



## AAU Summary of the President's FY 2017 Budget Proposal February 9, 2016

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The President presented the Administration's proposed budget for FY17 on February 9. The full budget is available on the Office of Management and Budget [website](#). The AAU overview below is based on the Administration's budget documents. All figures denote budget authority (BA), unless otherwise noted.

AAU has posted its table of [FY17 Funding Priorities](#) and its individual [agency budget tables](#).

### GENERAL OVERVIEW

While the President's FY17 budget would stay within the tight caps set by last year's budget deal for defense and nondefense discretionary spending, it also calls for significant new investments in several domestic areas, including research and higher education. To do so, the Administration is proposing that budget increases for several agencies—including the National Institutes of Health (NIH) and the National Science Foundation (NSF)—be funded using mandatory, as well as discretionary, funding. The Republican-led Congress is not likely to go along.

AAU issued a [statement](#) about the President's FY17 budget request.

Among the announced initiatives are the \$755 million in FY17 for a "moonshot" to cure cancer; a doubling, to \$700 million, of the budget for USDA's Agriculture, Food and Research Initiative; a \$4.1-billion effort to promote computer science education in K-12 schools; a major boost in clean energy research and development; and a broad new effort on cybersecurity.

Among the President's higher education spending priorities, the budget again proposes to make two years of community college education free and consolidate higher education tax benefits. The budget also proposes to restore year-round Pell Grants.

For research, the Administration would raise funding, at least modestly, at most science agencies. The exception is the Department of Defense where funding for basic and applied research would be cut.

## RESEARCH AND DEVELOPMENT OVERVIEW

The FY17 budget would provide \$152 billion for research and development (R&D) government-wide, an increase of \$6.2 billion, or four percent.

Within the overall total, **basic research** would increase by \$975 million, or three percent, to \$34.5 billion, while **applied research** would increase by \$2.9 billion, or eight percent, to \$38.4 billion.

**NATIONAL INSTITUTES OF HEALTH (NIH)** The total program funding level proposed for NIH in FY17 is \$33.1 billion. This includes \$31.3 billion in discretionary spending and \$1.8 billion in mandatory funding. It dedicates \$300 million to the White House's Precision Medicine Initiative, which it launched last year, and \$195 million to the BRAIN Initiative that launched in 2013.

The budget also provides an increase of \$755 million for the cancer "moon shot" effort being led by Vice President Joe Biden. The National Cancer Institute, which received a \$264 million boost from Congress in December, would receive \$680 million more in FY17. The Administration says the NIH funding would allow for almost 10,000 new and competing NIH grants.

The Congressional FY16 omnibus spending bill gave NIH an historic funding boost of \$2 billion. Should Congress approve the administration's proposed FY17 mandatory funding plan, NIH would receive an additional \$1 billion over FY16 appropriated funding

**Addressing the Zika Virus.** The President will shortly [request supplemental funds](#) of \$1.8 billion from Congress to fund research and prevention efforts related to the Zika virus. The bulk of the \$828 million would be directed to the Centers for Disease Control and Prevention for work on "mosquito control programs," enhanced work at laboratories, creation of rapid-response teams, and other efforts.

Another \$250 million would go to the Centers for Medicare and Medicaid Services to improve health care services for at-risk or infected pregnant women. NIH and the Food and Drug Administration would receive the rest of the money for such activities as increased "research, rapid advanced development, and commercialization of new vaccines and diagnostic tests" and to help other countries deal with the virus and halt its spread.

**NATIONAL SCIENCE FOUNDATION (NSF).** The Administration is requesting \$7.96 billion for NSF, an increase of \$500.5 million or 6.7 percent. The request includes \$7.56 billion in discretionary funding and \$400 million in mandatory funding. The Administration says it is requesting the one-year mandatory funding to advance innovation and provide support for early career scientists and engineers.

