



SSTI WEEKLY DIGEST

Improving initiatives that support prosperity

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Special Federal Budget Issue FY 2018

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White House budget challenges science, innovation proponents

The President's [budget for FY 2018](#) would eliminate funding for numerous innovation programs, slash spending on R&D and technology transfer and limit education and training opportunities. The full budget proposal may well be "[dead on arrival](#)" in Congress, but this is not the same as Congress rejecting *each* budget proposal. These cuts threaten America's long-term economic, medical and security interests — described by *WIRED* as "[science insurance](#)" — but cuts to Medicaid and Meals-on-Wheels will continue to receive the bulk of national attention. If federal spending for science, technology, innovation and entrepreneurship is to remain a national priority, the best — and likely, only — advocates will be the practitioners, researchers, investors and entrepreneurs who experience these initiatives on a daily basis. In short: you.

Highlighting some of the budget proposal's specific cuts emphasize the challenge (all numbers relative to the enacted FY 2017 budget).

- Regional Innovation Strategies, a program that has funded 73 initiatives in 34 states to support the transformation of ideas into products and businesses: eliminated (-\$17 million).
- Manufacturing Extension Partnership, a program that returns [\\$9 for every \\$1 spent](#) while helping manufacturers in every state become more efficient and innovative: eliminated (-\$124 million in FY 2018).
- Regional Innovation Clusters, a program that helps industry clusters leverage regional resources for greater innovation and competitiveness: eliminated (-\$5 million).
- Appalachian Regional Commission, which supports economic development and innovation activities throughout the region: decrease of \$121 million (\$31 million in FY 2018).
- Federal R&D, which funds basic and applied science on topics from aerospace to zoology and determines SBIR/STTR funding: decrease of [\\$12,083 million](#).

Changes of this magnitude would have wide-ranging implications for federal, as well as state, local and private science and innovation policy and practice. In some cases, non-federal actors would accept some of the cost shift from this budget, but this process would take years in most cases and would likely never replace all federal spending. In the meantime, dozens of public-private initiatives throughout the country would be stopped in their tracks, and the loss of R&D funding would at least threaten, if not end, America's leadership in numerous areas of innovation.

Congress is not ignorant of the dangers posed by this budget. As with the White House's FY 2017 proposal, Republican leaders in Congress are stating that they will not accept the FY 2018 budget as more than a "recommendation," as Sen. Mitch McConnell (R-KY) [called](#) it. Sen. Lamar Alexander (R-TN), chair of the Appropriations Subcommittee on Energy and Water Resources, [stated](#), "We should not pretend to balance the budget by cutting national laboratories, national parks, and the National Institutes of Health." Some, like Rep. Mike Simpson (R-ID), already [anticipate](#) a continuing resolution for FY 2018.

This level of disagreement between the White House and Congress largely worked in the favor of science and innovation for the federal FY 2017 budget, but we cannot assume the same will be the case for FY 2018.

"The aspiration and the goal is right on target," is Speaker of the House Paul Ryan's (R-WI) [perspective](#) on the budget proposal. He was expressing support for the idea that the White House was interested in cutting programs to balance the budget. Similarly, Sen. Thad Cochran (R-MS), chair of the Appropriations Committee, [said](#) the budget is, "An opportunity for Congress to re-examine programs across the government."

These sentiments indicate that while the administration's full proposal is not likely to pass, at least some key members of Congress would support implementing components of the budget.

Rather than assume the budget proposal will stalemate into oblivion, and better than arguing for science and innovation spending from tradition, we need to make the case for these investments on their own merits. Fortunately, this is easy to do.

As we advocate in SSTI's [Solutions for Job Creation & Economic Growth](#) policy platform, science, technology, innovation and entrepreneurship are necessary tools to create a better future. This is a message that resonates with citizens, which means that it is something that Congress can care about, too. In a 2015 poll conducted by a bipartisan team on behalf of SSTI, 90 percent of people polled agreed that an initiative to convert our nation's strength in research into new businesses and jobs would mean more opportunities for their children and grandchildren. As importantly, the majority were willing to use tax dollars to pay for this program.

Quantitative and qualitative evidence for programs is also critical. Fortunately, we have many compelling arguments. MEP [produces](#) more jobs and sales for manufacturers. Programs to facilitate capital access [attract](#) bank and investor follow-on financing. Federal R&D investments attract [further investment](#) from public and private institutes and corporations. Publicly-supported venture development organizations throughout the U.S. (for example, [BFTP](#) | [OCAST](#) | [Rev1](#)) have supported numerous companies, each with their own story of innovation, increasing sales, job creation and, ultimately, success. The transformation of federal R&D into new products is [saving the lives](#) of American soldiers. There are many more data points and stories to share.

