

Analysis of the President's FY 2018 Budget Request for Federal Research, Health, and Higher Education Programs

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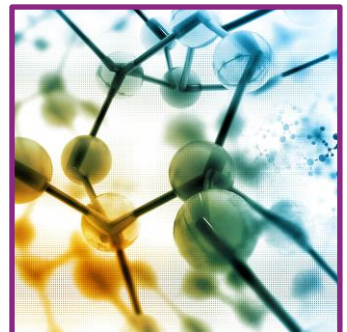
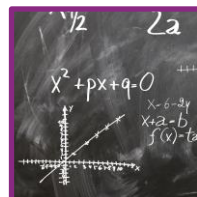


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Executive Summary

On May 23, 2017, President Trump released his first budget proposal to Congress. The budget request builds upon his earlier budget blueprint for fiscal year (FY) 2018, also known as the “skinny budget,” and represents a political document meant to reinforce specific campaign promises. Its two most significant features are drastic cuts to government programs across the entire bureaucracy and assumption of unrealistically rosy economic forecasts. It would make increasing defense spending the highest funding priority at the expense of domestic discretionary and safety net programs. These cuts include reductions to or eliminations of research and higher education priorities such as the National Institutes of Health, the National Science Foundation, the Department of Energy, the National Endowment for the Humanities, environmental agencies, and federal student aid. The budget request, which is in conflict with many of the decisions recently enacted into law as part of the Consolidated Appropriations Act for FY 2017 funding, is largely “dead on arrival” and is already facing steep opposition from Members of both parties in Congress.

In addition to targeting politically popular programs such as biomedical research funding and Medicaid, the proposed budget blueprint faces a major procedural hurdle because it breaks the spending caps set in law for defense and non-defense spending. Over the next several weeks, congressional committees will hear from federal agency leaders with respect to specific budget proposals and program reductions. Congress will draft appropriations bills that reflect congressional interests and priorities that are markedly different from the president’s budget request.

While the drastic cuts proposed in the request are unlikely to be enacted into law, the budget request provides information on agency plans and priorities as well as insight into which Obama Administration-era initiatives are likely to be carried over by the Trump Administration. For example, in the manufacturing space, while many programs would be dramatically reduced or discontinued, the Department of Defense (DOD) and the National Institute of Standards and Technology (NIST) would continue to support the Manufacturing USA Institutes.

The analysis below contains details on relevant agencies and programs of interest to the higher education, research, and healthcare communities. All funding figures in this document refer to FY 2018 budget request numbers and funding changes, whether in dollar amounts or percent changes, are compared to the FY 2017 omnibus appropriations act levels unless otherwise noted.

Department of Commerce

National Oceanic and Atmospheric Administration

President Trump's FY 2018 budget request includes \$4.78 billion in discretionary funding for the National Oceanic and Atmospheric Administration (NOAA), which would be a decrease of \$1 billion or 17.8 percent compared to the FY 2017 enacted level.

- Overall, the budget request proposes numerous reductions and several terminations of key programs most relevant to the academic research community. Through its request, the Administration aims to restrict NOAA activities to core functions related to weather forecasting, collecting data for fisheries management, and enabling ocean and coastal navigation.
- The FY 2018 budget request proposes the elimination of virtually all competitive extramural research across NOAA and would terminate signature programs such as the National Sea Grant Program, the National Estuarine and Research Reserves Systems (NERRS), and the Coastal Zone Management (Coastal Resilience) grants.
- While the NOAA budget request proposes steep decreases and eliminations, many of these programs, like Sea Grant and NERRS, enjoy significant bipartisan support in Congress and have been authorized by law.

Proposed Reductions and Terminations

Oceanic and Atmospheric Research (OAR)

With OAR proposed for a reduction of almost a third of its budget, key research programs would be eliminated or reduced. Proposed eliminations include the **National Sea Grant College Program** and the **Marine Aquaculture Program**. Consistent with the Trump Administration's recent efforts to roll back Obama-era climate change policy, OAR climate research would experience a 19 percent reduction that would result primarily from drastically reducing the **Competitive Climate Research Program** by 36 percent from the FY 2017 enacted level. This would include the termination of the Arctic Research program. Other areas of OAR would fare even worse than Climate Research with **Weather and Air Chemistry Research** (down 25 percent); **Ocean, Coastal, and Great Lakes Research** (down 49 percent); and **Ocean Exploration and Research** (down 46 percent) all facing deep cuts. The budget request proposes the termination of both the autonomous underwater vehicle (AUV) demonstration testbed and the **Atlantic Oceanographic and Meteorological Laboratory (AOML)** environmental genomics program. In the FY 2017 omnibus, Congress rejected a proposed decrease for AUV demonstration.

National Ocean Service

The budget request would terminate funding for competitive grant programs that support coastal and ocean resilience, including the **Coastal Science and Assessment** competitive research program, the **Regional Geospatial Modeling Grants program** and the **Ocean and Coastal Management and Services Coastal Management grants**. In addition, the **Hydrographic Research and Technology Development** account would experience a \$1.99 million decrease that would eliminate single-year cooperative agreements with universities, although funding would continue for the Joint Hydrographic Center and the Coast Survey Development Laboratory. For comparison, the FY 2017 omnibus provided a \$2 million increase specifically to "designate joint ocean and coastal mapping centers in other areas of the country to be co-located with an institution of higher education." The president's FY 2018 budget request also proposes the elimination of **NERRS**, a program that enjoys considerable bipartisan support.

The request proposes elimination of the **NOAA Office of Education**, including the **Competitive Education Grants**. The long-standing **Bay-Watershed Education and Training (B-WET) Regional Program**, is also proposed for elimination, although this program is typically proposed for elimination in budget requests and regularly restored by Congress.

Satellites

The NOAA FY 2018 budget request would provide \$1.58 billion for the **National Environmental Satellite, Data and Information Service (NESDIS) PAC**, a 20.2 percent decrease from the FY 2017 enacted level. Some of the proposed reductions are due to upcoming or recent satellite launches such as those for the **Geostationary Operational Environmental Satellite-R (GOES-R)** and the **Joint Polar Satellite System (JPSS)**. The President's FY 2018 request proposes steep decreases for the **Polar Follow On (PFO)** program and the **Space Weather Follow-on program** that will require a re-plan of these missions and potential termination for FY 2019.

New and Signature Initiatives

The FY 2018 NOAA budget request does not propose new research programs and would target the Agency's signature initiatives such as coastal resilience, ocean exploration, and weather and air chemistry research. One of the few increases in the budget request would be for the Office of Oceanic and Atmospheric Research (OAR) **High Performance Computing (HPC) infrastructure PAC account**. **Research Supercomputing** would receive an increase of \$5.96 million over FY 2017 levels for recapitalization research and development (R&D) to complete the Gaea supercomputer and develop a new funding model moving forward. However, this increase would come at the expense of the companion program at the National Weather Service (NWS), which would experience a decrease of \$6 million to terminate funding for the Jet supercomputing system program.

Despite a recent law that authorized new weather research and forecasting innovation programs at OAR, the FY 2018 NOAA budget request does not propose programs or initiatives, nor would it provide increases for existing programs to support these research areas. As compared to other life offices, the **National Weather Service (NWS)** would be relatively protected, with only a 4.5 percent reduction compared to FY 2017 omnibus levels. Within the NWS Observations account, the request proposes a decrease of \$25.99 million, which would limit both mesoscale meteorological observations and marine observations, and impact the National Mesonet Program.

Source: NOAA's FY 2018 Blue Book can be viewed at
http://www.corporateservices.noaa.gov/nbo/fy18_bluebook/FY18-BlueBook.pdf.

National Oceanic and Atmospheric Administration

(in millions of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
NOAA, Total	5,806.50	4,775.30	-1,031.20 (17.8%)
Operations, Research, and Facilities (ORF)	3,515.54	2,965.55	-550.0 (15.6%)
Oceanic and Atmospheric Research (OAR)	477.73	324.00	-153.72 (32.2%)
Competitive Climate Research	60.00	38.42	-21.59 (36.0%)
National Sea Grant College Program	63.00	0.0	-63.0 (100%)
Ocean Exploration & Research	36.00	19.44	-16.56 (46.0%)
National Weather Service (NWS)	979.88	936.06	-43.72 (4.5%)
National Ocean Service (NOS)	517.40	385.01	-132.39 (25.6%)
Coastal Science and Assessment: Competitive Research	10.00	0.0	-10.0 (100%)
Ocean and Coastal Management & Services: Coastal Management Grants	85.00	0.0	-85.0 (100%)
National Marine Fisheries Service (NMFS)	851.54	821.44	-30.10 (3.5%)
Procurement, Acquisition, and Construction (PAC)	2,255.61	1,807.80	-447.81 (19.9%)
National Environmental Satellite, Data, and Information Service (NESDIS)	1,980.99	1,580.63	-400.36 (20.2%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

National Institute of Standards and Technology

President Trump's FY 2018 budget request includes \$725 million for the National Institute of Standards and Technology (NIST), which would be a decrease of \$229 million or 24 percent below the FY 2017 omnibus appropriations level.

- The NIST budget proposes across-the-board decreases to extramural programs, and would focus funding on core research programs. Priority research areas remain similar to prior years, with continued focus areas of advanced manufacturing, quantum science, biomanufacturing, resilience and the built environment, and the digital economy. However, many of these programs would see a reduction in funding.
- NIST would continue to fund its Manufacturing USA Institute (formerly the National Network of Manufacturing Innovation, or NNMI) and the coordinating activities of the Manufacturing USA network. However, the budget request proposes the elimination of the Hollings Manufacturing Extension Partnership (MEP) program.
- The FY 2017 omnibus provided flat funding for core NIST programs compared to FY 2016, including the Manufacturing USA program, MEP, and Scientific and Technical Research and Services, including forensic sciences. Additionally, the MEP program was reauthorized through legislation in early 2017. As such, Congress is unlikely to support drastic cuts to longstanding and recently reauthorized programs.

Proposed Reductions and Terminations

Within the Industrial Technology Services account, the most drastic cut in the request is proposed for the **Hollings Manufacturing Extension Partnership (MEP)**, which would provide no funding for centers in FY 2018. The request would only provide \$6 million for an “orderly shutdown of the program.” The Scientific and Technical Research and Services Account, which provides funding to NIST’s laboratory programs and many extramural programs, would see a 13 percent reduction as compared to the FY 2017 omnibus appropriations. This reduction consists of, in part, a \$1.2 million cut in grants to the extramural community of NIST’s **user facilities** and the elimination of the following initiatives: the **fire grants** program; the **Greenhouse Gas and Climate Measurements** program, including **Urban Dome**; the **NIST Consortium for Semiconductor and Future Computing Research; Forensic Science Program Management**, associated committees, and the Forensic Science Center of Excellence; and the **NIST Standards Services Curricula Development** program. The **Advanced Networks, Connected Systems, and Data Science** program proposes nearly half of its budget reduction to be achieved through the elimination of grants to universities. Additionally, **cybersecurity** would see a \$6 million reduction, accounting for nearly 9 percent of the reduction to the Laboratory Programs account.

Ongoing Areas of Interest

Manufacturing USA

Although the budget request would provide a decrease of \$10 million compared to FY 2017, NIST would still be able to support the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) at the planned level of \$70 million over five years and would continue to support the network of Manufacturing USA institutes at \$5 million. However, the topline reduction would prevent NIST from awarding a second institute.

Source: NIST's FY 2018 Budget Request can be viewed at
<http://www.osec.doc.gov/bmi/budget/FY18CBJ/FY%202018%20NIST-NTIS%20Cong%20Budget%20Request%20-%20508%20Compliant%20-%20FINAL.pdf>.

National Institute of Standards and Technology
(in thousands of \$)

	FY 2017* Enacted	FY 2018 Request	FY 2018 Request vs. FY 2017
NIST, Total	954,000[†]	725,000	-229,000 (24.0%)
Scientific and Technical Research and Services	690,000	600,000	-90,000 (13.0%)
Industrial Technology Services	155,000[†]	21,000	-134,000 (86.5%)
Manufacturing USA	25,000	15,000	-10,000 (40.0%)
Hollings Manufacturing Extension Partnership	130,000	6,000	-124,000 (95.4%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

[†]\$2 million is offset for prior year recoveries, and thus does not represent newly appropriated funding, resulting in \$153 million in direct appropriations for Industrial Technology Services and \$952 million in direct appropriations for NIST overall.

Economic Development Administration

President Trump's budget request proposes the elimination of the Economic Development Administration (EDA) in FY 2018. The request would provide \$30 million for an orderly closeout of agency functions.

- As expected following the president's budget blueprint released earlier this year, the FY 2018 budget request would eliminate EDA and devote funding for the agency to offset the costs of national security priorities. The budget would provide \$30 million to cover costs associated with closing out agency functions.
- The elimination of EDA would be a major blow to the federal government's support for programs to advance major public works projects and stimulate innovation-based economic growth.
- When the president's budget blueprint proposed eliminating EDA, Congress responded by increasing the agency's funding by \$15 million in FY 2017. Congress is unlikely to support any future attempts to eliminate the agency.

The elimination of EDA is consistent with the budget blueprint released by the Trump Administration on March 16, 2017, which stated that the programs funded by the agency have limited measurable impacts and are duplicative of some existing federal initiatives. Congress responded by increasing funding for EDA in the FY 2017 omnibus appropriations bill, providing support for several key programs of interest to universities. The funding from FY 2017 appropriations will allow the agency to fulfill grant obligations through September 30, 2017, but unless Congress acts again to provide funding and direction for EDA in the next appropriations cycle, the agency will likely operate as if it will be eliminated and could begin to wind down operations, decrease staff, and delay funding for major initiatives in FY 2018.

Source: The Department of Commerce's FY 2018 budget materials can be found at:
<http://www.osec.doc.gov/bmi/budget/FY18BIB/All508.pdf>.

Economic Development Administration

(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
EDA, total	276,000	30,000	-246,000 (90%)
Economic Development Assistance Programs	237,000	0	-237,000 (100%)
Public Works	100,000	0	-100,000 (100%)
Economic Adjustment Assistance Program	35,000	0	-35,000 (100%)
Regional Innovation Program	17,000	0	-17,000 (100%)
Partnership Planning	31,500	0	-31,500 (100%)
Technical Assistance Program	9,000	0	-9,000 (100%)
Research and Evaluation	1,500	0	-1,500 (100%)
Salaries and Expenses	39,000	30,000	-9,000 (23%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

Department of Defense

President Trump's FY 2018 budget request would provide \$82.7 billion for Research, Development, Test, and Evaluation (RDT&E) programs at the Department of Defense (DOD), including \$13.2 billion for Science and Technology (S&T) accounts. Compared to the FY 2017 enacted levels,¹ these amounts would represent an increase of 14.4 percent for RDT&E and a 5.8 percent decrease for S&T.

- The FY 2018 DOD budget request reflects President Trump's dedication to national security and increasing military readiness and modernization, as indicated throughout his presidential campaign. The budget request would break the defense spending caps set in the *Budget Control Act of 2011* by \$54 billion, with \$52 billion directed at DOD. The \$54 billion spending increase would be fully offset by corresponding cuts in non-defense discretionary spending programs.
- While DOD RDT&E would receive a 14.4 percent increase, all S&T accounts would see a decrease in funding, except for Defense Wide S&T, which would receive a 2.7 percent increase. Most of the increases in RDT&E would go toward Air Force prototyping, demonstration, and systems development accounts. The Army's S&T accounts would see the largest decreases with basic research (6.1), applied research (6.2), and advanced technology development (6.3) receiving 11.7 percent, 27.1 percent, and 21.3 percent cuts, respectively.
- The proposed \$52 billion above the current defense budget cap and corresponding cuts across non-defense discretionary programs are unlikely to find support in Congress, with both Republicans and Democrats protecting their preferred non-defense discretionary programs. Additionally, over the past several years, Congress has strongly supported DOD S&T accounts, but they will have to balance long-term research priorities with short-term modernization efforts.