For **Research and Related Activities (R&RA)**, the FY17 request is \$6.425 billion, an increase of \$391.7 million, or 6.5 percent. The R&RA budget requests \$6.079 billion in discretionary funding and \$346 million in mandatory funding.

The **Education and Human Resources (HER)** Directorate request is \$952.9 million, an increase of \$72.86 million, or 8.3 percent. The EHR budget requests \$898.9 in discretionary funding and \$54 million in mandatory funding.

For **Major Research Equipment and Facilities Construction**, the request is \$193.12 million, a cut of 3.6 percent from the FY16 level.

The FY17 NSF budget also requests funding for the following cross-government and cross-agency initiatives:

- Clean Energy Economy (\$512 million): to support research and education in renewable and alternative energy sources for electricity and fuels.
- Understanding the Brain (\$142 million): to enable scientific understanding of the full complexity of the brain in action and in context.
- Increase Resilience to Disasters (\$43 million): to improve predictability and risk assessment and increase resilience to extreme natural and man-made events.
- Sustaining the Food, Energy, and Water System (\$62 million): to understand, design, and model the interconnected food, energy, and water system through interdisciplinary research.
- Cutting-Edge Manufacturing (\$176 million): for advancing manufacturing.
- Commercialization of University Research (\$30 million): for NSF's public-private Innovation Corps (I-Corps) program to further build, utilize, and sustain a national innovation ecosystem.
- Capabilities and Infrastructure for Research and Education (\$139 million): \$33 million for the multi-agency National Strategic Computing Initiative (NSCI) to advance the Nation's computational infrastructure for research. Invests \$106 million in the construction of two Regional Class Research Vessels to meet anticipated ocean science requirements.

The FY17 budget includes funding for undergraduate and graduate education:

- Improving Undergraduate STEM Education (\$109 million): to accelerate the quality and effectiveness of undergraduate education in all STEM fields.
- NSF Research Traineeships (\$59 million): to identify priority research themes that align with NSF initiatives and have strong potential for the development and testing of innovative practices in graduation education.
- Graduate Research Fellowships (\$332 million): to support students with high potential in STEM research and innovation in pursuit of multidisciplinary research.

NSF FY17 Summary Table: [http://www.nsf.gov/about/budget/fy2017/pdf/03\\_fy2017.pdf](http://www.nsf.gov/about/budget/fy2017/pdf/03_fy2017.pdf)

**DOE OFFICE OF SCIENCE (DOE).** The Administration is requesting \$5.672 billion for the DOE Office of Science in FY17, including \$100 million in mandatory funding for University Grants. The DOE budget justification says solicitations for the University Grant program will focus on research in Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, and Nuclear Physics.

Within the Office of Science, funding would increase for High Energy Physics (+\$22 million, 2.9 percent), Basic Energy Sciences (+\$87.7 million, 4.7 percent), Biological and Environmental Research (+\$53 million, 8.7 percent), Advanced Scientific Computing Research (+\$42 million, 6.8 percent), Nuclear Physics (+\$18.5 million, 3.0 percent), and Science Laboratory Infrastructure (+\$16 million, 14.4 percent). Fusion Research funding would be reduced to \$398 million (-\$40 million, 9.1 percent).

The **Advanced Research Projects Agency-Energy (ARPA-E)** would receive \$500 million, an increase of \$209 million, or 71.8 percent. This amount includes \$350 million in discretionary funding and \$150 million in mandatory funding.

**Mission Innovation.** According to Department of Energy Secretary Ernest Moniz, the Administration's FY17 budget "reaffirms President Obama's commitment to Mission Innovation, an agreement the United States and 19 other countries made to double clean energy R&D over five years. As part of the United States' commitment to Mission Innovation, the U.S. government will seek to double the \$6.4 billion that Congress provided in FY 2016 for clean energy R&D to \$12.8 billion in FY 2021."