We have a strong message. We have a compelling message.

All we have to do is tell it.

SSTI, through the Innovation Advocacy Council, talks with Congress and federal agencies on a regular basis. We educate officials and staff on the importance of federal support for regional innovation economies, and how these federal partnerships mean greater economic prosperity and improved quality of life for all Americans.

President Trump's FY 2018 budget is a challenge to science and innovation proponents — a challenge for you to voice your support for the policies and investments that will lead to this better future.

Get engaged by contacting your delegation, or by joining SSTI's existing outreach efforts. Learn more at <http://ssti.org/federal-policy>, or by emailing contactus@ssti.org.

Department of Agriculture

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The president's FY 2018 request for discretionary budget authority to fund programs and operating expenses is \$21.0 billion, approximately \$4.8 billion below the 2017 estimate in discretionary program funding for the [Department of Agriculture \(USDA\)](#). This includes funding for Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Rural Development, Forest Service, food safety, research, and conservation activities. However, the budget does not include the USDA reorganization plan that was announced by Secretary Sonny Perdue on May 11, which proposes a change in status for Rural Development.

Research, Education, and Economics

REE responsibilities are carried out by four agencies:

- **Agricultural Research Service (ARS)** conducts intramural research in natural and biological sciences would be \$993 million (\$117.2 million, 15.1 percent decrease). The budget proposes the termination of "lower-priority" and extramural research projects and closure of 17 laboratories, locations, or worksites;
- **National Institute of Food and Agriculture** would be reduced to \$1.3 billion (\$105.9 million, 7.8 percent decrease);
- **Economic Research Service (ERS)** would decrease by 11.3 percent (\$9.8 million) to \$77.0 million; and,
- **National Agricultural Statistics Service (NASS)**, which conducts the quinquennial Census of Agriculture, would increase 8.6 percent to \$186.0 million.

Rural Development

Within Rural Development, the budget provides \$162.0 million to establish a new account for Rural Economic Infrastructure Grants. The single account would support initiatives under the following program authorities: Distance Learning and Telemedicine, Broadband, Community Facilities, and housing repair for very low income residents. Of this total, up to \$80 million will be set aside to assist the Appalachian region.

The proposed budget eliminates the discretionary programs of Rural Business-Cooperative Service (-\$65.3 million).

Department of Commerce

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The Department of Commerce houses a variety of science- and innovation-relevant agencies, most of which receive substantial cuts in the administration's FY 2018 budget. Collectively, Commerce would lose many of its initiatives targeted to entrepreneurs, most notably the Regional Innovation Strategies (RIS) program and the Manufacturing Extension Partnership (MEP).

Economic Development Administration

The proposal would virtually eliminate EDA, requesting no program dollars (\$237.0 million in FY 2017) and \$30 million for administrative expenses related to closing the agency (\$9 million, 23.1 percent decrease). **RIS**, including both the **i6 Challenge** and **Seed Fund** funding lines, would be eliminated (\$17.0 million in FY 2017), along with all other EDA-sponsored programs. The administration would handle outstanding revolving loan fund grants by defederalizing these commitments, allowing state and local governments to make their own determinations for the futures of these funds.

National Institute of Standards and Technology

NIST would see substantial cuts across the agency. **MEP** would be reduced to \$6.0 million for expenses related to ending the program (\$124.0 million, 95.4 percent decrease). **Manufacturing USA** funding would be limited to \$10 million for the **National Institute for Innovation in Manufacturing Biopharmaceuticals** and \$5 million for network coordination (\$10.0 million, 40.0 percent decrease). NIST's Scientific & Technical Research & Services initiatives would be reduced to \$600.0 million, a decrease of \$90.0 million (13.0 percent), with most of the cuts focused on environmental measurement and standards.

National Telecommunications and Information Administration

The budget would increase NTIA's funding by 12.5 percent to \$36.0 million in FY 2018. This increase was apparently not the administration's intention, however, as the budget expected a higher FY 2017 funding level than was ultimately enacted. Under the administration's plan, funding for spectrum management would have remained approximately level while all other activities would receive reduced funding.

