basic research, Army 6.1 would be funded at \$436.7 million, Navy 6.1 would be funded at \$615.3 million, Air Force 6.1 would be funded at \$524.8 million, and Defense-wide basic research programs would be funded at \$588.1 million.

The Pentagon is seeking to fund applied research in the following manner: Army 6.2 at \$888.9 million, Navy 6.2 at \$834.5 million, Air Force 6.2 at \$1.23 billion, and Defense-wide 6.2 at \$1.78 billion.

The “R-1” document, which breaks down the defense research budget, can be found [here](#).

## **Department of Education (ED): Student Aid and Higher Education**

With respect to the areas of student aid and higher education, the Administration seeks to raise the total maximum Pell Grant to \$5,785, an increase of \$140 from the current level.

The Administration proposes to level fund (when compared to the FY2012 or pre-sequester FY2013 levels) a host of programs, including: the Supplemental Opportunity Education Grant (SEOG), TRIO, GEAR UP, and the Graduate Assistance in the Areas of National Need (GAANN). International Education and Foreign Language Studies would be funded at \$80.9 million under the Administration’s budget request, an increase of approximately \$6.8 million. The Federal Work Study (FWS) program would see an increase of \$150 million under this budget.

As noted above, the Administration seeks to reorganize the disparate efforts with respect to STEM education programs currently being supported by various federal agencies. The FY2014 budget calls for the redirection of \$180 million from other sources to the Department of Education (ED), NSF, and the Smithsonian Institution. ED will serve as the lead for a \$150-million STEM Innovation Networks Program, an \$80-million STEM Teacher Pathways program, and a \$35-million STEM Master Teacher Corps initiative.

As in past years, the Obama Administration again calls for \$1 billion for a “Race to the Top—College Affordability and Completion” competition for states. In addition, it seeks to create a “First in the World” Fund, totaling \$260 million. The Race to the Top proposal is aimed at states

to encourage greater levels of financial support to public institutions while promoting completion and other positive outcomes. The First in the World fund is aimed at individual entities, including institutions, to encourage innovative approaches to success.

Also as in the past, this budget calls for an “expansion” of the Perkins loan program, replacing the current program. In that same vein, the Administration is seeking to “reform” the other two “campus-based” aid programs, the SEOG and FWS. In the ED budget document, the Administration states that is “targeting campus-based aid funds to institutions with a demonstrated commitment to providing their students a high-quality education at a reasonable price while also emphasizing linkages between a student’s area of study and work-study experiences.”

Finally, with the impending July 1 deadline for a rate increase on federally subsidized student loans, the FY2014 includes a set of proposals on student loans that the Administration views as a single package. Instead of maintaining a fixed rate of 3.4 percent on new subsidized loans, ED is calling for variable rates on student loans, along the following lines:

- Subsidized loans: interest rate on 10-year Treasury note (T-note) plus 0.93 percent
- Unsubsidized loans: interest rate on 10-year T-note plus 2.93 percent
- PLUS loans: interest rate on 10-year T-note plus 3.93 percent.

The proposal eliminates a cap on interest rates; this includes the removal of the 8.25-percent cap on consolidated loans.

Although the new loans would no longer be subject to a cap on interest rates, borrowers who take out loans under the conditions described above would see their interest rates locked in at the rate at which the loans were issued.

Along with this change in policy on interest rates, the Administration is attempting to expand its “Pay As You Earn” program, which currently enables a relatively small pool of borrowers to cap their repayments to 10 percent of their discretionary income and forgives the remaining balance on the loan after 20 years. The budget proposes to expand this program to all borrowers, beginning July 1, 2014.

Detailed ED budget documents are available [here](#) and [here](#).

### **Department of Energy (DOE)**

The President’s budget provides \$28.4 billion in discretionary funds for the [Department of Energy \(DOE\) FY2014 Budget](#), an eight percent increase above the FY 2012 enacted level. It provides \$5.152 billion, a 4.4 percent or \$217 million increase over the 2012 level, for the DOE Office of Science (SC).

Of note to universities, the SC Basic Energy Sciences program will continue to support Energy Frontier Research Centers (EFRCs), including undergoing an open re-competition that will include a selection of new EFRCs and consider renewal applications for existing EFRCs. The Budget also includes one-time funding to fully forward fund some five year awards for new or renewed EFRCs for an overall FY 2014 total of \$169 million for the Centers.