Proposed Reductions and Terminations

While DOD would receive a \$52 billion increase, most DOD S&T accounts would receive decreases in FY 2018, emphasizing DOD priorities to modernize and enhance readiness.

Of interest to the university and research community, the Minerva Research Initiative, DOD's signature social science research program, would receive \$826,000 in FY 2018, a \$2.3 million cut from FY 2017. Funding for in-house laboratory efforts, which includes University Affiliated Research Centers (UARCs), the Army's Collaborative Technology Alliances (CTAs), and Collaborative Research Alliances (CRAs), would also decrease.

The proposed cut to Defense Health Research and Development, reflected in the chart below, is due to the president's omission of Congressionally-Directed Medical Research Program funding, which was included in the final FY 2017 omnibus appropriations bill. The president's omission of the funding request is standard practice, and Congress traditionally restores the funds, which go toward diseases and conditions affecting service members, veterans, and their families.

¹ The amounts used for FY 2017 enacted levels are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017. The president's DOD budget request uses the annualized levels of the continuing resolution that ended on April 28, 2017.

New Initiatives

The president proposes a base FY 2018 budget of \$574.5 billion and an additional \$64.6 billion in Overseas Contingency Operations (OCO) funding to support ongoing military operations against the Islamic State of Iraq and the Levant (ISIL), a continued presence in Afghanistan, and increased funding for the European Reassurance Initiative.

The DOD budget request is framed as part of a broader effort by the Administration to repair the readiness and current capabilities of the military. The Administration says the long-term success of expanding the military relies upon the consistency of future appropriations and providing relief from defense budget caps and sequester cuts. Long-term DOD goals related to readiness and modernization will be informed by a new National Defense Strategy the Department is currently developing, although no release date has been provided.

The budget request is focused on short-term readiness and modernization goals with proposed efforts including increasing troop levels; improving physical and network infrastructure; purchasing aircraft, ships, space launch vehicles, ground systems, and munitions; investing in missile defense systems; and enhancing training exercises. Almost the entirety of the Navy's budget request is focused on improving current near-time fighting capacity, although its basic research account would see a 5.1 percent increase.

Although the main theme of the budget request is improving near-term capabilities, the Administration indicates the need to invest in science and technology to maintain DOD's technical edge against adversaries. The Army would invest in future capabilities in the following areas:

- Modular Active Protective Systems
- Assured Position, Navigating, and Timing
- Robotics
- Autonomy
- Cybersecurity
- Active Protection
- Long-range Fires
- Advanced Information Technologies
- Advanced Materials, Advanced Manufacturing
- Directed Energy

The budget request also highlights the Army Rapid Capabilities Office, established in 2016, and its success in quickly acquiring and introducing needed equipment and services. The Rapid Capabilities Office is currently focused on introducing electronic warfare capabilities and next-generation power units by 2020. The effective integration of new technologies is supportive of the Administration's efforts to ensure a ready and technologically-advanced force.

The Air Force is investing in game-changing science and technology in the following areas:

- Autonomous Systems
- Unmanned Systems
- Hypersonics
- Directed Energy
- Nanotechnology

Additionally, the Air Force's Global Strike Command is focused on updating nuclear deterrence capabilities and modernizing intercontinental ballistic missiles, although nuclear weapons research would see less than a one percent decrease. The Air Force also continues to invest in space situational awareness capabilities, satellite communications, and space-based environmental monitoring.

Ongoing Areas of Interest

As authorized in the FY 2017 *National Defense Authorization Act* (NDAA), the budget request supports the separation of the Under Secretary of Defense for Acquisition, Technology, and Logistics (AT&L) into the Under Secretaries for Research and Engineering and for Acquisition and Sustainment. The reorganization is expected to be implemented by February 1, 2018. The Under Secretary for Research and Engineering will be the Chief Technology Officer and will be responsible for technology and innovation at DOD, while the Under Secretary of Acquisition and Sustainment will be responsible for procurement activities.

The budget request would also implement, as authorized in the FY 2017 NDAA, the elevation of U.S. Cyber Command to its own combatant command to streamline cyber space operations and enhance U.S. defensive and offensive cyber capabilities.

Additionally, the FY 2018 budget request would maintain DOD's role in advanced manufacturing through the National Network for Manufacturing Innovation (NNMI) and would provide \$115 million for eight DOD-led institutes.

Also of interest to the university and research community, the Defense Threat Reduction Agency (DTRA) would be funded at nearly \$470 million, a \$25.6 million increase over the FY 2017 level. The budget request would include \$37.2 million for basic research. The Defense Advanced Research Projects Agency (DARPA) would receive approximately \$3.2 million, a slight increase above FY 2017 levels.

Source: DOD's FY 2018 Budget Overview is available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/fy2018_Budget_Request_Overview_Book.pdf. The R-1 budget charts are available at http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2018/fy2018_Budget_Request.pdf.

Department of Defense*

(in thousands of \$)

	FY 2017 Enacted [†]	FY 2018 Request	FY 2018 Request vs. FY 2017
DOD, RDT&E	72,301,587	82,716,636	10,415,049 (14.4%)
DOD S&T, Total	14,011,229	13,199,177	-812,052 (5.8%)
6.1, Total	2,276,332	2,228,529	-47,803 (2.1%)
6.2, Total	5,296,175	4,973,465	-322,710 (6.1%)

6.3, Total	6,438,722	5,997,183	-441,539 (6.9%)
Army RDT&E	8,332,965	9,425,440	1,092,475 (13.1%)
Army S&T	3,067,282	2,390,181	-677,101 (22.1%)
Army 6.1	486,943	430,022	-56,921 (11.7%)
Army 6.2	1,220,274	889,182	-331,092 (27.1%)
Army 6.3	1,360,065	1,070,977	-289,088 (21.3%)
Navy RDT&E	17,214,530	17,675,035	460,505 (2.7%)
Navy S&T	2,367,184	2,168,322	-198,862 (8.4%)
Navy 6.1	562,970	595,901	32,931 (5.8%)
Navy 6.2	980,326	886,079	-94,247 (9.6%)
Navy 6.3	823,888	686,342	-137,546 (16.7%)
Air Force RDT&E	27,788,548	34,914,359	7,125,811 (25.6%)
Air Force S&T	2,678,381	2,583,390	-94,991 (3.5%)
Air Force 6.1	545,024	505,259	-39,765 (7.3%)
Air Force 6.2	1,325,652	1,284,114	-41,538 (3.1%)
Air Force 6.3	807,705	794,017	-13,688 (1.7%)
Defense Wide RDT&E	18,778,550	20,490,902	1,712,352 (9.1%)
Defense Wide S&T	5,898,382	6,057,284	158,902 (2.7%)
Defense Wide 6.1	681,395	697,347	15,952 (2.3%)
Defense Wide 6.2	1,769,923	1,914,090	144,167 (8.1%)
Defense Wide 6.3	3,447,064	3,445,847	-1,217 (0.04%)
Defense Health Research and Development	2,102,107	673,215	-1,428,892 (70.0%)

*Does not include Overseas Contingency Operations funding.

†The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

Department of Education

President Trump's FY 2018 budget request proposes \$59.0 billion in discretionary funding for the Department of Education (ED), which would be a decrease of approximately \$9 billion or 13.6 percent below the FY 2017 enacted level.

- The FY 2018 budget request supports year-round Pell Grants, which were recently reinstated in the FY 2017 omnibus appropriations bill. The proposal would draw \$3.9 billion from the Pell surplus and freeze the maximum individual Pell award at \$5,920, without direction to index the award to inflation.
- ED proposes the elimination of more than 30 discretionary programs for an annual savings of \$5.8 billion, stating at a public briefing that many of these programs could be funded at the state level with other funding streams. Of particular concern to the higher education community, Title VI International Education and Foreign Language Studies, Domestic and Overseas Programs, would be eliminated.
- The FY 2018 budget request would dramatically reduce funding for, or eliminate, several signature federal student aid programs including Federal Work Study and Supplemental Educational Opportunity Grants. The budget request proposes replacing the current income-driven repayment plans with a single plan, starting for new borrowers on July 1, 2018, which would increase the cap for repayment to 12.5 percent for borrowers repaid over 15 years for undergraduates and over 30 years for graduate borrowers.

New and Signature Initiatives

While the Department would sustain a net reduction in topline funding over FY 2017 enacted levels, the budget request proposes the largest increases for expanding **school choice and voucher programs**, including \$400 million for charter school expansion and voucher programs and \$1 billion for public school choice. Regarding the **Pell Grant**, the budget request supports year-round Pell Grants, which were recently reinstated in the FY 2017 omnibus appropriations bill.

Proposed Reductions and Terminations

As expected, the ED budget request expands upon and provides more specifics for many of the proposed cuts introduced in the skinny budget. The budget request proposes replacing current **income-driven repayment** plans with a single plan, starting for new loans originating on and after July 1, 2018, which would increase the cap for repayment to 12.5 percent for borrowers repaid over 15 years for undergraduates and over 30 years for graduate borrowers. While increasing the monthly percentage, the proposed plan would decrease the number of years undergraduate borrowers would pay back their loans and would increase the number of years for graduate borrowers. The budget request would also eliminate the **Public Service Loan Forgiveness program**, a program to incentivize graduates to work in public service in exchange for full federal loan forgiveness after 10 years. Representatives from the Department stated at their budget briefing that there is a grandfathering provision for individuals already enrolled in the program. The Administration has not made clear if this would be for all individuals currently in the pipeline for forgiveness, regardless of their current years of public service. The budget request would eliminate subsidized Stafford loans starting with loans originating on and after July 1, 2018.

Many of ED's signature student aid programs would be dramatically cut, and in many cases eliminated. As stated in the skinny budget, the **Federal Supplemental Educational Opportunity Grant (SEOG)** would be eliminated, stating the justification that it is duplicative of the Pell Grant program despite the fact that no new funding is requested for the Pell Grant. **Federal Work Study** would be cut nearly in half by reducing the program by \$489.7 million. **TRIO** programs and **Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP)** would be reduced by 14.9 percent and 35.5 percent, respectively. Title VI **International Education and Foreign Language Studies** would be eliminated. The **Graduate Assistance in Areas of National Need (GAANN)** program would be phased out and provided funding to only cover the remaining costs necessary to complete previously awarded grants. As expected, the **Perkins Loan Program** would be allocated no new funding, in keeping with stated plans to terminate the loan program beginning in FY 2018.

Ongoing Areas of Interest

Pell Grant

While the budget request would reduce funding for many student aid programs, the FY 2018 budget request would level fund the **Pell Grant** program at an estimated maximum individual award level (including mandatory and discretionary funding) of \$5,920, with no inflationary increases. The budget request supports recent congressional efforts to reinstate year-round Pell Grants, using existing mandatory funds to pay for the expansion to include summer study.

Institute of Education Sciences (IES)

The FY 2018 budget request would provide an increase for **IES** above the level agreed to in the FY 2017 omnibus and may indicate support for education research from the Administration. The level proposed is nearly level with FY 2016 enacted levels.

Source: ED's FY 2018 Budget Summary and Background Information can be viewed at <https://www2.ed.gov/about/overview/budget/budget18/summary/18summary.pdf>.

Additional information can be found at

<https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/edu.pdf>.

Department of Education

(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
ED, Total†	68,239,195	58,989,424	-9,249,771 (-13.6%)
Elementary and Secondary Education‡			
Title I Funding/Grants to LEAs	15,459,802	15,881,500	421,698 (2.7%)
Promise Neighborhoods	73,254	60,000	-13,254 (18.1%)
Innovation and Improvement‡			
Education Innovation and Research§	100,000	370,000	270,000 (270.0%)
Student Financial Assistance‡			

Pell Grant**	5,920	5,920	--
Perkins Loan Program	0	0	--
SEOG	733,130	0	-733,130 (100%)
Federal Work-Study	989,728	500,000	-489,728 (49.5%)
Higher Education*			
Title V Aid for Developing HSIs	107,795	107,590	-205 (0.2%)
Promoting Post-Baccalaureate Opportunities for Hispanic Americans	9,671	9,653	-18 (0.2%)
Title VI International Education and Foreign Language Studies	72,164	0	-72,164 (100.0%)
TRIO Programs	950,000	808,289	-141,711 (14.9%)
GEAR UP	339,754	219,000	-120,754 (35.5%)
GAANN	28,047	5,775	-22,272 (79.4%)
Institute of Education Sciences	605,267	616,839	11,572 (1.9%)
Research, Development and Dissemination	187,500	194,629	7,129 (3.8%)
Research in Special Education	54,000	\$53,897	-103 (0.2%)
Regional Education Laboratories	54,423	54,320	-103 (0.2%)
Statewide Longitudinal Data Systems	32,281	34,473	2,192 (6.8%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

†Unless otherwise noted, all funding in chart is discretionary.

‡Categories included for ease of reading the chart.

§Increase would be intended for research to test effectiveness of private school choice.

**The Pell Grant is listed as the total maximum grant award an individual could receive, including mandatory and discretionary funding. It is *not* listed in thousands of dollars.

Department of Energy

President Trump's FY 2018 budget request includes \$28 billion in discretionary funding for the Department of Energy (DOE), which would be a decrease of \$2.7 billion or 8.7 percent below the FY 2017 omnibus appropriations level.

- The FY 2018 budget request prioritizes defense spending over basic research and applied energy programs, consistent with President Trump's goal of boosting military spending. Defense programs, including nuclear weapons modernization and the environmental cleanup of nuclear weapons production, would see an increase of \$623 million or 3.1 percent above the FY 2017 enacted level, while basic research and applied energy programs would see a cut of \$3.5 billion or 30.8 percent below the FY 2017 enacted level.
- The FY 2018 budget request's three top priorities include nuclear weapons modernization (a proposed increase of \$993 million or 7.6 percent above the FY 2017 enacted level), exascale computing (a proposed increase of \$150 million or 41.8 percent above the FY 2017 enacted level), and nuclear waste management (\$120 million proposed to reopen Yucca mountain, establish interim storage facilities, and open a repository for defense waste). However, the budget request would eliminate the Advanced Research Project Agency-Energy (ARPA-E), cut the Office of Science by \$920 million or 17 percent, and reduce funding for renewable energy, energy efficiency, nuclear energy, fossil energy, and grid research and development projects by a total of \$2.3 billion or 56.5 percent. Most of the cuts are targeted at university grants and research and development projects, with funding prioritized for national laboratories.
- The Congress is unlikely to support the proposed funding reductions, especially to the Office of Science and ARPA-E, which share broad bipartisan support. Before the release of the budget request, key appropriators, including Senators Lamar Alexander (R-TN) and Dianne Feinstein (D-CA), Chairman and Ranking Member of the Senate Energy and Water Appropriations subcommittee, wrote letters to President Trump supporting DOE's basic and applied energy programs and expressing opposition to any major cuts.

Proposed Reductions and Terminations

The FY 2018 budget request proposes major reductions and terminations of basic research and applied energy projects across DOE that have the most significant impact on universities. For basic research, the main justification for major reductions is the need to cut non-defense discretionary programs to fund proposed increases in defense spending. Another explanation in the budget request is to prioritize fundamental research that is not tied to any specific energy technology or application. For applied energy research and development projects, the budget request would fund only early-stage research and development, which is defined as investments that would take five to 15 years before transformational technologies, materials, and processes would enter the marketplace. Another major shift in funding priorities would be to support national laboratories at the expense of universities. Historically, DOE has maintained a balance in research funding between the national laboratories and universities under the Office of Science and about 20 percent under applied energy programs.