Minority Business Development Agency

MBDA would see a decline of \$28 million to an FY 2018 funding level of \$6 million (82.4 percent decrease). These costs would cover expenses for closing the agency.

National Oceanic and Atmospheric Administration

NOAA would receive a \$0.4 billion reduction in Operations, Research and Facilities funding, leaving \$3.0 billion available (11.9 percent decrease). Most of the cuts would go to close NOAA's Air Resources Lab and Office of Education.

Census Bureau

The budget would provide the Census with \$1.8 billion in funding, an increase of \$0.4 billion (25.4 percent).

Economic and Statistical Analysis

ESA would see its funding for various data initiatives decrease by \$10.3 million to \$97.0 million in FY 2018 (9.6 percent decrease).

International Trade Administration

The budget would decrease ITA funding by \$42.5 million to \$442.5 million (8.8 percent decrease) in appropriations.

U.S. Patent and Trademark Office

The USPTO is funded through fee collections and not appropriations. The budget proposal assumes the office would have a budget of \$3.5 billion in FY 2018, an increase of \$0.3 billion over Congress' expectations for FY 2017.

Department of Defense

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from DoD's FY 2017 request with continuing resolution adjustments.

The FY 2018 [budget request](#) for the [Department of Defense \(DOD\)](#) would provide \$574.5 billion in discretionary base funding. **Research, Development, Test, and Evaluation (RDT&E)** [would receive](#) a total \$83.3 billion – an \$11 billion (15.2 percent) increase. This includes \$13.2 billion for Science and Technology, a \$0.6 billion (4.8 percent) increase, which is comprised of Basic Research, Applied Research and Advanced Technology Development. DoD Basic Research would receive \$2.2 billion (\$0.2 billion; 4.8 percent increase), Applied Research \$5 billion (\$0.2 billion; 3.3 percent increase), and Advanced Technology Development \$6 billion (\$0.4 billion; 6.4 percent increase).

In the FY 2018 [agency budget proposal](#), the DoD is pursuing new technology development, operational concepts, and organizational constructs in several areas including:

- \$252.9 million for Common Kill Vehicle Technology development (previously funded in FY 2016 at \$60.9 million);
- \$247.4 million for Space Programs and Technology development, a \$72.2 million (41.2 percent) increase;
- \$155.4 million for Advanced Aerospace Systems, a \$26.9 million (14.8 percent) decrease;
- \$136.2 million for Defense-Wide Manufacturing Science and Technology Program including DoD-funded ManufacturingUSA institutes, a \$22.2 million (14 percent) decrease;
- \$29.6 million in new funding for the Defense Innovation Unit-Experimental (DIUx) program; and,
- \$14.4 million for Joint Electronic Advanced Technology efforts, a \$7.6 million (34.5 percent) decrease.

FY 2018 budget request for DoD, RDT&E by military branch (in millions of dollars, change from FY 2017 request with continuing resolution adjustments)

	Army	Navy	Air Force	Defense-Wide
Basic Research	430.0 (0.3%)	596.0 (9.8%)	505.0 (1%)	2,229.0 (6%)
Applied Research	889.0 (-2%)	866.0 (2.9%)	1,284.0 (1.9%)	4,973.0 (3.3%)
Advanced Technology	1,071.0	686.0	794.0	6,022.0

Development	(13.4%)	(-6.9%)	(9.4%)	(6.4%)
Advanced Component Development and Prototypes	909.0 (55.5%)	4,246.0 (-11.2%)	4,618.0 (8%)	17,150.0 (12.4%)
System Development and Demonstration	3,070.0 (18%)	6,362.0 (4.1%)	4,476.0 (8%)	14,728.0 (8.9%)
Management Support	1,254.0 (7.9%)	946.0 (3%)	2,644.0 (94.5%)	6,085.0 (31.0%)
Operational System Development	1,921.0 (29.7%)	4,082.0 (6.7%)	20,707.0 (15%)	31,780.0 (13.7%)
Total	9,545.0 (17.3%)	17,805.0 (-3.9%)	35,050.0 (34.1%)	83,328.0 (15.2%)

Funding levels for select DOD research agencies and research programs in the FY 2018 budget include:

- [Defense Advanced Research Projects Agency \(DARPA\)](#) — \$3.2 billion, a \$0.2 billion (6.7 percent) increase;
- [Chemical and Biological Defense Programs](#) — \$1.1 billion, a \$0.2 billion (23.8 percent) increase;
- [Defense Threat Reduction Agency](#) — \$470.0 million, a \$9 million (2 percent) increase;
- [Defense Logistics Agency](#) — \$319.8 million, a \$131.7 million (70 percent) increase ; and,
- [Defense Information Systems Agency](#) — \$256.5 million, a \$7.8 million (3.1 percent) increase.