The Administration is requesting the following funding for the Office of Science and ARPA-E under the Mission Innovation Initiative:

- Advanced Scientific Computing Research: \$10 million
- Basic Energy Sciences: \$51 million
- Biological and Environmental Research: \$35 million
- Fusion Energy Sciences Program: \$4 million
- ARPA-E: \$350 million

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA).** For FY17, the Administration is requesting \$19.03 billion for NASA, a cut of \$260 million, or 1.3, percent from the FY16 enacted level. Within the \$19 billion, \$763 million is mandatory funding and \$18.2 billion is discretionary funding.

For NASA's Science Mission Directorate (SMD), the Administration is requesting \$5.6 billion, which is \$11 million, or 0.2 percent, above the FY16 enacted level of \$5.59 billion. Within SMD, the Administration is requesting the following:

- **Earth Science:** \$2.03 billion, an increase of \$111 million over FY16. The FY17 budget request includes \$130.8 million for the Landsat 9 mission, whose expected launch date is

2021. The budget also includes \$6 million for the Global Learning and Observations to Benefit the Environment (GLOBE) science education program.

- **Planetary Science:** \$1.52 billion, a cut of \$112 million from FY16. The FY17 budget fully funds the Mars 2020 mission and requests \$49.6 million for the Europa mission. Of note, Congress funded Europa at \$175 million in FY16.
- **Astrophysics:** \$782 million, an increase of \$51 million over FY16. The FY17 budget fully funds SOFIA, and requests \$90 million for WFIRST, the same as the program's FY16 funding. The budget includes \$25 million for STEM Education outreach programs.
- **Heliophysics:** \$699 million, an increase of \$49 million over FY 16. The FY17 budget request includes \$232.5 million for Solar Probe Plus and \$80.7 million for the Solar Orbiter.
- **James Webb Space Telescope (JWST):** \$569 million, a reduction of \$51 million from FY16. This reflects a ramping-down of development for the space telescope and an expected launch date of October 2018.

For the **Aeronautics Mission Directorate** (ARMD) the Administration is requesting \$790.4 million, an increase of \$150 million above FY16. The space agency is increasing its focus on aeronautics research and will be implementing its strategic plan for the Directorate.

The FY17 budget request for NASA's **Space Technology Directorate** is \$827 million, or \$140 million above FY16. Of note, the Administration is requesting \$130 million for the RESTORE-L mission and \$66.6 million for the Solar Electric Propulsion Mission.

For the **International Space Station**, the Administration is requesting \$1.431 billion for operations, maintenance, and research. This includes \$1.109 billion for operations and maintenance and \$321.9 million for space station research.

For Education, the FY17 budget includes \$24 million for Space Grant, \$25 million for Education and Public Outreach activities (funded in SMD-Astrophysics), and \$6 million for the GLOBE education program (funded in SMD-Earth Science).

**DEPARTMENT OF DEFENSE (DOD).** The FY17 budget would increase funding for the broad Defense category of research, development, testing & evaluation (RDT&E) to \$71.4 billion, an increase of \$1.6 billion. It proposes to fund Defense science and technology (S&T) at \$12.5 billion, a reduction of \$749.6 million, or 5.7 percent, with the cuts spread across basic research, applied research, and advanced technology development.

Specifically, **basic research** (6.1) would receive \$2.101 billion, a cut of \$207.6 million, or 9.0 percent; **applied research** (6.2) would receive \$4.82 billion, a reduction of \$188 million, or 3.8 percent; and **advanced technology development** (6.3) would receive \$5.58 billion, a cut of

\$353.5 million, or 6 percent. The **Defense Advanced Research Projects Agency (DARPA)** would receive \$2.97 billion, an increase of \$82.4 million, or about 2.8 percent.