Specifically, some of the most impactful proposed reductions and terminations include:

- Eliminating **ARPA-E**, with only \$20 million requested to wind down operations and shut down the office in FY 2019;

- An \$11 million reduction proposed for **Energy Frontier Research Centers (EFRCs)**; while the 32 current EFRCs will be recompeted in FY 2018, five fewer centers could be supported;
- No funding for all five **Energy Innovation Hubs** (solar fuels and energy storage under the Office of Science; critical materials and the FY 2017 congressionally-directed desalination hub under the Office of Energy Efficiency and Renewable Energy (EERE); and nuclear reactor modeling under the Office of Nuclear Energy);
- No funding for the five existing **Clean Energy Manufacturing Innovation Institutes** and no funding for a sixth institute funded by Congress in the FY 2017 omnibus appropriations bill; this contrasts with equivalent centers at the Department of Defense and National Institute of Standards and Technology, which would receive continued funding in FY 2018;
- Terminating one third or approximately 830 projects currently funded under EERE, most of which directly fund universities;
- Terminating all large-scale demonstration and pilot projects under the fossil energy program, specifically for carbon capture;
- Major reductions to the operations budgets of all Office of Science **user facilities**, which would result in the loss of an estimated 14,000 users a year, primarily from universities;
- The shutdown of two **nanoscale research centers** (at Brookhaven National Laboratory and the joint Sandia/Los Alamos National Laboratories facility) and operate the Stanford Synchrotron Radiation Lightsource at SLAC for only 3 months;
- Only \$40 million proposed for new **Bioenergy Research Centers**, which is \$35 million less than FY 2017 enacted levels and \$49 million less than the Office of Science would need to make up to 5 awards;
- **Slowdown of construction** for major Office of Science facilities, including the Advanced Photon Source upgrade at Argonne National Laboratory, the Long Baseline Neutrino Facility at Fermilab and the Sanford Underground Research Facility in South Dakota, the Facility for Rare Isotope Beams at Michigan State University, and the Dark Energy Spectroscopic Instrument;
- With the exception of **Advanced Scientific Computing Research**, there are major reductions in research funding for the five other Office of Science programs; the single biggest reduction for Office of Science basic research is for **Climate and Environmental Sciences**, renamed Earth and Environmental Systems Sciences, under the Office of Biological and Environmental Research—a proposed reduction of \$200 million, or 63 percent, with no funding for climate model development and validation; and
- Eliminating cross-cutting activities and dedicated funding for the **energy-water nexus, grid modernization, subsurface science and technology, supercritical carbon dioxide, and advanced materials**.

New Initiatives

The FY 2018 budget request does not propose any major reorganization of DOE but is instead focused on federal civilian workforce reductions, especially staff that manage projects that are targeted for elimination, such as ARPA-E, loan guarantees, and weatherization assistance. All of the basic and applied energy offices are targeted for staff reductions. For example, the budget request proposes eliminating approximately 133 positions at the Office of Science headquarters and field offices, which would be expected to save \$17 million, and reduce the EERE workforce by 30 percent, which would be expected to save approximately \$34 million. These reductions would have an impact on DOE's ability to develop, issue, review, award, and manage funding solicitations and initiate new projects. More

detailed plans on restructuring, cost cutting measures and improved efficiency are due at the end of June and will influence the FY 2019 budget request.

The budget request proposes only one new major initiative: \$16.5 million to fund between four and six **national lab-university-industry consortia on advanced manufacturing**. These would take the place of the Clean Energy Manufacturing Institutes, which would be terminated. Some potential research and development areas include “rare-earth materials; new approaches to sensors, modeling, communications, security and controls in manufacturing; next generation materials, structures and processes for chemical processes; discovery of new composite materials and structures; semiconductor (power and nanoscale) manufacturing materials and processes; clean water in manufacturing and new materials approaches to cost-effective use of materials resources in manufacturing.”²

Ongoing Areas of Interest

Exascale and Next Generation Computing

The highest research priority in the budget request is exascale computing. The budget request would provide \$508 million for the exascale initiative, an increase of \$150 million or 41.8 percent above the FY 2017 enacted level. This would include \$347 million within the Office of Science and \$161 million within the National Nuclear Security Administration (NNSA). Within the Office of Science, \$197 million would be to continue support for hardware, software, and applications development while \$150 million would be to begin planning, engineering, and site preparations for the deployment of the first exascale system at Argonne National Lab in 2021 and a second exascale system at Oak Ridge National Lab in 2022. This would be two years ahead of the original schedule.

The budget request also proposes continued investments and emphasis on quantum computing as the most promising post-Moore’s law technology for DOE applications. DOE would expand investments to support quantum test beds and algorithm and applications development for quantum computing systems. The budget request also includes \$10 million to continue supporting the Computational Science Graduate Fellowship program.

Science and R&D Programs at NNSA

The budget request proposes a \$186 million increase for NNSA’s research, development, test, and evaluation (RDT&E) account under Weapons Activities to support science based stockpile stewardship, an increase of 10 percent. Within this amount, an additional \$66 million would be to support exascale computing under the Advanced Simulation and Computing program, an additional \$10 million for the inertial confinement fusion program, and an additional \$3 million (for a total of \$53 million) for the academic alliance and partnership program.

The budget request proposes a cut of \$24 million for defense nuclear nonproliferation research and development compared to FY 2017 enacted levels (for a total of \$446 million). However, research priorities and major investments would continue in capabilities to detect, identify, locate, and characterize special nuclear material, low-yield nuclear explosions, and stand-off detection methods for foreign nuclear programs. Support would continue for the three university consortia for nuclear nonproliferation technologies, treaty compliance monitoring, and basic nuclear science and engineering.

² <https://energy.gov/sites/prod/files/2017/05/f34/FY2018BudgetVolume3.pdf>, Department of Energy FY 2018 Congressional Budget Request, Volume 3, p. 188.

Source: DOE's FY 2018 Budget Summary and Background Information can be viewed at <https://energy.gov/cfo/downloads/fy-2018-budget-justification>.

Department of Energy
(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
DOE, Total	30,746,009	28,041,597	-2,704,412 (8.7 %)
Science	5,392,000	4,472,516	-919,484 (17.05%)
Advanced Scientific Computing Research	647,000	722,010	75,010 (11.5%)
Basic Energy Sciences	1,871,000	1,554,500	-316,500 (16.9%)
Biological and Environmental Research	612,000	348,950	-263,050 (42.9%)
Fusion Energy Sciences	380,000	309,940	-70,060 (18.4%)
High Energy Physics	825,000	672,700	-152,300 (18.4%)
Nuclear Physics	622,000	502,700	-119,300 (19.1%)
Workforce Development for Teachers and Scientists	19,500	14,000	-5,500 (28.2%)
Science Laboratories Infrastructure	130,000	76,200	-53,800 (41.3%)
ARPA-E	306,000	20,000	-286,000 (93.4%)
EERE	2,090,200	636,149	-1,454,051 (69.5%)
Hydrogen and Fuel Cell Technologies	101,000	45,000	-56,000 (55.4%)
Bioenergy Technologies	205,000	56,600	-148,400 (72.3%)
Solar Energy Technologies	207,600	69,700	-137,900 (66.4%)
Wind Energy Technologies	90,000	31,700	-58,300 (64.7%)
Geothermal Technologies	69,500	12,500	-57,000 (-82%)
Water Power Technologies	84,000	20,400	-63,600 (75.7%)
Vehicle Technologies	306,959	82,000	-224,959 (73.2%)
Building Technologies	199,141	67,500	-131,641 (66.1%)
Advanced Manufacturing Technologies	257,600	82,000	-175,600 (68.1%)

Electricity Delivery and Energy Reliability	230,000	120,000	-110,000 (47.8%)
Nuclear Energy	1,016,616	703,000	-313,616 (30.8%)
Fossil Energy R&D	668,000	280,000	-388,000 (58%)
National Nuclear Security Administration	12,938,252	13,931,000	992,748 (7.6%)
Weapons Activities	9,245,567	10,239,344	993,777 (10.7%)
Defense Nuclear Non-proliferation	1,882,872	1,793,310	-89,562 (4.7%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

Department of Health and Human Services

National Institutes of Health

The president's FY 2018 budget request includes \$26.9 billion for the National Institutes of Health (NIH), which would be \$7.2 billion (21 percent) below the FY 2017 enacted level.

- The Administration's budget request proposes changes to the reimbursement of facilities and administrative (F&A) costs on NIH grants. Specifically, the FY 2018 budget proposes to cap F&A rates at 10 percent of the "total research" costs for the grant.
- The NIH budget request consolidates the Agency for Healthcare Research and Quality (AHRQ) within the NIH as the new National Institute for Research on Safety and Quality (NIRSQ). The budget request provides \$272 million for NIRSQ, a decrease of \$52 million from the FY 2017 enacted level. NIRSQ's proposed FY 2018 funding includes \$5 million for a comprehensive review of health services and translational research across NIH.
- The Administration's proposed budget for NIH would eliminate the Fogarty International Center (FIC), directing \$25 million in the NIH Office of the Director to coordinate global health research across the agency.

Proposed Reductions and Terminations

As noted in the "skinny budget" released in March, the budget request proposes cutting the NIH budget by \$5.8 billion below the level included in the FY 2017 continuing resolution. However, in the FY 2017 omnibus passed in early May, NIH received a \$2 billion increase, bringing the agency to \$34.1 billion in FY 2017. Hence, the proposed budget request would actually represent a decrease of \$7.2 billion, a 21 percent cut, to the agency. The cut would be achieved by capping F&A (indirect) costs, eliminating the Fogarty International Center (FIC), reducing support for intramural research, and awarding 1,946 fewer grants in FY 2018. The budget request specifies that in place of the FIC, approximately \$25 million within the Office of the Director would be directed to coordinating global health research across NIH.

While few details are provided on the changes to F&A costs, the HHS Budget in Brief states that reimbursement of indirect costs for NIH grants "will be capped as a percentage of total research, in order to better target available funding toward high priority research." Federal research requirements would also be streamlined to reduce grantee burden. The Major Savings and Reforms document states that the budget request proposes "an indirect cost rate for NIH grants that will be capped at 10 percent of total research. This approach would be applied to all types of grant with a rate higher than 10 percent currently and will achieve significant savings in 2018." The document also notes that this would bring NIH's rate more in line with the rate used by private foundations, such as the Gates Foundation.

Ongoing Areas of Interest

The budget request provides \$496 million for the four Innovation Projects specified in the *21st Century Cures Act*, which was enacted into law in December. Specifically, the budget request provides \$86 million for the BRAIN Initiative, \$100 million for the Precision Medicine Initiative (PMI), \$300 million for the Cancer Moonshot Initiative, and \$10 million for regenerative medicine. These amounts are consistent with the FY 2018 funding levels authorized in the *21st Century Cures Act*.

Additionally, the budget request highlights NIH efforts to enhance stewardship, noting that the nation's leadership in biomedical research also depends on "how science is funded, performed, and managed." It notes that NIH is encouraging good stewardship across all levels, including streamlining administrative practices, supporting new and early investigators, and cultivating the biomedical workforce. The budget also states that a key way NIH is strengthening stewardship is by enhancing "reproducibility of scientific research through increased rigor and reproducibility in reporting." It specifies that future efforts include extending NIH's rigor and reproducibility policy to additional grants, collaborating with scientific journal editors to improve rigor and reproducibility in publications, and improving data sharing and accessibility.

Related to the transfer of AHRQ to NIH, the budget request notes that the creation of NIRSQ would "simplify administrative responsibilities for consolidating and continuing former AHRQ programs, and maintain an entity that can serve as a center of excellence for improving the quality and safety of health care services." AHRQ activities that will continue within NIRSQ include the Medical Expenditure Panel Survey, administrative support for the U.S. Preventive Services Task Force, and support for investigator-initiated research and opioid treatment research grants. Citing overlapping activities, the budget request would eliminate funding for dissemination activities of the health information technology portfolio as it could be funded by other programs.

Sources:

HHS Budget in Brief, pages 36-42:

<https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/msar.pdf>

Major Savings and Reforms, page 43 (source for F&A 10% cap):

<https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/msar.pdf>

National Institutes of Health

(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
NIH, Total	34,084,000	26,920,000	-7,164,000 (21.0%)
National Cancer Institute (NCI)	5,389,329	4,474,000	-915,329 (17.0%)
National Heart, Lung, and Blood Institute (NHLBI)	3,206,589	2,535,000	-671,589 (20.9%)
National Institute of Dental and Craniofacial Research (NIDCR)	425,751	321,000	-104,751 (24.9%)
National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)	2,020,595	1,600,000	-420,595 (20.8%)
National Institute of Neurological Disorders and Stroke (NINDS)	1,783,654	1,356,000	-427,654 (24.0%)
National Institute of Allergy and Infectious Diseases (NIAID)	4,906,638	3,783,000	-1,123,638 (22.9%)
National Institute of General Medical Sciences (NIGMS)	2,650,838	2,186,000	-464,838 (17.5%)
Eunice Kennedy Shriver National Institute of Child	1,380,295	1,032,000	-348,295 (25.2%)

Health and Human Development (NICHD)			
National Eye Institute	732,618	555,000	-177,618 (24.2%)
National Institute of Environmental Health Sciences (NIEHS)	714,261	594,000	-120,261 (16.8%)
National Institute on Aging (NIA)	2,048,610	1,304,000	-744,610 (36.3%)
National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)	557,851	418,000	-139,851 (25.1%)
National Institute on Deafness and Other Communications Disorders (NIDCD)	436,875	326,000	-110,875 (25.4%)
National Institute of Mental Health (NIMH)	1,601,931	1,245,000	-356,931 (22.3%)
National Institute on Drug Abuse (NIDA)	1,090,853	865,000	-225,853 (20.7%)
National Institute on Alcohol Abuse and Alcoholism (NIAAA)	483,363	361,000	-122,363 (25.3%)
National Institute on Nursing Research (NINR)	150,273	114,000	-36,273 (24.1%)
National Human Genome Research Institute (NHGRI)	528,566	400,000	-128,566 (24.3%)
National Institute of Biomedical Imaging and Bioengineering (NIBIB)	357,080	283,000	-74,080 (20.7%)
National Institute on Minority Health and Health Disparities (NIMHD)	289,069	215,000	-74,069 (25.6%)
National Center for Complementary and Integrative Health (NCCIH)	134,689	102,000	-32,689 (24.3%)
National Center for Advancing Translational Sciences (NCATS)	705,903	557,000	-148,903 (21.1%)
John E. Fogarty International Center (FIC)	72,213	0	-72,213 (100%)
National Library of Medicine (NLM)	407,510	373,000	-34,510 (8.5%)
Office of the Director (OD)	1,665,183	1,452,000	-213,183 (12.8%)
Building Facilities	128,863	99,000	-29,863 (23.2%)
National Institute for Research on Safety and Quality [†]		379	(N/A)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

[†]The National Institute for Research on Safety and Quality was formerly the Agency for Healthcare Research and Quality (AHRQ).

Department of Health and Human Services (Other)

The FY 2018 budget request includes \$69 billion in discretionary funding for the Department of Health and Human Services (HHS), which is \$92 billion below the FY 2017 enacted level in the omnibus. The budget request also includes \$1.046 billion in mandatory funding for HHS.