Department of Education

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The president's proposed FY 2018 budget would provide \$976.9 million in total funding for **Career and Technical Education** (CTE) within the U.S. Department of Education, a \$148.1 million (13.2 percent) decrease. National CTE programs would receive \$27.4 million in the proposed budget, a \$20 million (270.3 percent) increase. State grant-based CTE programs would receive \$949.5 million in FY 2018, a \$168.1 million (15 percent) decrease.

Funding for notable programs such as Pell Grants (\$22.4 billion) and **Minority Science and Engineering Improvement** (\$9.6 million) would not see their funding levels change from the FY 2017 enacted budget.

The president's proposed FY 2018 budget would eliminate the **21st Century Community Learning Centers** program, which had previously received \$1.2 billion in the FY 2017 enacted budget.

Department of Energy

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The president's [FY 2018](#) budget request would provide \$28.0 billion in total funding for the **Department of Energy**, a \$2.7 billion (8.9 percent) decrease from the FY 2017 omnibus. Notably, the proposed budget would eliminate the ARPA-E program, which received \$306 million as part of the FY 2017 omnibus. The proposed budget "refocuses the Department's energy and science programs on early-stage research and development (R&D) at the national laboratories to advance American primacy in scientific and energy research in an efficient and cost effective manner," according to the DOE.

Under the proposed FY 2018 budget, the DOE's **Office of Science** would receive \$4.5 billion to support basic research in the physical sciences. This represents an \$892 million (16.5 percent) decrease from the FY 2017 omnibus. The following Office of Science research programs would receive funding:

Program	FY 2018 Proposed (\$, millions)	\$ Change, FY2017-2018 (millions)	% Change, FY2017-2018
Science Laboratory Infrastructure	76.2	-53.8	-41.4%
Advanced Scientific Computing Research	722.0	+75.0	+11.6%
Biological and Environmental Research	349.0	-263.0	-43.0%
Basic Energy Sciences	1,600.0	-81.5	-4.8%
Fusion Energy Sciences	310.0	-20.0	-6.1%
High Energy Physics	673.0	-58.5	-8.0%
Nuclear Physics	503.0	-19.0	-3.6%
Workforce Development for Teachers and Scientists	14.0	-5.5	-28.2%

The **Office of Energy Efficiency and Renewable Energy (EERE)** would receive \$636 million in the president's proposed FY 2018 budget, a \$1.5 billion (69.6 percent) decrease from the enacted FY 2017 omnibus. Any funding increases were not the Administration's intention, however, as the proposed budget expected a higher FY 2017 funding level than was ultimately enacted.

Program	FY 2018 Proposed (\$, millions)	\$ Change, FY2017-2018 (millions)	% Change, FY2017-2018
Bioenergy Technologies	56.6	6.6	13.2%
Hydrogen & Fuel Cell Technology	45.0	-56.0	-55.4%

Solar Energy R&D	69.7	14.7	26.7%
Conventional Hydropower	20.4	-4.6	-18.4%
Geothermal Technologies	12.5	-22.5	-64.3%
Advanced Manufacturing	82.0	-68.5	-45.5%
Emerging Building Technologies	67.5	-30.9	-31.4%

The President's proposed FY 2018 budget would provide \$280 million in FY 2018 for **Fossil Energy Research and Development**, a \$388 million (58.1 percent) decrease from the FY 2017 omnibus. Within this category, \$37.8 million would go toward cross-cutting research,

After receiving \$306.0 million in the FY 2017 approved omnibus, under the president's proposed FY 2018 budget the **Advanced Research Projects Agency – Energy (ARPA-E)** program would receive just \$20 million in FY 2018 to wind down operations, and no funding in subsequent years.

The **Title 17 Innovative Technology Loan Guarantee Program** would receive no funding in the president's FY 2018 proposed budget after previously receiving \$7.0 million in the FY 2017 omnibus.

Department of Health and Human Services

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The administration's FY 2018 [budget request](#) for the **Department of Health and Human Services** (HHS) is \$69.8 billion in discretionary spending, reflecting a \$14.6 billion (17.3 percent) decrease from FY 2017 estimated funding levels. Discretionary spending accounts for approximately 7 percent of the total proposed HHS budget. Mandatory spending for programs like Medicare, Medicaid and the Children's Health Insurance Program account for the balance. Total FY 2018 budget authority for HHS would be \$1.1 trillion (0.03 percent increase over FY 2017 estimates).