**NATIONAL ENDOWMENT FOR THE HUMANITIES (NEH).** The Administration proposes to fund NEH at \$149.8 million, a \$1.8 million increase above FY16. The total includes \$101 million for the Endowment's grant programs; \$10.2 million for NEH Chairman Adams' special initiative, *The Common Good: The Humanities in the Public Square*, which supports projects that demonstrate the role the humanities can play in public life; and \$10.7 million in federal matching funds. The latter includes funding for the NEH Challenge Grants program to help stimulate and match private donations in support of humanities institutions and organizations.

**AGRICULTURE AND FOOD RESEARCH INITIATIVE (AFRI)** in the Department of Agriculture. The budget proposes to double funding for this competitive research grant program by \$350 million, to \$700 million, the authorized level for the program.

## HIGHER EDUCATION AND STUDENT AID OVERVIEW

**Pell Grants.** The FY17 budget would provide \$22.5 billion in discretionary funding for Pell Grants, the same as in FY16. It also would reinstate year-round Pell Grants. The total of mandatory and discretionary funding would provide an estimated maximum award of \$5,935 in award year 2016-2017, an increase of \$20.

**Campus-Based Aid.** The campus-based programs would be level funded at their FY16 levels: Federal Work Study (\$989.7 million), Supplemental Educational Opportunity Grants (\$733.1 million).

**Perkins Loans.** The budget proposes to modernize and expand the Perkins Loan program into a new Unsubsidized Perkins Loan program which would provide \$8.5 billion in loans annually, allocating lending authority among institutions on the basis of the extent to which institutions enroll and graduate higher numbers of Pell-eligible students, and offer affordable and quality education such that graduates can repay their educational debt.

**Other Student Aid Programs.** The budget level funds the college readiness programs: TRIO at \$900 million and GEAR UP at \$322.75 million.

**Student Loans Reform.** The proposal would create a single pay-as-you-earn (PAYE) plan for loans originated on or after July 1, 2017, similar to the Revised PAYE (REPAYE) plan. Students who took up their first loans prior to July 1, 2017, could continue to select among the existing repayment plans for loans funding their current course of study; loans they take out for future degrees would be under the new terms. As described by the budget documents, the single PAYE plan would:

- Calculate loan payments at 10 percent of discretionary income, and eliminate the standard repayment cap, requiring high-income, high-balance borrowers to pay an equitable share of their earnings as their incomes rise;
- Forgive the remaining loan balance after 20 years of qualifying payments for borrowers with only undergraduate debt, and after 25 years for borrowers with graduate debt, to ensure that high-debt graduate borrowers, who may have higher incomes later in the repayment period, are more likely to repay their debt;
- Calculate payments for married borrowers filing separately on the combined household Adjusted Gross Income to ensure that married couples' payments are based on their true ability to pay;
- Cap the amount of interest that can accrue when a borrower's monthly payment is insufficient to cover the interest to avoid ballooning loan balances;
- Cap Public Sector Loan Forgiveness (PSLF) at \$57,500 to protect against institutional practices that may further increase student indebtedness, while ensuring the program provides generous relief for students committed to public service; and
- Prevent payments made under non-income driven repayment plans from being applied toward PSLF to ensure that loan forgiveness is targeted to students with the greatest need.

**International Education and Foreign Languages Studies.** The budget would reduce funding by \$4.9 million to \$67.3 million. The cut would be taken from the overseas programs, reducing their budget by 69 percent.

**Advanced Research Projects Agency for Education (ARPA-ED).** The request would provide up to \$30 million for ARPA-ED, an initiative to pursue technological breakthroughs with the potential to dramatically improve the effectiveness and productivity of teaching and learning.

**Graduate Assistance in Areas of National Need (GAANN).** The GAANN program would be level funded at \$29.3 million.

**Institute of Education Sciences (IES).** IES would receive \$698.3 million, an increase of \$75.8 million, or 12.3 percent, in the President's Budget.

**First in the World (FITW).** First in the World was zeroed out in the FY16 omnibus appropriations bill. The President's FY17 budget would reinstate funding for the program at \$100 million.