- The president's FY 2018 budget request would invest in programs across HHS that the Administration feels provides direct services to patients, proposing steep cuts to programs that it deems do not meet this criterion. In addition, the president's budget request continues to focus on repealing and replacing the *Patient Protection and Affordable Care Act (ACA)* by assuming savings contained in the *American Health Care Act (AHCA)*, which passed the House but will be rewritten in the Senate.
- Not included in this budget request are the cuts to Graduate Medical Education (GME) programs that were routinely included in the budget requests under the previous Administration. The FY 2018 budget request also does not target indirect medical education, which we have seen in previous budget requests. In addition, the budget request would slightly increase funding for both Children's Hospital Graduate Medical Education and Teaching Health Centers Graduate Education, but significantly reduce funding for Title VII health professions programs, which support primary care and training, as well as Title VIII Nursing Workforce Development Programs at the Health Resources and Services Administration (HRSA).
- The FY 2018 budget proposal would reduce funding for many HHS safety-net programs, such as the Medicaid program, Low Income Home Energy Assistance Program, Community Services Block Grant, and Social Services Block Grant. The budget request would extend the Children's Health Insurance Program (CHIP) through FY 2019, but end the 23 percentage points increase to the Enhanced Federal Medical Assistance Percentages (FMAP), which was authorized in the ACA, and would cap the FMAP at 250 percent of the Federal Poverty Level.
- There is bipartisan support for many of the discretionary programs that are proposed for elimination, especially many of the workforce programs. Members, including Senate Labor-HHS-Education Appropriations Subcommittee Chairman Roy Blunt (R-MO), have noted the budget request is simply the first step in the FY 2018 appropriations process.

Proposed Reductions and Terminations

Title VII Health Professions and Title VIII Nursing Workforce Development at HRSA

The president's FY 2018 budget request would significantly reduce funding for Title VII health professions programs and Title VIII Nursing Workforce Development Programs at HRSA. The budget request would provide \$88 million for the programs in FY 2018, which is about \$450 million below the FY 2017 enacted level. Most of the Title VII and VIII programs would be eliminated including Scholarships for Disadvantaged Students, the Area Health Education Centers program, and programs that support a wide variety of health professions including primary care and oral health.

Funding for the Behavioral Health Workforce Education and Training grant, which was recently moved from being administered by the Substance Abuse and Mental Health Services Administration (SAMHSA) to HRSA, would also be eliminated. According to budget request documents, the Administration claims "there is little evidence that these programs significantly improve the nation's health workforce. For example, less than half of the physician and physician assistant graduates from the Primary Care Training and Enhancement Program practice in medically underserved areas."

The president's budget request would continue to provide funding for National Health Service Corps (NHSC) and the NURSE Corps Scholarship and Loan Repayment Program, focusing on scholarship and loan repayment programs to get providers to underserved areas. These are the only two Title VII and VIII programs that would survive elimination in the budget request. As mentioned above, Title VII and VIII programs have bipartisan support in Congress and are unlikely to be eliminated.

Agency for Healthcare Research and Quality (AHRQ)

The president's budget request would eliminate AHRQ as a stand-alone agency, and instead would move its activities to a newly created NIH institute named the National Institute for Research on Safety and Quality (NIRSQ). The budget would provide \$272 million for activities at NIRSQ, where activities like investigator-initiated grants, researcher training grants, and activities of the U.S. Preventive Services Task Force would continue. Senators recently sent a letter to appropriators requesting that AHRQ funding be maintained, and signatories to that letter included several Republicans, such as Richard Burr (R-NC) and James Inhofe (R-OK).

National Institute for Occupational Safety and Health (NIOSH) and Education and Research Centers (ERCs)

According to the Centers for Disease Control and Prevention's (CDC) budget justification, NIOSH would continue research on worker illness and injury, but would not continue to fund state and academic partners in 2018 for conducting, translating, or evaluating research. As a result, the president's budget request would eliminate funding for ERCs within NIOSH. ERCs have consistently been slated for cuts or elimination in previous budgets but Congress has maintained level funding.

Prevention Research Centers (PRC)

The budget request would eliminate funding for the PRC program stating that CDC's chronic disease portfolio would continue to focus on implementation of the most effective existing interventions. This program has previously been proposed for elimination in budget requests, but Congress has continued to fund it through annual appropriations.

Chronic Disease Prevention and Promotion

The president's budget request would reduce funding for Chronic Disease Prevention and Promotion at the CDC by about \$164 million to support funding for the new America's Health Block Grant Program, which would integrate current disease-based activities. More on the block grant can be viewed in the next section.

Now is the Time Initiative

The President's budget proposal would eliminate funding for SAMHSA's Project Aware, which under the former Administration's *Now is the Time Initiative*, focused on training and connecting youth with mental health and substance use disorder services. This includes funding for Mental Health First Aid.

New Initiatives

Medical Liability Reform

The Republican issue of medical liability reform as a healthcare cost saver, which was absent from the Obama Administration's budget requests, reemerges in this budget request. The budget request proposes several medical liability reforms, such as capping noneconomic damages at \$250,000, which would be indexed for inflation, and providing a three-year statute of limitations.

America's Health Block Grant Program

The budget request proposes a new \$500 million block grant to states called the America's Health Block Grant Program. According to CDC's budget justification the new block grant "will provide flexibility in FY 2018 for each state to implement specific interventions that address leading causes of death and disability, including interventions to spur improvements in physical activity and the nutrition of children and adolescents, and other leading causes of death such as heart disease."³ The new block grant has drawn sharp criticism from the former CDC Director Tom Frieden, who in response to the most recent budget expressed concern that this change eliminates the opportunity to fund based on need, impact, or effectiveness.

Assertive Community Treatment (ACT) and Serious Mental Illness

The 21st Century Cures Act created a \$5 million grant program to establish Assertive Community Treatment programs focused on adults with serious mental illness. The president's budget request would provide \$5 million for about seven grants to entities including states, counties, cities, tribes and tribal organizations, mental health systems, health care facilities and entities to establish, maintain or expand ACT programs. According to the budget justification, special consideration would be given to applicants that serve adults with serious mental illness who are high utilizers of health and social services including homeless and justice involved populations.⁴

The HHS Budget in Brief notes the targeting of resources in high-priority areas such as serious mental illness, suicide prevention, homelessness prevention, and children's mental health. Upon review of some of the programs at SAMHSA, which support these activities, it appears that the budget request would either stay relatively level funded, or slightly reduce funding for some of these areas. For example, funding for the National Strategy for Suicide Prevention would be reduced from the FY 2017 enacted level of \$11 million to \$1.9 million because the budget request does not include the \$9 million increase from the omnibus for the program in FY 2017. The Garrett Lee Smith Youth Suicide Prevention Grants to States would receive a slight decrease of about \$45,000.

Ongoing Areas of Interest

Medicaid and CHIP

The president's budget request would assume the savings from Medicaid provisions in the AHCA and claims an additional \$610 billion in additional cuts over 10 years. Overall, the budget request assumes \$627 billion in savings in the budget by reforming Medicaid and changes to CHIP. These reforms include the savings claimed by implementing a state choice between a per-capita cap or a block grant for the Medicaid program in 2020, as included in the AHCA. Additional savings partly come from changing the per-capita cap formula in 2020. The budget request would extend CHIP through FY 2019, but end the 23 percentage points increase to the Enhanced Federal Medical Assistance Percentages (FMAP), which was authorized in the ACA and began in FY 2015. The budget request would also cap the FMAP at 250

³ <https://www.cdc.gov/budget/documents/fy2018/fy-2018-cdc-congressional-justification.pdf>, Department of Health and Human Services, Fiscal Year Justification of Estimates for Appropriations Committees, Centers for Disease Control and Prevention, 2017 (pg. 9)

⁴ <https://www.samhsa.gov/sites/default/files/samhsa-fy-2018-congressional-justification.pdf>, Department of Health and Human Services, Fiscal Year Justification of Estimates for Appropriations Committees, Substance Abuse and Services Administration (SAMHSA), (pg 87-88)

percent of the Federal Poverty Level. The budget also proposes eliminating the maintenance of effort requirement for CHIP that states maintain their eligibility levels through 2019.

Combating the Opioid Epidemic

The budget request would also provide support for programs aimed at combatting the opioid epidemic. SAMHSA's State Targeted Response (STR) to Opioid Crisis Grants program would receive \$500 million in new funding for FY 2018, as authorized under the *21st Century Cures Act*. The STR program, which also received \$500 million in initial funding in FY 2017, would provide block grants to states to help create and implement opioid abuse prevention, treatment, and recovery services. The budget request would also provide support to SAMHSA for programs newly authorized under the *Comprehensive Addiction and Recovery Act* (CARA), including \$17 million in funding to help train first responders on the use of overdose reversal drugs. Additionally, CDC would continue to receive approximately \$75 million in FY 2018, which is the same as the FY 2017 enacted level, for programs aimed at developing and identifying best clinical practices in opioid prescribing. The budget also would preserve the Office of National Drug Control Policy, despite rumors that the president would eliminate this office.

Source: HHS FY 2018 Budget Summary and Background Information can be viewed at <https://www.hhs.gov/sites/default/files/fy2018-budget-in-brief.pdf>. The HHS Budget justifications to Congress can be viewed at <https://www.hhs.gov/about/budget/index.html?language=es>.

Department of Health and Human Services (Other)*

(in millions of \$)

	FY 2017 Enacted [†]	FY 2018 Request	FY 2018 Request vs. FY 2017
Health Resources and Services Administration (HRSA)	6,461	5,548	913 (14.1%)
Title VII	309	5	304 (98.4%)
Title VIII	229	83	146 (63.8%)
Substance Abuse and Mental Health Services Administration (SAMHSA)	3,765	3,771	6 (0.1%)
Mental Health Services	1,181	912	269 (23%)
Substance Use Treatment	2,131	2,696	565 (26.5%)
Substance Abuse Prevention	223	150	73 (32.7%)
Agency for Healthcare Research and Quality (AHRQ)[‡]	324	N/A	N/A
Centers for Disease Control and Prevention (CDC)[§]	7,255	5,054	2201 (30%)
Chronic Disease prevention and Health Promotion		952	163 (14.6%)
National Institute for Occupational Safety and Health (NIOSH)	335	200	135 (40.2%)

Environmental Health	180	157	23 (12.8%)
Indian Health Service (IHS)	6,148	6,091	57 (1%)
Administration on Community Living (ACL)	1,993	1,851	142 (7.1%)
Administration on Aging			
National Institute on Disability, Independent Living and Rehabilitation Research	104	95	9 (8.6%)
Office for the National Coordinator for Health IT	60	38	22 (36.6%)
Administration for Children and Families (ACF)	33,974	31,700	2,274 (6.6%)

*The chart reflects the total program level funding, combining discretionary and mandatory funding.

†The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

‡AHRQ's funding would be moved to NIH.

§The CDC funding levels do not include the Agency for Toxic Substances and Disease Registry (ATSDR).

Food and Drug Administration

The president's FY 2018 budget request would provide \$1.89 billion in discretionary funding for the Food and Drug Administration (FDA), a decrease of \$871 million or 32 percent below the FY 2017 enacted level.

- The budget request would provide \$60 million for the FDA Innovation Account, which was authorized in the *21st Century Cures Act* enacted into law in December 2016.
- The budget request would provide sustained support for the four existing Centers of Excellence in Regulatory Science and Innovation (CERSI).
- The FY 2018 budget request would double user fees for product reviews, a controversial addition as these fees have recently been negotiated and would present a challenge to reopen for renegotiation.

Proposed Reductions

As suggested by the Administration's budget blueprint released in March 2017, the budget request proposes an overall cut of \$871 million to discretionary funding for FDA, which would be offset by the increase in user fees. Notably, the budget requests an \$83 million decrease in food safety programs, a \$7 million cut to the animal drug and feed program that monitors and approves the safety of those products, and a \$3 million cut to the National Center for Toxicological Research.

The president's budget request also proposes to double the user fees for product reviews. Under current statute, approximately 60 percent of user fees are paid by industry to cover FDA premarket review; this proposal would increase that to 100 percent. This doubling of user fees would correlate with a cut to the taxpayer funding of these reviews, which is a contentious issue as many members of Congress and the stakeholder community feel that if taxpayers benefit from FDA-approved drugs, they should bear some of the cost of the review process. Furthermore, the FDA negotiates user fee agreements with drug and device manufacturers and as the two-year negotiations concluded earlier this year, they cannot easily be reopened for renegotiation.

New and Ongoing Areas of Interest

The budget request does explicitly state its support for using the \$60 million authorized in the *21st Century Cures Act (Cures)* to support medical product development activities regulated by FDA through the FDA Innovation Account. The general objective is to increase and accelerate innovation while reducing regulatory burden, and would also include support for the Oncology Center of Excellence.

Combatting antibiotic resistance remains another priority area for FDA. While no explicit funds are set aside in the budget request to support these efforts, the budget request highlights the Limited Population Pathway for Antibacterial and Antifungal Drugs (LPAD), one mechanism established through *Cures* to help bring new drugs to treat niche microbial populations to market.

Additionally, the budget request reinforces FDA's commitment to addressing the opioid epidemic, particularly by helping approve alternative painkillers. The new Commissioner has stressed that FDA needs to be a partner in the cross-agency efforts to address this public health crisis. The budget request also states that it would continue to support the four existing Centers of Excellence in Regulatory

Science and Innovation (CERSI) and would boost that budget by \$2 million to support their ongoing research. The budget request also reiterates that the FDA will not accept applications for any product that involves human embryo genome editing.

Source: The Food and Drug Administration's FY 2018 budget materials can be found at <https://www.fda.gov/downloads/AboutFDA/ReportsManualsForms/Reports/BudgetReports/UCM559923.pdf>.

Food and Drug Administration
(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
FDA, Total	4,655,089	5,116,121	461,032 (9.9%)
FDA, Discretionary	2,759,378	1,888,489	-870,889 (31.6%)

*The amounts shown for FY 2017 Enacted are taken from the *Consolidated Appropriations Act, 2017* (P.L. 115-31), which reflect the most current spending levels for FY 2017.

Department of Homeland Security

President Trump's FY 2018 budget request includes \$51.5 billion in net discretionary funding for the Department of Homeland Security (DHS), which would be an increase of 4.4 percent over the FY 2017 enacted level.

- The DHS budget request would shift significant funding and resources toward addressing the Trump Administration's priorities of border security, enforcement of immigration laws, and cybersecurity programs.
- The DHS Science and Technology (S&T) Directorate, including the Office of University Programs (OUP), would face a significant funding reduction, whereas U.S. Customs and Border Protection (CBP), Immigration and Customs Enforcement (ICE), and U.S. Citizenship and Immigration Services (USCIS) would receive major increases.
- While the budget request supports a number of congressional priorities like cybersecurity, funding included for the construction of a wall on the nation's southern border has been viewed as a non-starter for congressional Democrats that could derail any chances of the measure being adopted as written.

New Initiatives

The budget request proposes increased investments in the Administration's priority areas of securing U.S. land and maritime borders and administering and enforcing immigration laws, including the staffing and training of additional immigration and law enforcement officers, as well as border patrol agents. Although funding for DHS would increase overall, the budget request's significant investments in border security would divert funds from several other directorates to offset the costs.

The budget request includes \$1.6 billion for wall construction along targeted areas of the nation's southern border. Although Democrats in Congress have been generally supportive of increased funding for border security, including sensor technologies and unmanned aircraft to monitor border crossings, the construction of a physical wall has been considered a potential "poison pill" that could trigger a funding showdown between the Administration and leaders of the minority party as FY 2018 appropriations discussions progress.