National Institutes of Health (NIH)

In FY 2018, NIH would receive \$26.9 billion, a decrease of \$5.7 billion (17.4 percent).

As part of the 21st Century Cures Act, the Congressionally authorized 10-year \$4.8 billion funding commitment, NIH will commit \$496 million in FY 2018 for four key initiatives including:

- The Precision Medicine Initiative;
- The Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative;
- The Beau Biden Cancer Moonshot; and,
- The Regenerative Medicine Program.

In the president's budget, NIH would be subject to several structural changes including:

- Applying a uniform indirect cost rate to all grants;
- Eliminating the Fogarty International Center, but retaining all federal staff and maintaining key activities in other NIH Institutes and Centers;
- Consolidating the Agency for Healthcare Research and Quality into NIH while maintaining \$272 million in discretionary funding for these activities; and,
- Conducting a review of health services research across NIH and developing a strategy to ensure that the highest priority health services research is conducted and made available across the federal government.

The proposal highlights that on average, from FY 1994 to FY 2014, NIH spent approximately 30 percent of its research resources on indirect costs. The Trump administration proposes reforms to release grantees from the "costly and time-consuming" indirect rate setting process and reporting requirements. By applying a uniform indirect cost rate to all grants, the administration contends that the risk for fraud and abuse will be mitigated because it can be simply and uniformly applied to all grantees.

The proposed FY 2018 NIH funding would support a total of 33,403 research project grants, including 7,326 new and competing awards (18.4 percent decrease from FY 2017 estimates) with 1,578 new SBIR/STTR awards (11.3 percent decrease). Approximately 9.2 percent of the budget would support intramural programs consisting of basic and clinical research activities with the majority of NIH's available funding used to support the extramural research community including universities, medical schools, hospitals and other research facilities. The total request for the 24 institutes of NIH and the Office of the Director breaks down as follows:

	FY 2018 Request (\$ millions)	Percent Change (From FY 2017 actuals)
National Cancer Institute (NCI)	4,474.0	-20.5
National Institute of Allergy and Infectious Diseases (NIAID)	3,783.0	-22.9
National Heart, Lung and Blood Institute (NHLBI)	2,535.0	-21
National Institute of General Medicine Studies (NIGMS)	2,186.0	19.7
National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)	1,600.0	-14.5
Office of the Director (NIH)	1,452.0	-12.8
National Institute of Neurological Disorders and Stroke (NINDS)	1,356.0	-24
National Institute of Mental Health (NIMH)	1,245.0	-22.3
National Institute of Child Health and Human Development (NICHD)	1,032.0	-25.2
National Institute of Aging (NIA)	1,304.0	-36.4
National Institute of Drug Abuse (NIDA)	865.0	-20.7
National Center for Advancing Translational Sciences (NCATS)	557.0	-21.1
National Eye Institute (NEI)	550.0	-23
National Institute for Arthritis and Musculoskeletal and Skin Diseases (NIAMS)	418.0	-25.1
National Human Genome Research Institute (NHGRI)	400.0	24.4
National Library of Medicine (NLM)	373.0	-8.6
National Institute of Alcohol Abuse and Alcoholism (NIAAA)	361.0	-25.3
National Institute of Deafness and Other Communication Disorders (NIDCD)	326.0	-25.4
National Institute of Dental and Craniofacial Research	321.0	-24.6

(NIDCR)		
National Institute of Biomedical Imaging and Bioengineering (NIBIB)	283.0	-20.7
National Institute of Minority Health and Health Disparities (NIMHD)	215.0	-25.6
National Institute of Nursing Research (NINR)	114.0	-24
National Center for Complementary and Integrative Health (NCCIH)	102.0	-24.4
National Institute of Environmental Health and Sciences (NIEHS)	60.0	-91.6

Agency for Healthcare Research and Quality (AHRQ)

While the **Agency for Healthcare Research and Quality (AHRQ)** would be eliminated, the FY 2018 budget request includes \$272 million within NIH to preserve key research activities previously carried out by the Agency for Healthcare Research and Quality (AHRQ). Under the proposed plan, NIH would structure AHRQ as an institute and “preserve links between many of the closely-related continuing activities; simplify administrative responsibilities for consolidating and continuing the programs; and, maintain an entity that can serve as a center of excellence for improving the quality and safety of health care services.”