The Budget includes \$379 million for the Advanced Research Projects Agency–Energy (ARPA-E), an increase of 38 percent or \$104 million over FY2012.

Of additional interest, the Budget provides \$421 million for the Fossil Energy Research and Development program, including an investment of \$266 million in fossil energy R&D primarily dedicated to developing cost-effective carbon capture and storage and advanced power systems.

The Budget also provides \$2.77 billion for the Office of Energy Efficiency and Renewable Energy (EERE). One new EERE cross-cutting initiative of interest may be the Clean Energy Manufacturing Initiative, which focuses on dramatically improving U.S. competitiveness in the manufacturing of clean energy products (like solar modules, LEDs, batteries, and wind blades) and through increased energy productivity in manufacturing industries. This initiative is a strategic integration of efforts in EERE’s Advanced Manufacturing Office and technology specific offices.

## **Department of Health And Human Services (HHS)**

### **- National Institutes of Health (NIH)**

The President’s budget for FY2014 provides \$31.3 billion for the National Institutes of Health, a \$471 million (1.5%) increase over the FY2012 enacted level. This would allow the NIH to fund 36,610 total Research Project Grants (RPGs), 351 more than in FY2012. New and competing RPGs would increase by 1,283 from FY2012 to 10,269.

The NIH budget request includes several themes, including “Unlocking the Mysteries of the Brain.” This incorporates the new cross-agency Brain Research through Application of Innovative Neurotechnologies (BRAIN) Initiative, which the President announced last week and which NIH would help support along with the Defense Advanced Research Projects Agency (DARPA) and the National Science Foundation (NSF) beginning in FY2014. Additionally the budget seeks to deliver on the Administration’s commitment to enhancing Alzheimer’s work, calling out \$80 million in additional funding for Alzheimer’s research.

“Big Data” is another highlight in the NIH budget. Advanced technological and computational capabilities such as high-resolution imaging, genomic sequencing, and electronic health records are generating a vast amount of data at breakneck speed. These Big Data datasets offer great opportunities to accelerate the pace of discovery and lead to improved health. Effectively and responsibly managing, mining and sharing Big Data pose major challenges, including the need for an appropriately trained workforce. In response, the NIH plans to launch the Big Data to Knowledge (BD2K) in FY2014 to support four efforts: (1) facilitate the broad use and sharing of large, complex biomedical data sets; (2) develop and disseminate new analytical methods and

software; (3) enhance training of the Big Data workforce; and (4) establish Centers of Excellence to develop generalizable approaches that address important problems in biomedical analytics, computational biology, and medical informatics. NIH proposes to invest at least \$40 million in the BD2K program in FY2014 through the Common Fund, and each Big Data Center of Excellence will be funded at \$2 million to \$5 million per year for 3-5 years. The agency expects to ramp up to a \$100 million investment annually within a few years. NIH recognizes the importance of collaborating and coordinating with other science agencies, such as the NSF, in these efforts.

The theme of “Translational Science” highlights the NIH Center for Regenerative Medicine, NIH efforts to work closely with the Food and Drug Administration, and the NIH’s National Center for Advancing Translational Sciences (NCATS). This theme hones in on rare diseases and disorders as well as on precision medicine to combat cancer, the second most common cause of death in the U.S. Additionally, the NIH seeks to launch the National Clinical Research Network to bring together tens of millions of patients who agree to participate in clinical research studies.

“Enhancing Diversity on the Biomedical Research Workforce” is another important theme running through the NIH budget. This persistent challenge has the NIH propose the Biomedical Research Workforce Diversity Initiative to increase the diversity of the U.S. biomedical workforce. A new program, Building Infrastructure Leading to Diversity (BUILD) Program, would focus on mostly under-resourced institutions with a large undergraduate Pell Grant population. The plan calls for approximately 10 institutions to enroll about 600 students across the U.S. for rigorous mentoring, scholarships and stipends, undergraduate research training, and mentor training. The Diversity Initiative would also create a National Research Mentoring Network to connect students, postdoc and faculty to experienced mentors.

An explanation of the NIH budget request is available [here](#).