Proposed Reductions and Terminations

Science and Technology Directorate

Funding for the Science and Technology (S&T) Directorate would be reduced nearly 20 percent compared to the FY 2017 level. Within the S&T Directorate, sizable cuts are proposed for DHS laboratory facilities as well as the Research, Development, and Innovation (RD&I) account, which funds research and development (R&D) activities to provide technologies for the various needs of DHS components.

Within RD&I, the budget request would prioritize "projects to support Administration and Secretarial immigration and border security priorities."⁵ The budget request would cut R&D across all six thrust

⁵ <https://www.dhs.gov/sites/default/files/publications/DHS%20FY18%20CJ%20VOL%20IV.PDF>, Congressional Budget Justification FY 2018 – Volume IV, Department of Homeland Security, 2017 (pg. 320).

areas, including: Apex; Border Security; Chemical, Biological, and Explosive Defense Research and Development; Counter Terrorist; Cyber Security/Information Analysis; and First Responder/Disaster Resilience.

Office of University Programs

Similar to previous presidential budget proposals, the Administration has proposed cuts to the Office of University Programs (OUP), which funds the Centers of Excellence (COE) and Minority-Serving Institutions program. To accomplish this, OUP would eliminate the current COE focused on Maritime Security and not move forward with funding two new COEs, the Cross-Border Threat Screening and Supply Chain Defense COE, which is currently being competed, and the Counterterrorism COE, a topic area which had expected to be re-competed in FY 2018 when the project period for the current center sunsets. DHS does anticipate funding a new COE on Homeland Security Quantitative Analysis, which is currently under proposal review. The Minority-Serving Institutions program would remain flat-funded.

While previous Administrations' budget proposals have also proposed cuts to the S&T Directorate, particularly OUP, Congress has recognized the importance of these programs and rejected many of the proposed cuts.

Federal Emergency Management Agency

Within the Federal Emergency Management Agency (FEMA), the budget request would significantly reduce funding for state and local grant programs, including the Pre-Disaster Mitigation Grant Program and the State Homeland Security Grant Program, which among other things, provide support for universities to partner with local communities to develop regional hazard mitigation plans and address various statewide homeland security priorities. When a similar reduction to these programs was proposed in the FY 2018 budget blueprint, Congress responded by restoring funding for the initiatives in the FY 2017 omnibus appropriations bill.

Ongoing Areas of Interest

Similar to President Trump's budget blueprint, released in March 2017, DHS has made cybersecurity a major priority in the full budget request. DHS would largely prioritize investments in internal cybersecurity operations and improvements, while reducing funding for ongoing cybersecurity research, development, and education programs at the agency. This is consistent with remarks by Administration officials, who have advocated for enhanced cyber capabilities without mention of what, if any, investments would be made in the research and development of new technologies. Similarly, in the congressional reports that accompanied the FY 2017 omnibus appropriations bill, cybersecurity was mentioned as a topic of interest for research programs at DHS, but a bulk of the new investments were directed toward enhancing internal operational support to better allow the agency to protect government domains and modernize emergency communications.

Source: The DHS FY 2018 Budget in Brief can be viewed at:

<https://www.dhs.gov/sites/default/files/publications/DHS%20FY18%20BIB%20Final.pdf>

The DHS Congressional Budget Justification for FY 2018 can be viewed at:

<https://www.dhs.gov/publication/congressional-budget-justification-fy-2018>.

Department of Homeland Security
(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
DHS, Total†	49,283,692	51,454,433	2,170,741 (4.4%)
Science and Technology Directorate	781,746	627,324	-154,422 (19.8%)
University Programs	40,500	29,724	-10,776 (26.6%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

Department of Justice

The president's FY 2018 budget request would include \$27.7 billion in discretionary funding for the Department of Justice (DOJ), \$1.2 billion or 4.2 percent below the FY 2017 enacted level.

- The budget request would leverage DOJ to address perceived threats to American security identified by the Trump Administration, as significant resources would be shifted toward combatting illegal immigration, violent crime, and drug trafficking. The budget request also contains a controversial provision that would increase federal authority to require local police to comply with federal immigration laws.
- The budget request would provide substantial funding increases for the hiring of federal attorneys and border security forces to carry out the president's enhanced immigration proposals, as well as significant support for federal law enforcement operations, including the Federal Bureau of Investigation (FBI), the U.S. Marshals Service, and the Drug Enforcement Administration (DEA). The budget would divert funding from prison construction, existing immigration detention activities, and various grant programs, including research on the feasibility of body-worn cameras by local police officers.
- The FY 2018 DOJ budget request provides support for immigration priorities embraced by the Republican-controlled Congress without funding for the construction of a border wall, which alienates Democrats. However, the proposed DOJ bill will likely be threatened by language that would greatly expand existing statute to crack down on "sanctuary cities" and force local law enforcement agencies to comply with immigration officials or risk losing funding. The broad scope of this provision could be a non-starter with Democrats in Congress.

New and Signature Initiatives

While funding for DOJ would decrease as a whole, the budget request proposes significant funding increases for the prosecution, transfer, and detention of undocumented immigrants, as well as staffing and equipment for federal law enforcement agencies and programs to combat the opioid epidemic. The budget request would also prioritize programs to reduce violent crime and illegal drug distribution, and unlike budget requests released by the previous Administration, the proposal expresses less explicit support for the reexamination of pervasive issues facing the criminal justice system, such as addiction services and sentencing laws.

Research, Evaluation, and Statistics

The budget request would provide \$111 million for Research, Evaluation, and Statistics (RES) within DOJ's Office of Justice Programs (OJP), which is a 24.7 percent increase over FY 2017, but below the FY 2016 level of \$116 million. In addition, OJP would provide \$70 million for Project Safe Neighborhoods (PSN), a block grant program through the U.S. Attorney Office in each federal district to promote partnerships between law enforcement and community leaders to implement "gang violence and gun crime enforcement; violence prevention and intervention initiatives; and community outreach" at the local level.

Of particular importance, the DOJ budget request contains a clause that would greatly expand federal provisions to compel local law enforcement agencies to provide detailed information on detained immigrants and forbid local entities from enacting any policies that would preclude cooperation with federal immigration authorities. The language also notes that DOJ and the Department of Homeland

Security can make grants or cooperative agreements contingent on a region's compliance with the enhanced provision. This is a direct attack on "sanctuary cities," which are municipalities throughout the country that refuse to cooperate with certain federal immigration provisions that have long been targeted by the Trump Administration. Sanctuary cities have been largely protected by Democrats in Congress and it is uncertain whether some Republicans or national law enforcement associations would be in favor of the bill as written, given its vast expansion of federal oversight.

Proposed Reductions and Terminations

National Institute of Justice

Within the RES portfolio is the National Institute of Justice (NIJ), the program that provides support for several of the agency's key research initiatives. NIJ would see a \$6.5 million decrease in funding in FY 2018 for a total of \$33 million. Among other priorities for NIJ, the budget request proposes maintaining support for social science research addressing topics including human trafficking, evaluation of anti-gang programs, policing, crime and justice, violence against women, elder abuse, and demonstration field experiments in reentry and probation. Additional funding would be provided for programs that examine the roots of domestic radicalization and innovative intervention strategies. Programs examining comprehensive school safety strategies would be eliminated under the request.

Source: The Department of Justice's FY 2018 budget materials can be found at <https://www.justice.gov/doj/fy-2018-budget-and-performance-summary>.

Department of Justice

(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
DOJ, total	28,947,497	27,731,697	1,215,800 (4.2%)
Research, Evaluation, and Statistics	89,000	111,000	22,000 (24.7%)
National Institute of Justice	39,500	33,000	6,500 (16.5%)
Juvenile Justice Programs	247,000	229,500	17,500 (7.1%)
Community Oriented Policing Services	221,500	218,000	3,500 (1.6%)
Office of Violence Against Women	481,500	480,000	1,500 (0.3%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

Department of Transportation

President Trump's FY 2018 budget request proposes \$76 billion in mandatory and discretionary funding for the Department of Transportation (DOT), which would be a decrease of \$212.7 million or less than one percent below the FY 2017 enacted level.

- In a factsheet submitted by the White House Office of Management and Budget, the Trump Administration provided more information on its plans for its \$1 trillion infrastructure investment, although details were scant.
- Much of DOT's surface transportation research is provided by mandatory funding established in the *Fixing America's Surface Transportation Act (FAST Act)*.
- The FY 2018 budget request proposes shifting control of the Federal Aviation Administration's (FAA) Air Traffic Control (ATC) services to a non-profit, non-governmental organization and would eliminate the politically popular Transportation Investment Generating Economic Recovery (TIGER) program.
- It is unlikely, however, that these changes will be well received by Congress as the TIGER program has received significant bipartisan support and the privatization of ATC has been a point of contention among Members of relevant committees.

New Initiatives

Infrastructure modernization remains a priority for the Administration in FY 2018. The *2018 Budget: Infrastructure Initiative* fact sheet released alongside the formal FY 2018 request explains key principles guiding the proposed \$1 trillion infrastructure package. It also outlines additional proposals that were not included in the budget blueprint or the larger FY 2018 request.

As anticipated, the Administration has placed a significant focus on public-private partnerships, reducing the environmental review process, and encouraging greater investments in infrastructure at the state and local level.

The Administration is also developing proposals for a Federal Capital Revolving Fund and Partnership Grants for federal assets, which are intended to encourage private-sector investment and remedy underinvestment in federally-owned civilian capital assets. While the description of how this mechanism would operate is unclear, it would appear to be a proposal for establishment of an infrastructure bank, albeit under a different name.

Ongoing Areas of Interest

Funding for key surface transportation research programs within the Federal Highway Administration (FHWA) would be flat, as they receive mandatory funding from the Highway Trust Fund established by the *FAST Act*. As expected, no federal funds were requested for the unfunded Beyond Traffic Innovation Centers or the Automated Vehicle Proving Grounds awarded last year.

Research, Engineering and Development within FAA would be funded at a level of \$150 million, a 15 percent cut from FY 2017 enacted levels. Additionally, the President requests \$39.1 million for research programs within the Federal Railroad Administration (FRA), a marginal increase from FY 2017 levels but optimistic given the flat funding environment.

Department of Transportation
(in millions of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
DOT, Total	76,212.8	76,000	-212.76 (.3%)
Federal Highway Administration	43,148.1	43,673.2	525 (1.2%)
National Highway Traffic Safety Administration	911.4	899.1	-12.24 (1.3%)
Federal Transit Administration	12,414.5	12,525.8	111.3 (.9%)
Federal Railroad Administration	1,851.4	1,049.1	-802.4 (43.3%)
Federal Motor Carrier Safety Administration	644.2	657.8	13.6 (2.1%)
Federal Aviation Administration	16,407.4	16,157	-307.35 (1.8%)
Pipeline and Hazardous Material Safety Administration	235.8	259.1	23.3 (9.8%)
Maritime Administration	522.56	390.8	-131.76 (25.2%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

Department of State and United States Agency for International Development

The president's FY 2018 budget request proposes \$37.6 billion for the Department of State and United States Agency for International Development (USAID), including \$12 billion in Overseas Contingency Operations (OCO) funding. This would be a \$19.9 billion or 34.6 percent reduction in base funding below the FY 2017 omnibus level.

- The president's FY 2017 budget request for the Department of State and USAID aligns with President Trump's "America First" vision, with the budget request focused on four national priorities: Defending U.S. National Security; Asserting U.S. Leadership and Influence; Fostering Opportunities for U.S. Economic Interests; and Ensuring Effectiveness and Accountability to the U.S. Taxpayer.⁶
- In keeping with the commitment to national security and defense, the budget request would "reduce or end funding for international programs and organizations" that the Trump Administration does not view as advancing stated U.S. foreign policy interests.
- The request would eliminate funding for the Global Climate Change Initiative (GCCI) as well as payments to United Nations (UN) climate change programs. The request would also reduce funding for the Department of State's Educational and Cultural Exchange (ECE) programs, focusing on sustaining the agency's flagship Fulbright Program.
- As demonstrated in the omnibus appropriations bill for FY 2017, Congress is strongly supportive of the role that the Department of State and USAID play in terms of national security and the proposed cuts for these agencies are unlikely to be enacted.

Proposed Reductions and Terminations

The budget request would reduce the **Educational and Cultural Exchange Programs** by \$349.1 million or 55.1 percent below the FY 2017 omnibus level. **Bureau of Educational and Cultural Affairs (ECA)** within the Department of State would focus support on core programs, including the **Fulbright and the International Visitor Leadership Program (IVLP)**.

The **Development Assistance (DA) Program** would be terminated along with the **Economic Support Fund (ESF)** account, and new consolidated "Economic Support and Development Fund (ESDF)" created. ESDF would only provide support to countries that are "most critical to U.S. national security and strategic objectives." The DA and ESF programs were supported at a combined level of \$8.32 billion in the FY 2017 omnibus. The new consolidated ESDF account would be funded at \$4.94 billion, a total reduction of \$3.39 billion or 40.7 percent.

The budget request would eliminate the **Global Climate Change Initiative (GCCI)**. It would also stop the United States from allocating funding for the **Green Climate Fund (GCF)**. This is in line with President Trump's pledge to terminate funding for United Nations' climate change initiatives.

There is no mention in the budget request of the **Feed the Future (FTF) program**, most likely because it was an Obama Administration initiative. FTF focused on addressing global food security and was

⁶ <https://www.state.gov/r/pa/prs/ps/2017/05/271052.htm>, Department of State and U.S. Agency for International Development Fact Sheet: FY 2018 Budget Request, Department of State, 2017.

integrated with other initiatives that focused on agriculture, health, nutrition, water, and climate change. In addition, there is no specific Global Food Security request, but it appears that key agriculture interests in select countries are now funded through their respective operating units by country or region. It is important to note that this is not necessarily a termination of Global Food Security, but may rather be a reorganization of an Obama-era program.

Ongoing Areas of Interest

Unsurprisingly, the president's budget request diverges sharply from initiatives that the previous Obama Administration had championed, such as FTF, the Global Health Initiative, and programs to combat climate change and promote clean energy in the developing world. Still, some notable programs from the Obama Administration would remain intact, albeit at lower funding levels.

U.S. Global Development Lab (USGDL)

The USGDL would be supported at \$15.5 million, which would enable the Lab to trial new activities and initiatives within USAID to address development problems. The budget request proposes that the Lab support missions to “utilize cutting edge tools and approaches that accelerate development impacts” for example, by incorporating “digital tools and services, digital finance, and information and communications technology to increase economic activity and to create potential new markets for investment.”⁷

The president's request would fund **Global Health Programs (GHP)** at a total of \$6.5 billion, down from \$8.7 billion in FY 2017. GHP programs would focus on improving global health outcomes through capacity building and health promotion, specifically among vulnerable populations, and supporting ending the HIV/AIDS epidemic under the President's Emergency Plan for AIDS Relief (PEPFAR). In addition, other global health activities that would receive funding include ending preventable child death, malnutrition, and infectious diseases. Also of note, the budget request proposes allocating some Ebola emergency funding to control “malaria and other emerging infectious diseases.”

Source: The Congressional Budget Justification for the Department of State, Foreign Operations, and Related Programs is available at <https://www.state.gov/documents/organization/271013.pdf>.

⁷<https://www.state.gov/documents/organization/271013.pdf>, Congressional Budget Justification Department of State, Foreign Operations, and Related Programs, Department of State, 2017 (pg. 296).

International Affairs

(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
Total - State Department and USAID	57,529,900	37,610,525	-19,919,375 (34.6%)
Title I (Dept. of State and Related Agencies)	11,218,224	9,916,006	-1,302,218 (11.6%)
Educational and Cultural Exchange Programs	634,143	285,000	-349,143 (55.1%)
USAID Operating Expenses	1,204,609	1,182,352	-22,257 (1.8%)
Development Assistance	2,995,465	0 [†]	-2,995,465 (100%)
Global Health Programs, Total	8,724,950	6,480,500	-2,244,450 (25.7%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

†The Development Assistance program was terminated along with the Economic Support Fund (ESF) account; a new consolidated "Economic Support and Development Fund (ESDF)" was created as described in the commentary above.