Centers for Disease Control and Prevention (CDC)

The FY 2018 budget requests \$6.4 billion, a \$25 million (0.4 percent) increase, for the **Centers for Disease Control and Prevention (CDC)** to support activities including funding for basic and applied research in areas of interest to the CDC.

Department of Housing and Urban Development

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

Notably, the president's proposed FY 2018 budget would eliminate funding for **Community Development Block Grants**. These grants received \$3.0 billion in the FY 2017 budget.

The proposed FY 2018 budget would provide \$85.0 million for **research and technology** at the Department of Housing and Urban Development, a \$4.0 million (4.5 percent) decrease from FY 2017.

The **Jobs-Plus** program, which provides workforce development training for public housing residents, would receive \$10.0 million under the proposed FY 2018 budget, a \$5.0 million (33.3 percent) reduction from FY 2017.

Department of the Interior

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

Interior includes several bureaus and offices that fund R&D and conduct tech transfer activities, all of which would receive less funding under the FY 2018 budget proposal. The **Bureau of Reclamation** would receive \$14 million for R&D, a decrease of \$20.6 million (59.5 percent); the **Fish and Wildlife Service's** science support activities are proposed for elimination (\$17 million in FY 2017); and the **Office of Surface Mining Reclamation and Enforcement's** technology development and transfer funding would be reduced by \$2.4 million to \$12.8 million (15.8 percent decrease).

The majority of R&D funding within Interior is provided to the **U.S. Geological Survey's** Surveys, Investigations and Research initiatives, which would be funded at \$922.2 million in FY 2018, a decrease of \$163.0 million (15.0 percent).

Department of Justice

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The **Department of Justice** (DOJ) would receive \$27.7 billion in FY 2018 discretionary funding under the president's [budget request](#), a \$1.2 billion (4.2 percent) decrease.

For the Office of Justice Programs (OJP), the budget request includes \$111 million for Research, Evaluation, and Statistics activities – a \$22 million (24.8 percent) increase.

DOJ would receive \$35.5 million to support OJP's research and statistics programs. The funding set-aside is intended to support the development and enhancement of basic statistical systems to monitor the criminal justice system. The budget request also includes \$33 million (level funding) for the **National Institute of Justice** (NIJ) according to the [OMB's budget estimate](#) for DOJ, which serves as the R&D agency of DOJ.

Department of Labor

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The **Employment and Training Administration (ETA)** within the Department of Labor would receive \$6.9 billion under the president's proposed FY 2018 budget, a \$3.1 billion (31.1 percent) decrease from the FY 2017 approved budget. Within the ETA, the budget would provide:

- \$732.5 million for **Dislocated Worker Assistance**, a \$127.5 million (14.8 percent) decrease from FY 2017;
- \$490.4 million for **Adult Training**, a \$325.2 million (39.9 percent) decrease from FY 2017; and,
- \$89.8 million for **Apprenticeship Grants**, a \$5.2 million (5.4 percent) decrease from FY 2017.

The **Bureau of Labor Statistics** would receive \$607.8 million in FY 2018 under the president's proposed budget, a \$1.2 million (0.2 percent) decrease from FY 2017.

The budget would provide \$279.6 million for **Veteran's Employment and Training**, a \$600,000 (0.2 percent) increase from FY 2017.

Department of Transportation

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

Research and development activities in the Department of Transportation's (DOT) would face considerable decrease under the president's proposed FY 2018 budget. Notable examples include:

- \$301.5 million to support operations and research within the **National Highway Traffic Safety Administration**, a \$24.5 million (7.5 percent) decrease from FY 2017;
- \$150 million for research engineering and development within **the Federal Aviation Administration**, a \$26.5 million (15.0 percent) decrease from FY 2017;
- \$39.1 million for research and development within **the Federal Railroad Administration**, a \$1.0 million (2.5 percent) decrease from FY 2017;
- \$9.1 million for research and technology within the **Federal Motor Carrier Safety Administration**, a \$3.9 million (30.0 percent) decrease from FY 2017; and,
- \$8.5 million for transportation planning research and development within the **Office of the Secretary**, a \$3.5 million (29.2 percent) decrease from FY 2017.