## **TAX POLICIES**

The FY17 budget includes numerous tax-related proposals of interest to research universities, a number of which are identical or substantially similar to this Administration's proposals in previous years.

### Education Tuition Credits and Grants

The FY17 budget seeks to "streamline and expand" education tax benefits in a number of ways. First, the budget proposes to consolidate the Lifetime Learning Credit into an expanded

American Opportunity Tax Credit (AOTC). Under this budget, the enhanced AOTC would index the maximum credit for inflation, make the credit available for a fifth year, provide a partial credit to part-time students, and increase the amount of the credit available to low-income students without income tax liability.

The budget also would better coordinate Pell Grants with the AOTC by excluding Pell Grants from gross income and the AOTC calculation. AOTC-eligible students and families would be able to claim an AOTC without reducing eligible expenses by the amount of their Pell Grants.

### Student Loans

The Administration proposes to repeal the deduction for student loan interest for new students.

The Administration also proposes to exclude from gross income the forgiven portion of federal student loans where the loan was forgiven or discharged as part of a program administered by the Department of Education.

The budget also would allow the IRS to disclose taxpayer identity information to the Department of Education and permit the Department of Education to re-disclose that information to certain educational institutions for purposes of collecting defaulted student loans.

### Income Deductions/Exclusions and Charitable Donations

The budget would limit to a maximum of 28 percent the tax rate at which upper-income taxpayers (in the 33-, 35-, or 39.6-percent tax brackets) can use itemized deductions and other tax preferences to reduce tax liability. The provision would limit such income exclusions and deductions as interest on education loans; employer-sponsored health insurance paid for by employers or with pre-tax employee dollars; and employee contributions to defined contribution retirement plans and IRAs.

At the same time, the Administration's proposal would implement a new minimum tax – the Fair Share Tax (FST) – on high-income taxpayers. Often labeled the “Buffett Rule,” the FST would equal 30 percent of adjusted gross income (AGI), minus a credit for charitable contributions. The charitable credit equals 28 percent of itemized charitable contributions allowed after the overall limitation on itemized deductions (the so-called Pease limitation). The FST would be phased in starting at \$1 million of AGI and fully phased in at \$2 million of AGI, with the threshold indexed for inflation beginning after 2017.

Also of note for colleges and universities: the budget would disallow the deduction for charitable contributions that entitles donors to a right to purchase tickets to sporting events.

### Form 990 Filings

The President's proposal would require all tax-exempt organizations that file Form 990 series returns, including the Form 990-T, or Forms 8872, to file them electronically.

### Bond Financing

The budget would create a new, permanent America Fast Forward Bond program intended to serve as an optional alternative to traditional tax-exempt bonds. Like Build America Bonds,



America Fast Forward Bonds would be taxable bonds issued by state and local governments by means of which the federal government makes direct payments to state and local governmental issuers through refundable tax credits. Eligible uses for America Fast Forward Bonds would include financing for section 501(c)(3) nonprofit entities.

The budget also would provide an exception to the private business limits on basic research conducted at tax-exempt bond-financed research facilities. This proposal would allow universities and other 501(c)(3) entities that own such research facilities to enter into contractual arrangements with private entities to conduct basic research at those facilities.

These arrangements would set out the terms for sharing the economic benefits of any products resulting from the research. Any such benefits, including exclusive or non-exclusive licenses of intellectual property, and licensing fees or royalty rates, would need determined, thorough bona fide, arms-length negotiations, when the university and private business enter into the contractual arrangement.

#### Research & Experimentation Tax Credit

The budget would repeal the traditional method for calculating the research and experimentation (R&E) tax credit. It would also raise the top rate of the alternative simplified research credit (ASC) from 14 percent to 18 percent; eliminate the reduced ASC rate of six percent for businesses without qualified research expenses in the prior three years; and permit the credit to offset alternative minimum tax liability. In addition, contract research expenses would include 75 percent of payments to qualified non-profit organizations, such as educational institutions, for qualified research.

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