Environmental Protection Agency

President Trump's FY 2018 budget request includes \$5.65 billion for the U.S. Environmental Protection Agency (EPA), which would constitute a dramatic \$2.4 billion or 47.5 percent cut from the FY 2017 enacted level as laid out in FY 2017 consolidated appropriations.

- Consistent with the Trump Administration's ongoing efforts to reduce the size and breadth of the EPA, the budget request proposes sharp decreases and eliminations that would shrink the agency's budget and maintain limited core functions as articulated by congressional statute.
- In a stark contrast to the Obama-era EPA, proposed agency investments would be guided by three specific themes: Rule of Law, which emphasizes a strict adherence to congressional intent; Cooperative Federalism, which stresses the importance of partnerships with state and local entities; and Public Participation, which reflects a commitment to transparency, accountability, and stakeholder input.
- While Republicans may favor efforts to reduce federal involvement in environmental policy, the severe cuts proposed for EPA Science and Technology (S&T) programs are likely to face bipartisan opposition.

Proposed Reductions and Terminations

The FY 2018 budget proposal represents the Administration's effort to redefine EPA's role in national environmental policy while shifting the responsibility of supporting local environmental protection activities to state and local authorities. The result from a fiscal standpoint is that most programs within the agency would incur cuts ranging between modest and severe, while other programs would be eliminated entirely.

Science & Technology

Many of the key **Science & Technology (S&T)** programs are proposed for reductions or terminations in FY 2018 and overall the account would receive a 36.9 percent cut.

The FY 2018 proposal would eliminate the extramural **Science to Achieve Results (STAR) program**, citing this program as duplicative of efforts supported by other federal agencies. The request proposes the elimination of many programs that enjoy bipartisan support, including the Environmental Justice and Education programs; Great Lakes Restoration; and the National Estuary Program/Coastal Waterways.

The **Air and Energy (AE) program**, formerly the Air, Climate, and Energy program, has been renamed and would receive \$30.6 million in FY 2018, a reduction of \$61.1 million from the FY 2017 omnibus level. In FY 2018, funding for air quality research would be reduced and funding for the Global Change Research program would be eliminated entirely. Instead, AE would prioritize the analysis of existing data and the translation of research findings to inform communities on methods for reducing the impact of air pollution.

The **Safe and Sustainable Water Resources (SSWR) program** would likewise see a significant reduction of \$38.7 million from the FY 2017 level. SSWR research would focus on four topic areas in FY 2018: watershed sustainability, nutrients, green infrastructure related to storm water management, and

drinking water systems. SSWR research related to technical support and site-specific assistance would be streamlined, while remaining funds would be refocused to meet new objectives in nutrient recovery.

The **Sustainable and Healthy Communities (SHC) program** would receive \$54.2 million in FY 2018, a reduction of \$85.5 million compared to the FY 2017 level. Like AE, SHC activities would focus on analysis of existing data and the publication of results. Research support for numerous SHC programs including the People, Prosperity, and the Planet (P3) program, and the Health Impact Assessment (HIA) among others would be reduced.

EPA's **Chemical Safety for Sustainability (CSS) program** would receive \$61.7 million in FY 2018, a decrease of \$27.5 million compared to FY 2017 levels. Despite this reduction, the budget would allocate funds for new CSS research activities related to Computational Toxicology and Endocrine Disruptors. Emerging Materials would constitute an additional focus area wherein CSS would support research into the environmental lifecycle of nanomaterials.

New and Signature Initiatives

The budget request would support a few programs consistent with the Administration's interest in infrastructure. The FY 2018 request would allocate \$20 million for the **Water Infrastructure Finance and Innovation Fund**, which provides federal credit assistance to finance eligible water and wastewater projects.

The **State Revolving Funds** would also receive a slight increase from \$2.25 billion to \$2.26 billion in FY 2018. Consistent with the focus on infrastructure, these funds would be utilized to support maintenance and construction of drinking water and wastewater systems.

Source: The United States Environmental Protection Agency FY 2018 Justification of Appropriation Estimates for the Committee on Appropriations is available at

<https://www.epa.gov/sites/production/files/2017-05/documents/fy-2018-congressional-justification.pdf>; EPA's FY 2018 Budget in Brief is available at

<https://www.epa.gov/sites/production/files/2017-05/documents/fy-2018-budget-in-brief.pdf>.

Environmental Protection Agency

(In thousands of \$)

	FY 2016 Actual*	FY 2017 Enacted†	FY 2018 Request	FY 2018 Request vs. FY 2017
EPA, total	8,258,412	8,058,488	5,655,000	-2,403,488 (47.5%)
Science and Technology	763,829	713,823	450,812	-263,011 (36.9%)
Environmental Programs and Management (EPM)	2,650,795	2,619,799	1,717,484	-902,315 (34.4%)

*Figures drawn from the FY 2018 budget request.

†Figures drawn from Division G, Department of the Interior, Environment, and Related Agencies Appropriations Act, 2017

<https://rules.house.gov/sites/republicans.rules.house.gov/files/115/OMNI/DIVISION%20G%20-%20INT%20SOM%20FY17%20OCR.pdf>.

Institute of Museum and Library Services

President Trump's FY 2018 budget request includes \$23 million in discretionary funding for the Institute of Museum and Library Services, which would be a decrease of \$208 million or 90 percent below the FY 2017 enacted level.

- The FY 2018 budget request would eliminate funding for most IMLS program accounts, consistent with the Administration's proposed skinny budget released in March 2017.
- The budget request includes \$23 million for the IMLS administration account, which is an increase of \$7 million or 44 percent above the FY 2017 enacted level. This increase in funding for the administration account is intended to support administrative activities associated with permanently closing the agency.
- The full amount proposed in the budget request is intended for closing out IMLS beginning in FY 2018.

Proposed Reductions and Terminations

As suggested in the Administration's skinny budget, released on March 13, 2017, the President's budget request proposes winddown funding for IMLS and a number of other independent federal agencies. The proposed budget includes no funding for IMLS program accounts, and includes a minor boost for administrative funding to implement closure activities.

Given the recent modest increase in funding support for IMLS from Congress in the 2017 omnibus appropriations bill, IMLS is unlikely to be fully eliminated. The FY 2017 omnibus appropriations bill included a modest \$1 million increase in funding for the agency, and almost 150 Members of the House of Representatives have signed on to a bipartisan Dear Colleague letter urging sustained support for IMLS in addition to a range of other agencies funding arts and education outreach and research.

Ongoing Areas of Interest

IMLS would continue to publish funding opportunity announcements "in accordance with established deadlines," and would support already-awarded grants and contracts.

With IMLS historically receiving flat funding, internal reallocations have been made to prioritize community engagement, preservation practices among small-to-medium sized libraries and museums, and services for veterans and their families. Because the omnibus appropriations legislation for FY 2017 did not include specific congressional directives or instruction, IMLS will likely continue signature and ongoing programs.

Source: <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/oia.pdf>.

A fact sheet on the IMLS budget request is available at <https://www.imls.gov/sites/default/files/imls-faqs-fy2018-budget-release.pdf>.

The Dear Appropriator letter in support of IMLS funding is available at http://www.ala.org/advocacy/sites/ala.org.advocacy/files/content/advleg/federallegislation/04-06-17%20Dear%20Appropriator%20Letter%20to%20House%20Appropriations%20LSTA%20FY18_FINAL.pdf.

Institute of Museum and Library Services

(in thousands of \$)

	FY 2017* Enacted	FY 2018 Request	FY 2018 Request vs. FY 2017
IMLS, total	231,000	\$23,000	-208,000 (90%)
Library Services	183,572	0	-183,572 (100%)
National Leadership Grants: Libraries	13,406	0	-13,406 (100%)
Museum Services	30,234	0	-30,234 (100%)
Museums for America	21,149	0	-21,149 (100%)
National Leadership Grants: Museums	8,113	0	-8,113 (100%)

*The amounts shown for FY 2017 Enacted are taken from the *Consolidated Appropriations Act, 2017* (P.L. 115-31), which reflect the most current spending levels for FY 2017.

National Aeronautics and Space Administration

President Trump's FY 2018 budget request includes \$19.092 billion for the National Aeronautics and Space Administration (NASA). The total request would reduce NASA's budget by \$561 million compared to the amount provided in the FY 2017 omnibus appropriations bill, a 2.9 percent reduction.

- As outlined in the President's budget blueprint released in March, cuts proposed for NASA would be small compared to other agencies; however, cuts are not spread evenly among NASA programs.
- Science would be relatively protected compared to other NASA mission directorates, with some divisions such as Planetary Science and Astrophysics receiving proposed increases. In sharp contrast to the Obama Administration, the budget request would propose deep cuts for Earth Science.
- With strong support for NASA in Congress evidenced by the bipartisan FY 2017 omnibus, major reductions and even many of the smaller proposed reductions are unlikely to materialize.

Proposed Reductions and Terminations

As identified in the budget blueprint, the request proposes the complete elimination of the **Office of Education (OE)** and provides only \$37 million for closeout costs. Both the Space Grant and EPSCoR programs would fund existing grants until the end of their three-year award cycle as part of the closeout. In previous years when the Obama Administration proposed cuts to many of OE's programs, Congress has pushed back and restored funding. In contrast to the proposed elimination of the Office of Education, **Science Mission Directorate STEM Education** activities would be increased by 19% over FY 2016 spending to \$44 million.

The President's budget request includes \$1.754 billion for the **Earth Science Division (ESD)**, a reduction of \$167 million below the FY 2017 enacted level. These reductions would include a 15 percent cut to Earth Science Research below FY 2016 funding by eliminating Carbon Monitoring System awards and reducing competed research grants. Additionally, the request proposes elimination of five earth science missions: Pre-Aerosol, Cloud, and ocean Ecosystem (PACE); CLARREO Pathfinder; Deep Space Climate Observatory instruments (DSCOVR); Orbiting Carbon Observatory-3 (OCO-3), and the Radiation Budget Instrument (RBI). The justification for their elimination ranges from science overlap with existing or planned missions, budget overruns, or lack of recommendation in the 2007 Earth science decadal survey. Notably, the President's budget blueprint released in March outlined only \$102 million in cuts to ESD for FY 2018 and did not propose the elimination of the RBI.

As identified in the President's budget blueprint, the FY 2018 request would eliminate funding for NASA's **Asteroid Redirect Mission**. NASA intends to leverage previous investments in ARM's propulsion systems to advance next generation technologies needed for deep space human exploration, such as Solar Electric Propulsion (SEP) and human/robotic mission integration.

New and Signature Initiatives

In response to recommendations in the 2015 National Academies report *Achieving Science with Cubesats*, NASA would establish a Science Mission Directorate-wide (SMD) **CubeSat/SmallSat initiative**. This new focus would seek to invest \$70 million annually on relevant CubeSat or Small Satellite technology development that addresses high priority science goals in each of SMD's divisions.

The proposed increase of \$65.5 million above FY 2017 for NASA's **Planetary Science Division** represents a reversal of prioritization for a division that did not enjoy strong support from the Obama Administration in previous requests. The request would fully fund recently selected Discovery missions Lucy and Psyche. The budget also reiterates plans to select up to three New Frontiers missions for early-stage mission formulation based on the competition initiated last year. NASA would continue its commitment to fully funding PSD's Mars Exploration Program (MEP), including the flagship Mars 2020 rover. As anticipated, a significant allocation of resources – \$457.9 million, 26 percent above the FY 2017 enacted level – is requested for future missions and research related to NASA's Outer Planets and Ocean Worlds program. Of that amount, \$425 million would be allocated for continued formulation of the Europa Clipper mission. No funding would be provided for a Europa Lander mission.

Ongoing Areas of Interest

SMD's **Astrophysics Division** would receive \$816 million, an increase of 9 percent above the FY 2017 enacted level that would mainly enable continued development and operations of current and planned missions. This increase would fund continued development and scheduled growth for the Wide-Field Infrared Survey Telescope (WFIRST) at \$126.6 million. Within Cosmic Origins, the Spitzer telescope would receive an increase to continue operations through 2019 in line with recommendations from the 2016 Senior Review. APD's Research and Analysis funding would grow by 6 percent to \$74 million. The proposed increase to APD also reflects increased funding for STEM education activities with the Science Mission Directorate as noted above.

In contrast with potential funding cuts to ESD Research and cancellation of five Earth science missions, the request would fully fund ESD's **Earth Venture** class missions. These competitively selected, PI-led missions form an essential component of training for university researchers to build experience in managing missions and help shape the science case for future large strategic missions. Requested funding for this program would allow NASA to release an Earth Venture Instrument solicitation as a secondary payload on a separate mission. Funding would also maintain development of Landsat 9 as well as technology investments for Landsat 10.

Funding for the **James Webb Space Telescope** would decrease by a planned 3.9 percent while continuing to support a launch in 2018.

Heliophysics would receive \$677.8 million in FY 2018, a very slight decrease below FY 2017. The request would largely support ongoing activities, including development of Solar Probe Plus for launch in 2018 and the selection of the next Solar Terrestrial Probe mission in FY 2018. Development would also continue for the most recent **Explorer** missions, ICON and GOLD, with a launch planned in 2018. Funding is identified to select a Small Explorer and Mission of Opportunity in FY 2018, supporting an increased mission cadence as recommended by the 2013 Heliophysics Decadal Survey. Heliophysics Research would be increased by \$40 million over FY 2016 spending in part to implement the Diversify, Realize, Integrate, Venture, and Education (DRIVE) initiative also recommended by the decadal. An \$11 million

increase to Living with a Star Science would fund space weather research in collaboration with other federal agencies.

The Administration's request includes \$679 million for NASA's **Space Technology Mission Directorate**, a slight 1 percent decrease below the FY 2017 enacted level. Within Space Technology Research and Development, STMD would continue emphasizing "rapid development and infusion of transformative space technologies that increase the Nation's capabilities in space and enable NASA's missions."⁸ Such technologies include next generation propulsion systems and entry, descent, and landing technology developments, as well as investments in "advanced life support and resource utilization; robotics and autonomous systems; advanced communications; lightweight structures and manufacturing; and observatory systems."⁹ Funding would be included to select additional **Space Technology Research Institutes** in FY 2018. NASA proposes the elimination of funding for the **Restore-L** satellite servicing technology demonstration to free up \$130 million for other Space Technology Research and Development activities. Congress has previously added Restore-L into STMD appropriations and may do so again in FY 2018 appropriations.

The request also includes \$624 million for NASA's **Aeronautics Research Mission Directorate** (ARMD), a decrease of \$36 million or 6 percent below the FY 2017 enacted level. ARMD would continue to focus on strategic thrust areas developed in its 2015 Aeronautics Strategic Implementation Plan. These 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. While the Directorate largely funds industry-led technology demonstrations, the request makes clear that university participation in proposals responding to solicitations in its Advanced Air Vehicles, Integrated Aviation Systems, and its Transformative Aero Concepts programs—the last housing ARMD's University Innovation and Challenges project. The request also includes "a healthy hypersonic research effort" in coordination with the Department of Defense.¹⁰

Source: NASA's FY 2018 budget materials can be viewed at:

<https://www.nasa.gov/news/budget/index.html>.

⁸ https://www.nasa.gov/sites/default/files/atoms/files/fy_2018_budget_estimates.pdf, FY 2018 Budget Estimates, National Aeronautics and Space Administration, 2018 (pg. TECH-2).