- **Centers For Disease Control And Prevention (CDC)**

The President’s budget highlights an inclusion of \$10 million within the Centers for Disease Control and Prevention (CDC) to support research on the causes and prevention of gun violence.

**Department of Interior**

- **Geological Survey (USGS)**

The FY2014 request for the U.S. Geological Survey (USGS) is \$1.2 billion, an increase of \$98.2 million above the FY2012 level. The budget request essentially eliminates the Water Resources Research Institutes, proposing a decrease of \$5.5 million from the FY2012 level of \$6.5 million, though maintaining \$1 million for the national competitive grants program.

A detailed budget request for USGS is available [here](#).

### **Environmental Protection Agency (EPA)**

The Environmental Protection Agency (EPA) Science and Technology (S&T) budget request is \$784 million for FY2014, down \$10 million from FY2012.

The budget proposes to allocate \$16.4 million from the Science to Achieve Results (STAR)/Greater Research Opportunities (GRO) fellowships for the STEM reorganization effort.

FY2014 EPA budget document are available [here](#).

### **National Aeronautics and Space Administration (NASA)**

The President's budget requests \$17.7 billion overall for [NASA](#), a 0.3 percent or \$50 million decrease from FY2012 enacted.

NASA Science Mission Directorate would be funded at \$5.017 billion. Within SMD, the FY2014 Budget provides:

- \$1.85 billion for Earth Science
- \$1.22 billion for Planetary Science
- \$642.3 million for Astrophysics
- \$658.2 million for the James Webb Space Telescope
- \$653.7 million for Heliophysics

For Aeronautics, the President requests \$565.7 million and \$742.6 million for Space Technology account.

Overall, NASA Education programs would receive \$94 million, a decrease which reflects the consolidation of STEM Education programs government-wide. The Space Grant program is provided \$24 million, significantly under the \$40 million level of FY2012. The Administration also requests \$15 million for Space Technology Fellowships.

### **National Endowment for the Humanities (NEH)**

The President's Budget provides National Endowment for the Humanities (NEH) with \$154.4 million. The National Endowment for the Arts (NEA) is recommended at the same amount.

The NEH budget document is available at this [website](#).

### **National Science Foundation**

The President's FY2014 Budget provides \$7.626 billion for [NSF](#), 8.4 percent or \$593 million above the 2012 enacted level, including strong support for cross-cutting research priorities such as advanced manufacturing and clean energy.

Specifically, the Budget proposes:

- \$6.2 billion for Research and Related Activities, a \$523 million or 9.2 percent increase over FY2012;
- \$880 million for Education and Human Resources, a \$51 million or 6.2% increase over FY2012;
- \$210 million for Major Research Equipment and Facilities Construction, a \$13 million or 6.6 percent increase over FY2012.

NSF FY2014 Priorities include:

- Cyber-Enabled Materials, Manufacturing, and Smart Systems (CEMMSS): \$300 million. CEMMSS aims to transform static systems, processes, and edifices into adaptive, pervasive "smart" systems with embedded computational intelligence that can sense, adapt, and react.
- Cyberinfrastructure Framework for 21st Century Science, Engineering, and Education (CIF21): \$155 million. CIF21 aims to expand investment in the Big Data/National Data Infrastructure program, a joint solicitation with NIH.
- NSF Innovation Corps (I-Corps): \$25 million. This is a continuation of the program that assists in bridging the gap between discoveries and downstream technological applications, including commercialization of new technologies, products, and processes
- Secure and Trustworthy Cyberspace (SaTC): \$110 million. SaTC would align NSF's cybersecurity investments with the four thrusts outlined in the national cybersecurity strategy, *Trustworthy Cyberspace: Strategic Plan for the Federal Cybersecurity Research and Development Program*.

As mentioned earlier, the Administration is proposing a government-wide reorganization of STEM education programs and NSF education programs would follow a new strategic framework. In terms of graduate education, the President's budget would fund NSF at \$325 million for the National Graduate Research Fellowship program (NGRF), which builds on and expands the NSF Graduate Research Fellowship program (GRF). Through this expanded program, NSF expects an increase of approximately 700 fellows, bringing the total estimated number of new fellows awarded in FY 2014 to 2,700.