Department of Treasury

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The FY 2018 budget proposal would terminate much of Treasury's support for capital access. The Administration would not provide additional funding for the **State Small Business Credit Initiative** (SSBCI), allowing the program office to close at the end of FY 2017. The **Community Development Finance Institutions** (CDFI) Fund would experience dramatic changes under the budget. The CDFI Fund has oversight of CDFIs, which provide capital access to businesses and individuals in under-served markets, New Markets Tax Credits (NMTC), and a few other programs targeted to disadvantaged populations. The White House's proposal would cut all program funding from the CDFI Fund, reducing its budget to \$14 million for administrative expenses, a decrease of \$234.0 million (94.4 percent). Funding for NMTCs and the Bond Guarantee Program would continue (funds do not come from the discretionary budget process), and staff would continue to monitor CDFI certification and performance.

Environmental Protection Agency

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The administration's budget proposal would dramatically reduce funding throughout the EPA. The **Office of Science and Technology**, which houses the Agency's R&D and tech transfer initiatives, would be reduced by \$263 million to \$450.8 million (36.8 percent decrease).

Specific changes to the Office of Science and Technology include eliminating funding for the Science to Achieve Results program, which funds research grants, SBIR contracts and graduate fellowships, as well as the following:

- Research: Air and Energy — \$30.6 million (\$61.3 million, 66.7 percent decrease), including eliminating climate change research and reducing air quality research;
- Research: Safe and Sustainable Water Resources — \$68.5 million (\$37.8 million, 35.6 percent decrease), including "streamlining" support and technology transfer, eliminating water recovery and advanced systems research;
- Research: Sustainable Communities — \$54.2 million (\$80.1 million, 59.6 percent decrease), including "streamlining" environmental research and Health Impact Assessment methodology;
- Research: Chemical Safety and Responsibility — \$84.2 million (\$42.7 million, 33.6 percent decrease);
- Research: National/Congressional Priorities — eliminated (\$4.1 million in FY 2017); and,
- Workforce Reshaping — \$11 million (new spending) for costs related to terminating or reassigning staff.

The budget proposal would also double the resources available within EPA (\$20 million in FY 2018) to administer and support the Water Infrastructure Finance and Innovation Act (WIFIA), which can be used to facilitate the financing of regionally- and nationally-significant water projects. This funding level is anticipated to provide up to \$1 billion in credit support on a potential \$2 billion infrastructure investment.

NASA

Unless otherwise noted, all FY 2018 figures are from the department's [budget justification](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The **Science Mission Directorate** within the National Aeronautics and Space Administration would receive \$5.7 billion in the president's proposed FY 2018 budget, a \$53.1 million (0.9 percent) decrease from FY 2017. Within the directorate, the following research areas would receive funding:

- \$1.9 billion for **planetary science**, a \$83.5 million (4.5 percent) increase from FY 2017;
- \$1.8 billion for **earth science**, a \$166.9 million (8.7 percent) decrease from FY 2017;
- \$816.7 million for **astrophysics**, a \$66.7 million (8.9 percent) increase from FY 2017;
- \$677.8 million for **heliophysics**, a \$700,000 (0.1 percent) decrease from FY 2017; and,
- \$533.7 million for the **James Webb Space Telescope**, a \$35.7 million (6.3 percent) decrease from FY 2017.

NASA's **Space Technology Mission Directorate** would receive \$678.6 million in FY 2018 under the president's proposed budget, a \$7.9 million (1.2 percent) decrease. While the FY 2017 budget did not include individual program funding levels for the directorate, the FY 2018 proposed budget would allocate:

- \$466.7 million for **Space Technology Research and Development**;
- \$31.9 million for **agency technology and innovation**; and,
- \$180.0 million for **SBIR and STTR**.

The president's proposed FY 2018 budget would eliminate the **Office of Education** within NASA, though the office would receive \$37.3 million in FY 2018 to wind down operations. This office, which supports outreach and programming around STEM education, received \$100 million in FY 2017.

National Science Foundation

Unless otherwise noted, all FY 2018 figures are from the foundation's [budget justification](#), and, to provide the most detailed funding comparison, FY 2016 actuals were taken from the budget justification.

The president's FY 2018 budget proposal for the **National Science Foundation** (NSF) would provide \$6.7 billion – a \$840.9 million (11.2 percent) decrease in funding. Of that amount:

- \$5.4 billion, a \$636.4 million (10.6 percent) decrease, would be designated for research and related activities;
- \$183 million, a \$58.7 million (24.3 percent) decrease for R&D facilities and equipment; and,
- \$761 million, a \$123.6 million (14 percent) decrease for education and training.