⁹ https://www.nasa.gov/sites/default/files/atoms/files/fy_2018_budget_estimates.pdf, FY 2018 Budget Estimates, National Aeronautics and Space Administration, 2018 (pg. TECH-19).

¹⁰ https://www.nasa.gov/sites/default/files/atoms/files/fy_2018_budget_estimates.pdf, FY 2018 Budget Estimates, National Aeronautics and Space Administration, 2018 (pg. SUM-7).

National Aeronautics and Space Administration
(in millions of \$)

	FY 2016 Operating Plan	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017†
NASA, total	19,285	19,653.3	19,092.2	-561.1 (2.9%)
Science	5,584.1	5,764.9	5,711.8	-53.1 (0.9%)
Earth Science	1,926.6	1,921	1,754.1	-166.9 (8.7%)
Earth Sciences Research	477.7	TBA	406.7	-71.0 (14.9%)
Earth Systematic Missions	914.6	TBA	778.0	-136.6 (14.9%)
Earth System Science Pathfinder	233.6	TBA	264.5	30.9 (13.2%)
Earth Science Multi-Mission Operations	192.4	TBA	196.5	4.1 (2.1%)
Earth Science Technology	60.7	TBA	60.4	-0.3 (0.5%)
Applied Sciences	47.6	TBA	47.9	0.3 (0.6%)
Planetary Science	1,628	1,846	1,929.5	83.5 (4.5%)
Planetary Science Research	274	284.7	291.5	6.8 (2.4%)
Discovery	189	224.8	306.1	81.3 (36.2%)
New Frontiers	194	136.5	82.1	-54.4 (39.9%)
Mars Exploration	513	647	584.7	-62.3 (9.6%)
Outer Planets and Ocean Worlds	261	363	457.9	94.9 (26.1%)
Astrophysics	762.4	750.0	816.7	66.7 (8.9%)
Astrophysics Research	192.8	TBA	204.4	11.6 (6.0%)
Cosmic Origins	195.6	TBA	191.6	-4.0 (2.0%)
Physics of the Cosmos	125.3	TBA	99.9	-25.4 (20.3%)
Exoplanet Exploration	141.2	TBA	176	34.8 (24.6%)
Astrophysics Explorer	107.6	TBA	144.7	37.1 (34.5%)

James Webb Space Telescope	620	569.4	533.7	-35.7 (6.3%)
Heliophysics	647.2	678.5	677.8	-0.7 (0.1%)
Heliophysics Research	160	TBA	200.2	40.2 (25.1%)
Living with a Star	337.1	TBA	381	43.9 (13.0%)
Solar Terrestrial Probes	49.5	TBA	37.8	-11.7 (23.6%)
Heliophysics Explorer	100.6	TBA	58.9	-41.7 (41.5%)
Aeronautics	633.8	660	624	-36.0 (5.5%)
Space Technology	686.4	686.5	678.6	-7.9 (1.2%)
Exploration	3,996.2	4,324	3,934.1	-389.9 (9.0%)
Exploration Systems Development	3,640.8	3,929	3,584.2	-344.9 (8.8%)
Exploration Research and Development	355.4	395	350.0	-45.0 (11.4%)
Space Operations	5,032.3	4,950.7	4,740.8	-209.9 (4.2%)
Education	115	100	37.3	-62.7 (62.7%)
Safety, Security, & Mission Services	2,772.4	2,768.6	2,830.2	61.6 (2.2%)
Construction and Environmental Compliance and Restoration	427.4	360.7	496.1	135.4 (37.5%)
Office of Inspector General	37.4	37.9	39.3	1.4 (3.7%)

*FY 2017 numbers are from the FY 2017 omnibus appropriations bill. All FY 2016 numbers are from the budget request.

†For individual research directorates and offices where FY 2017 funding has not yet been announced, FY 2018 funding is compared to the FY 2016 actual level.

National Endowment for the Humanities & National Endowment for the Arts

The President's FY 2018 budget request proposes the elimination of the National Endowment for the Humanities (NEH) and the National Endowment for the Arts (NEA).

- The request would provide \$42.3 million to “conduct an orderly closeout of the of the NEH beginning in fiscal year 2018.” This is a 71.8 percent decrease from FY 2017. It would also provide \$29.9 million to NEA to carry out a closeout of the agency in FY 2018, an 80.7 percent decrease from FY 2017.
- NEH and NEA are supported by Members of Congress and the complete elimination of the agencies is unlikely.

Proposed Reductions and Terminations

As forecasted in the President's FY 2018 budget blueprint, the full budget request would propose eliminating NEH and NEA. However, it would provide a small amount of funding for FY 2018 to both agencies in order to wind down their respective activities. A small number of NEH staff (approximately 50) would remain at the agency to ensure the closeout of grants and completion of final payments. No new NEH grants would be solicited or accepted in FY 2018.

The NEH budget request would provide \$12.4 million to continue payments for existing grants, while most of the remaining \$30 million would be used for “personnel compensation” resulting from employee terminations and benefits. Also of note, and though unrelated to this budget request release, NEH Chairman William “Bro” Adams announced his resignation, effective as of Tuesday, May 23.

The \$29.9 million provided for the closeout of NEA would be used solely for personnel compensation for agency staff.

Sources: NEH's FY 2018 budget request details are available at https://www.neh.gov/files/2018_appropriations_request.pdf and NEA's FY 2018 budget request details are available at <https://www.arts.gov/sites/default/files/NEA-FY18-Appropriations-request.pdf>

**National Endowment for the Humanities &
National Endowment for the Arts**

(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
NEH, total	149,848	42,307	-107,541 (71.8%)
Research Programs	13,755	0	-13,755 (100%)
Education Programs	12,000	0	-12,000 (100%)
Federal/State Partnerships	46,000	0	-46,000 (100%)
NEA, total	149,849	29,019	-120,830 (80.6%)
Grants	119,177	0	-119,177 (100%)
State and Regional Partnerships	47,517	0	-47,517 (100%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

National Science Foundation

President Trump's FY 2018 budget request includes \$6.653 billion for the National Science Foundation (NSF), which would be a decrease of \$819 million or 11 percent below the FY 2017 enacted level.

- Research directorates would see relatively similar top-level cuts of approximately 10 percent. Core research and infrastructure programs are relatively protected while most cross-cutting initiatives and strategic investments from the previous Administration are deeply cut.
- Broadening participation remains a stated priority with NSF proposing a new program on Hispanic Serving Institutions and the INCLUDES initiative (up 6.5 percent) being the only major NSF-wide investment to be proposed for an increase in the request.
- NSF has champions in Congress that will likely protect the Foundation from major cuts, but NSF would likely be squeezed if overall domestic discretionary spending were to be cut dramatically.

Proposed Reductions and Terminations

The vast majority of NSF programs would be reduced due to the large cut to the Foundation. Overall, NSF expects it would fund 800 fewer research grants than the 8,800 it awarded in FY 2016 and that its funding rate for research proposals would be cut to 19 percent from the FY 2016 estimate of 21 percent. NSF expects only a small decrease in the median annualized award size to \$141,000 from \$141,400 in FY 2016. Overall NSF expects to support 68,000 fewer people under its awards, including researchers, postdocs, students, and teachers. This decrease would include a 14 percent cut to CAREER awards, which would support 440 new grants in FY 2018, representing a proposed investment of \$242 million.

Several cross-cutting initiatives would face large cuts relative to the overall proposed NSF budget:

Innovations at the Nexus of Food, Energy, and Waters Systems (INFEWS)

The INFEWS initiative would be dramatically reduced to \$24 million, 70 percent below the FY 2016 level. INFEWS is an NSF-wide interdisciplinary initiative planned to run from FY 2016 to FY 2020 that aims to understand, design, and model the interconnected food, energy, and water (FEW) systems. For FY 2018, NSF will focus on solicitations for FEW system modeling (\$12 million), innovative system solutions (\$7 million), and other contributing activities (\$5 million).

Risk and Resilience

The Risk and Resilience initiative would be supported at \$31 million, 28 percent below FY 2016. The program aims to improve predictability and risk assessment and increase resilience to extreme events to ensure minimal impact on quality of life, society, and the economy. Risk and Resilience investments are planned to end in FY 2019. For FY 2018, NSF plans to continue the Critical Resilient Interdependent Infrastructure Systems and Processes program (CRISP), led by the Directorate for Engineering (ENG) at \$13 million; and the Prediction of and Resilience against Extreme Events program (PREEVENTS), led by the Directorate for Geosciences (GEO), at \$18 million.

Understanding the Brain (UtB)

The Understanding the Brain (UtB) initiative would be supported at \$134 million in FY 2018, down 22 percent from FY 2016. Within the total proposed for UtB, \$70 million would support the Obama Administration's Brain Research through Advancing Innovation and Neurotechnologies (BRAIN) Initiative. NSF would continue investments in Collaborative Research in Computational Neuroscience

(CRCNS), Integrative Strategies for Understanding Neural and Cognitive Systems (NSF-NCS), and Next Generation Networks for Neuroscience (NeuroNex). While the overall NSF investment in UtB is proposed to decrease, investments from the Directorate for Biological Sciences (BIO) would increase by 37 percent to \$46 million.

Cyber-enabled Materials, Manufacturing, and Smart Systems (CEMMSS)

The request includes \$219 million to support CEMMSS, 19 percent below FY 2016 spending. The CEMMSS program supports research into materials, advanced manufacturing, robotics, and cyber-physical systems, and contributes to interagency priorities from the Obama Administration including the Materials Genome Initiative (MGI), the Advanced Manufacturing Partnership (AMP), and the National Robotics Initiative (NRI). CEMMSS will sunset in 2018, although collaborative research activities related to CEMMSS are expected to continue. In FY 2018 NSF will continue investments in Scalable Nanomanufacturing and Cellular Biomanufacturing, strengthen existing projects related to breakthrough materials, and refine the Cyber-Physical Systems (CPS) and National Robotics Initiative (NRI) solicitations to add emphasis on autonomous, intelligent systems.

Additional Major Proposed Reductions Greater Than 15 Percent

- **Graduate Research Fellowships:** Down 26 percent to \$246 million. NSF would return to funding 1,000 new fellows each year, down from the 2,000 new fellows NSF has supported each year since FY 2011.
- **NSF Research Traineeships:** Down 28 percent to \$40 million. NRT would continue to support traineeships in NSF priority areas as well as other areas of national need.
- **Advancement of Women in Academic Science and Engineering Careers (ADVANCE):** Down 67 percent to \$4.9 million. NSF does not plan any new program commitments under ADVANCE in FY 2018.
- **Research Experiences for Undergraduates (REU):** Down 24 percent to \$75 million with cuts planned to both the supplements and sites portion of the program.
- **Programs funded by H-1B nonimmigrant Petitioner Fees:** These programs are expected to decrease as NSF revenue from H-1B fees is projected to be \$100 million, 46 percent below FY 2016 revenue.
 - **NSF Scholarships in STEM (S-STEM):** Down 47 percent to \$75 million.
 - **Innovative Technology Experiences for Teachers and Students (ITEST):** Down 44 percent to \$25 million. ITEST would become a partner in INCLUDES, making approximately 20 awards.
- **Robert Noyce Scholarship Program:** Down 16 percent to \$54 million.
- **Cybercorps Scholarship for Service:** Down 20 percent to \$40 million. NSF plans to increase the number of REU sites focused on cybersecurity experiences for undergraduate students in their first and second years, especially veterans.
- **STEM + Computing (STEM+C) Partnerships:** Down 50 percent to \$32 million.

New and Signature Initiatives

There are few new initiatives proposed in the budget request, but NSF does officially announce the Big Ideas for Future Investment for the first time in a budget request. One of the Big Ideas, the Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science (INCLUDES), is the only NSF-wide investment that would be increased over FY 2016 levels. NSF also plans new investments related to high performance computing.

Big Ideas for Future Investment

In May, 2016, NSF Director, France Córdova unveiled NSF's proposed ten "Big Ideas" for future investment. These themes aim to "catalyze interest and investment in fundamental research, which is the basis for discovery, invention and innovation." NSF has laid out broad visions for these priorities, and has released some initial funding opportunities to help define the Big Ideas in more detail. No overall funding figure is proposed for the Big Ideas in FY 2018, but NSF plans to continue activities to advance the Big Ideas with more substantial investment expected in FY 2019.

The Big Ideas, which are split into research and process ideas are described below:

- **Research Ideas**
 - **Harnessing the Data Revolution**
 - **Work at the Human - Technology Frontier: Shaping the Future**
 - **Windows on the Universe: The Era of Multi-Messenger Astrophysics**
 - **The Quantum Leap: Leading the Next Quantum Revolution**
 - **Understanding the Rules of Life: Predicting Phenotype:** The Directorate for Biological Sciences (BIO) would place special emphasis in FY 2018 on research that aligns with this framework.
 - **Navigating the New Arctic**
- **Process Ideas**
 - **Mid-scale Research Infrastructure**
 - **NSF 2026: Seeding Innovation:** Aims to identify long-term, crosscutting, foundational research questions to facilitate breakthrough science and engineering leading up to the nation's 250th anniversary. This big idea was previously named NSF 2050 for the 100th anniversary of NSF's founding.
 - **NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science): Enhancing Science and Engineering through Diversity:** An NSF initiative to advance broadening participation in STEM through new approaches that bring together diverse partners and high level institutional leadership to catalyze change and make real progress. NSF INCLUDES started in FY 2015 and is expected to continue through FY 2025. NSF INCLUDES would be supported at \$15 million in FY 2018, an increase of 6.5 percent or \$910,000 over FY 2016. The increased funding would support planned Alliances as well as the development of the INCLUDES National Network. NSF also expects to release Dear Colleague Letters and tracks within existing broadening participation programs to "build on-ramps" to INCLUDES Alliances.
 - **Growing Convergent Research at NSF**

Improving Undergraduate STEM Education (IUSE)

The President's budget request would include \$96.5 million for the Improving Undergraduate STEM Education (IUSE) umbrella, an 8 percent reduction from FY 2016. IUSE is an NSF-wide effort to improve undergraduate STEM education that includes individual programs in the Directorate for Education and Human Resources (EHR) and individual research directorates. For FY 2018, NSF would include \$15 million for IUSE: Hispanic Serving Institutions to promote research on effective student learning at HSIs, incentivize institutional transformation, and enhance research on building capacity at HSIs. EHR will additionally explore putting part of its IUSE budget towards a new IUSE Collaborative Opportunities Fund to incentivize cross-directorate collaborations and issue new solicitations to address cross-cutting

challenges, especially related to the NSF Big Ideas. The Directorate for Computer and Information Science and Engineering (CISE) will also explore a new solicitation or Dear Colleague Letter on computer science undergraduate education challenges.

Ongoing Areas of Interest

Secure and Trustworthy Cyberspace (SaTC)

The SaTC program would be supported at \$114 million in FY 2018, 12 percent below FY 2016. SaTC is planned as a seven-year investment from FY 2014 through FY 2020, with emphasis on cybersecurity research at NSF expected to continue beyond FY 2020. For FY 2018, NSF plans to refine the SaTC solicitation to request center-scale Frontier projects, support at least one experimental testbed, and promote the development of new curricula and learning opportunities for the cybersecurity workforce.

Innovation Corps (I-Corps™)

The I-Corps program would be funded at \$26 million, 12 percent below the FY 2016 level. Funding would support up to 230 I-Corps™ Teams, up to one new or renewal I-Corps™ Node in addition to nine active Nodes, and up to 75 active I-Corps™ Sites, including 25 new or renewal Sites.

Science, Technology, Engineering, and Mathematics (STEM) Education

Beyond graduate and undergraduate education programs discussed above, NSF continues to state prioritization of core STEM education research to foster the development of STEM education research communities. For example, EHR Core Research: STEM Learning, Advancing Informal STEM Learning (AISL), and Discovery Research K-12 would be increased, held flat, or only slightly decreased despite the large overall cut to EHR. Overall within EHR, investments in Learning and Learning Environments (down 4 percent), and Broadening Participation and Institutional Capacity (down 6 percent) would be relatively protected, while STEM Professional Workforce investments (down 22 percent) would be deeply cut.

Additional Priorities

The FY 2018 budget request also includes the following priorities and highlights:

- **National Strategic Computing Initiative (NSCI):** \$97 million in CISE funding would support NSF's role in the interagency NSCI that aims to advance national leadership in high performance computing. CISE would focus on new computing technologies, architectures, and platforms, as well as development and deployment of HPC systems aligned with the NSCI goals to increase coherence between modeling and data analytics technologies, pursue technologies beyond Moore's Law, advance the national HPC ecosystem, and support relevant foundational research and workforce development. Within the total proposed for NSCI, CISE plans a \$60 million investment towards a new leadership-class computing resource. Funding for the Harnessing the Data Revolution Big Idea and NSCI would replace previous investments in Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21). Although NSF's role in NSCI is co- led by the Directorate for Mathematical and Physical Sciences (MPS), there are no details in the request on MPS's plans for the initiative.
- **Computer Science for All (CS for All):** Split between EHR and CISE, \$20 million to build on current investments to ensure access to computer science classes in K-12 schools. Investments would support development of instructional materials, professional development models, and preservice preparation approaches for computer science teachers as well as research on effective approaches for teaching and learning computer science.
- **Smart and Connected Communities:** An increase of 22 percent from FY 2016 funding to \$16 million within CISE to support integrative research and capacity building activities to advance

understanding of intelligent technology and infrastructure for communities including in health, energy efficiency, transportation, education, and public safety.

Source: The full NSF FY 2018 Budget Request can be viewed at <https://www.nsf.gov/about/budget/fy2018/toc.jsp>.

National Science Foundation
(in millions of \$)

	FY 2016 Actual	FY 2017* Enacted	FY 2018 Request	FY 2018 Request vs. FY 2017 [†]
NSF, total	7,493.86	7,472.22	6,652.89	-819.33 (11.0%)
Research and Related Activities	5,998.09	6,033.65	5,361.65	-672.00 (11.1%)
Biological Sciences	723.78	TBD	672.11	-51.67 (7.1%)
Computer and Information Science and Engineering	935.20	TBD	838.92	-96.28 (10.3%)
Engineering	915.68	TBD	833.49	-82.19 (9.0%)
Geosciences	876.51	TBD	783.31	-93.20 (10.6%)
Mathematical and Physical Sciences	1,348.78	TBD	1,219.43	-129.35 (9.6%)
Social, Behavioral, and Economic Sciences	272.20	TBD	244.02	-28.18 (10.4%)
International Science and Engineering	49.07	TBD	44.02	-5.05 (10.3%)
Office of Polar Programs	448.87	TBD	409.18	-39.69 (8.8%)
Integrative Activities	426.57	TBD	315.74	-110.83 (26.0%)
US Arctic Research Commission	1.43	TBD	1.43	--
Education and Human Resources	884.10	880.00	760.55	-119.45 (13.6%)
Major Research Equipment and Facilities Construction	241.50	209.00	182.80	-26.20 (12.5%)
Agency Operation and Award Management	351.11	330.00	328.51	-1.49 (0.5%)
National Science Board	4.31	4.37	4.37	--
Office of Inspector General	14.76	15.20	15.01	-0.19 (1.3%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017. All FY 2016 numbers are from the budget request.

[†]For individual research directorates and offices where FY 2017 funding has not yet been determined, FY 2018 funding is compared to the FY 2016 actual level.

U.S. Department of Agriculture

President Trump's FY 2018 budget request proposes significant decreases to both discretionary and mandatory funding for the U.S. Department of Agriculture (USDA). USDA's Agricultural Research Service (ARS) would be supported at \$993 million in discretionary funding, a 22 percent reduction compared to the FY 2017 omnibus level, and the National Institute of Food and Agriculture (NIFA) would be supported at \$1.257 billion, a decrease of 8 percent below the FY 2017 omnibus level.

- Deviating significantly from the Obama Administration, this budget request would propose cuts to USDA's intramural and extramural research programs, including proposed reductions to former priority areas such as human nutrition.
- USDA's budget overall would experience steep declines in funding for the Supplemental Nutrition Assistance Program (SNAP) – a proposed \$193 billion decrease over the next ten years, and changes to Commodity Credit Corporation program benefits and crop insurance would account for a \$29 billion reduction over the next ten years.
- Members of both the House and Senate Agriculture Appropriations Subcommittees have been very supportive of agricultural research and are expected to continue to be champions. Congress will not support the drastic cuts proposed in this budget request and will work to achieve balance in its FY 2018 appropriations bill. In addition, larger debates on major issues such as SNAP will feature prominently in next year's Farm Bill negotiations.

Proposed Reductions and Terminations

Agricultural Research Service

Within USDA's intramural research branch, funding would be reduced by close to 22 percent below the FY 2017 omnibus level. Most ARS programs would see some reduction in funding, with the largest proposed cut aimed at the Human Nutrition program. There is also no funding requested for the ARS Buildings and Facilities account, which was supported at close to \$100 million in the FY 2017 omnibus appropriations bill. These proposed reductions would result in the closure of 17 laboratories, locations, or worksites.

National Institute of Food and Agriculture

The budget request proposes an 8 percent reduction to NIFA, home to USDA's extramural research programs. While no program within NIFA would see an increase, some key formula grant programs would be flat funded while others, such as the McIntire-Stennis Cooperative Forestry grants, are proposed for more significant reductions.

The budget request also proposes the elimination of the following NIFA programs: Capacity Building at Non-Land Grant Colleges; Animal Health and Disease, Section 1433; Supplemental and Alternative Crops; Aquaculture Centers; Farm Business Management and Benchmarking Program; Sun Grants; Alfalfa Forage and Research Program; Global Change, UV-B Monitoring; Other Special Research Grants (potato and aquaculture research); Veterinary Services Grant Program; Institution Challenge, Multicultural Scholars, and Graduate Fellowship Grants; the Secondary/2-year Post-Secondary Education Program; and the Biomass Research and Development Program.

NIFA's **Agriculture and Food Research Initiative (AFRI)** would be funded at \$349 million, a \$26 million decrease below the FY 2017 omnibus level.

International Food Aid

The budget request would eliminate the McGovern-Dole International Food for Education and Child Nutrition Program and funding provided for international food aid through the authority of P.L. 480.

New Initiatives and Ongoing Areas of Interest

Due to the timing of the budget request, the information provided does not include further detail or budget impacts on the recently announced reorganization at USDA that will shift oversight of the Rural Development programs to the Office of the Secretary and create two new positions: Under Secretary for Trade and Foreign Agricultural Affairs and Under Secretary for Farm Production and Conservation.

AFRI

As part of the budget request, NIFA would grow investments in three areas through AFRI: 1) Sustainable Agricultural Systems, 2) Foundational and Applied Science, and 3) Education and Workforce Development. Specifically, the FY 2018 budget request would fund Sustainable Agricultural Systems programs at \$65.8 million to support large integrative projects. AFRI would support Foundational and Applied Science Programs at \$221 million, this amount would include \$46.2 million for interagency partnerships. AFRI Challenge Areas would be funded at \$38.8 million and \$23.7 million would be invested in Education and Workforce Development programs.

Hispanic Serving Institutions Education Grants Program

The budget request would provide the Hispanic Serving Institutions Education Program \$9.2 million.

Animal and Plant Health Inspection Service (APHIS)

Although the budget request does propose some reductions to APHIS, specifically a \$24 million decrease to Tree and Wood Pests and a \$10 million cut to Specialty Crop Pests among others, efforts to address citrus greening and other citrus disease would continue to be supported.

Food Safety and Inspection Service (FSIS)

Overall, FSIS would receive a 0.6 percent increase, compared to the FY 2017 enacted level. The FSIS budget request includes a proposed increase of \$15.5 million to support 8,500 field personnel and other support personnel. An additional \$12.1 million is requested to fill inspection personnel vacancies.

Source: USDA's FY 2018 Budget Summary and Background Information can be viewed at <https://www.usda.gov/sites/default/files/documents/USDA-Budget-Summary-2018.pdf> and USDA budget explanatory notes can be found at https://www.obpa.usda.gov/fy18explan_notes.html.

U.S Department of Agriculture
(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
Agricultural Research Service (ARS)	1,269,835	993,144	-276,691 (21.8%)
National Institute of Food and Agriculture	1,362,909	1,257,000	-105,909 (7.8%)
AFRI	375,000	349,335	-25,665 (6.8%)
Hatch Act	243,701	243,238	-463 (0.2%)
Smith-Lever Act 3(b) and 3(c)	300,000	299,430	-570 (0.2%)
McIntire-Stennis	33,961	28,867	-5,094 (15%)
Food Safety and Inspection Service (FSIS)	1,032,062	1,038,000	5,938 (0.6%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

U.S. Geological Survey

President Trump's FY 2018 budget request includes \$922 million in discretionary funding for the U.S. Geological Survey (USGS), which would be a decrease of \$163 million or 15 percent below the FY 2017 omnibus appropriations enacted level.

- As expected, the Trump Administration priorities reflected in the 2018 USGS budget request diverge dramatically from those under the Obama Administration. The budget request proposes deep cuts across the agency, especially to climate research initiatives. The budget request proposes 15 to 25 percent cuts to all but one of the science mission areas, consistent with the Administration's goal of cutting non-military discretionary spending. In line with the Administration's interest in developing the nation's energy and natural resources, the smallest proposed funding reductions would be to the Energy and Minerals, and Environmental Health mission area, which would receive a three percent cut.
- The budget request proposes eliminating or reducing funding to some of the programs that provide external funding. Programs that would be eliminated include the Water Resources Research Act program, which supports Water Resources Research Institutes (WRRIs), and funding for the development of the ShakeAlert earthquake early warning system.
- Both the overall reduction in funding for USGS and many of the proposed programmatic cuts in the budget request are not in line with congressional priorities. Many programs of interest to institutions of higher education are likely to be protected by Congress. Presidential budget requests often propose large cuts to, or eliminations of, the Water Resources Research Act program in the past, yet Congress historically appropriates the full \$6.5 million to the program each year. Additionally, eliminating earthquake early warning investments is unlikely to gain traction in a Congress that recently increased appropriated funding to this program by \$2 million in the FY 2017 omnibus.

Proposed Reductions and Terminations

Almost all programs within USGS would be slated for cuts under the president's 2018 budget request.

Under this proposal, the **National Climate Change & Wildlife Science Centers** and **DOI's Climate Science Centers** would be reorganized under the category of **National and Regional Climate Adaptation Science Centers**. The budget request proposes eliminating four out of eight of these regional centers.

Within the **Natural Hazards** account, funding would be reduced by \$26.9 million, or 18.6 percent. The **Global Seismographic Network** would be cut by 25.1 percent, which would hinder network operations and require putting sensor upgrades on hold. There is generally bipartisan support in Congress for the USGS Natural Hazards programs.

New and Signature Initiatives

No new research initiatives are proposed in the FY 2018 USGS budget request. Rather, the budget request proposes cuts to many core activities in areas that include research on climate change, natural hazards, and water.

Cooperative Research Units

Funding for the Cooperative Research Units would be maintained in the proposed budget request. Research units are made up of DOI agencies, state natural resource agencies, and universities working together to provide “science support to management agencies designed to sustain the hunting, fishing, and wildlife-related recreation needs of the public.”¹¹

Land Resources

The largest reorganization within USGS would be of the **Land Resources** account, formally named Climate and Land Use. The proposed restructuring of this mission area would pivot away from climate research and toward the science of land change and the information needs of stakeholders.

Ongoing Areas of Interest

Landsat 9

Increased funds for the **National Land Imaging Program** are proposed to help prepare for the launch of the **Landsat 9** land remote sensing satellite in 2021 to replace the aging Landsat 7. Funding for Landsat 9 would come from both USGS and NASA.

Invasive Species Program

The president’s budget request would maintain funding for the **Invasive Species Program** to allow for rapid detection, assessment, and control of invasive species.

Coastal/Marine Hazards and Resources Program

The budget request proposes renaming the Coastal and Marine Geology program to be called the **Coastal/Marine Hazards and Resources Program**, which is consistent with recent USGS efforts to highlight the societal and economic impact of the agency’s science.

Source: The United States Department of the Interior Budget Justifications and Performance Information, Fiscal Year 2018, U.S. Geological Survey is available at https://www.doi.gov/sites/doi.gov/files/uploads/fy2018_usgs_budget_justification.pdf. The Budget Overview is available at https://www.doi.gov/sites/doi.gov/files/uploads/fy2018_bib_bh049.pdf.

¹¹ https://www.doi.gov/sites/doi.gov/files/uploads/fy2018_usgs_budget_justification.pdf, The United States Department of the Interior Budget Justifications and Performance Information Fiscal Year 2018, U.S. Geological Survey, 2017 (pg. C-7).

U.S. Geological Survey
(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
USGS, total	1,085,167	922,168	-162,999 (15.0%)
Natural Hazards	145,013	118,111	-26,902 (18.6%)
Earthquake Hazards	64,303	51,388	-12,915 (20.1%)
Global Seismographic Network	6,653	4,986	-1,667 (25.1%)
Ecosystems	159,732	132,128	-27,604 (17.3%)
Land Resources†	149,275	112,847	-36,428 (24.4%)
National and Regional Climate Adaptation Science Centers	25,335	17,435	-7,900 (31.2%)
Energy, Minerals, and Environmental Health	94,311	91,510	-2,801 (3.0%)
Water Resources	214,754	173,042	-41,712 (19.4%)
Water Resources Research Act	6,500	0	-6,500 (100%)
Core Science Systems	116,050	92,969	-23,081 (19.9%)
Science Support	105,611	89,368	-16,243 (15.4%)
Facilities	100,421	112,193	11,772 (11.7%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

†The request proposes reorganizing the current Climate and Land Use mission area and renaming it Land Resources.

Corporation for National and Community Service

President Trump's FY 2018 budget request includes approximately \$135 million, 87 percent below the FY 2017 omnibus appropriations, for the Corporation for National and Community Service (CNCS), which would be a dramatic cut intended to terminate CNCS operations.

The Administration proposes eliminating CNCS, stating that the responsibilities for national service and volunteerism are better suited for the private and nonprofit sector. The funds allocated are intended for use in winding down CNCS operations and to manage existing programs for one final year.

Source: The CNCS FY 2018 Congressional Budget Justification can be viewed at https://www.nationalservice.gov/sites/default/files/documents/CNCS_FY2018_CBJ.pdf.

Corporation for National and Community Service

(in thousands of \$)

	FY 2017 Enacted*	FY 2018 Request	FY 2018 Request vs. FY 2017
CNCS, total	1,030,358	134,992	-895,366 (86.9%)
Social Innovation Fund	0	0	--
AmeriCorps State and National	386,010	2,341	-383,669 (99.4%)
AmeriCorps VISTA	92,364	4,910	-87,454 (94.7%)
AmeriCorps NCCC	30,000	24,087	-5,913 (19.7%)

*The amounts shown for FY 2017 Enacted are taken from the Consolidated Appropriations Act, 2017 (P.L. 115-31), which reflect the most current spending levels for FY 2017.

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