Nearly 90 percent of NSF funding is awarded through a merit-review process that includes distribution of grants and cooperative agreements.

NSF directorates, offices and commission

NSF is organized into several directorates, offices and a commission. FY 2018 funding for these entities (both discretionary and mandatory) would include:

Directorate, Office or Commission	FY 2018 Request (\$ millions)	Percent Change (From FY 2016 actual)
Mathematical & Physical Sciences	1,219.4	-9.6%
Engineering	833.9	-9.0%
Computer & Information Sciences & Engineering	838.9	-10.3%
Geosciences	783.3	-10.6%
Biological Sciences	672.1	-7.1%
Integrative Activities	315.7	-26%
Social, Behavioral & Economic Sciences	244.0	-10.4%
International Science and Engineering	44.0	-10.3%
Arctic Research Commission	1.4	0%

The administration's FY 2018 request for research and related activities within NSF directorates and offices would total \$5.4 billion, a \$636.4 million (10.6 percent) decrease. Selected programs from NSF directorates and offices include:

- **Industrial Innovation and Partnerships (IIP)** — \$223.2 million, a \$16.7 million (6.9 percent) decrease, to support the commercialization and technology transfer efforts of institutions of higher education. Programs of interest within the IIP budget request include **Partnership for Innovation** program, **Industry/University Cooperative Research Centers (I/UCRC)** program, and **Accelerating Innovation Research (AIR)** program. The IIP administers the **Small Business Innovation Research (SBIR)** and **Small Business Technology Transfer (STTR)** programs that would receive \$176.2 million – a \$12.3 million (6.5 percent) decrease;
- **Emerging Frontiers (EF)** — \$137.3 million, a \$51.8 million (60.5 percent) increase;
- **Experimental Program to Stimulate Competitive Research (EPSCoR)** — \$100 million, a \$60 million (37.5 percent) decrease; and,
- **Emerging Frontiers and Multidisciplinary Activities (EFMA)** — \$36.8 million, a \$17.6 million (32.4 percent) decrease.

The administration's budget also would task NSF with supporting research that would strengthen the foundation of STEM education. Centered in the **Directorate for Education and Human Resources (EHR)**, some key initiatives include:

- \$246.5 million, an \$85.8 million (25.8 percent) decrease, for **Graduate Research Fellowships (GRF)**;
- \$96.5 million, an \$8.3 million (7.9 percent) decrease, for **Improving Undergraduate STEM Education (IUSE)**; and
- \$33.1 million, a \$2 million (6.5 percent) increase, for **NSF Research Traineeships (NRT)** to support effectual innovation and design of graduate programs within specific disciplines.

The budget provides several allocations for NSF contributions to several multiagency initiatives including:

- \$1.1 billion, a \$156.7 million (13 percent) increase, for **Networking and Information Technology Research and Development (NITRD)**;
- \$386.1 million, a \$121.8 million (24 percent) decrease, for the **National Nanotechnology Initiative (NNI)**; and,
- \$264.1 million, a \$66.6 million (20.1 percent) decrease, for the **U.S. Global Change Research Program (USGCRP)**.

NSF centers programs

The president's budget request for NSF includes \$201 million, a \$9.4 million (4.5 percent) decrease for center programs, which are a principal means by which NSF fosters interdisciplinary research. NSF programs include:

- **Engineering Research Centers (ERCs)** — \$57.5 million, a \$0.7 million (2 percent) increase;
- **Materials Research Science & Engineering Centers (MRSECs)** – \$55 million, a \$0.5 million (0.9 percent) decrease;
- **Science & Technology Centers (STCs)** — \$60.9 million, a \$15.8 million (35.1 percent) increase;
- **Centers for Chemical Innovation (CCIs)** — \$21.6 million, a \$6.5 million (23.1 percent) decrease; and,
- **Centers for Analysis & Synthesis** — \$6 million, a \$12.6 million (67.7 percent) decrease, toward the development of new tools and standards for the management of biological information and to support data analysis capabilities across the country.

The president's budget will eliminate all program funding for the **Nanoscale Science & Engineering Centers (NSEs)** program — centers to support research to advance the development of ultra-small technology in electronics, materials, medicine, environmental science and other fields.

Several of NSF-wide investments are reduced over the FY 2016 actuals including:

- **NSF Innovation Corps (I-Corps™)** – \$26.2 million, a \$3.6 million (12.1 percent) decrease;
- **Cyber-Enabled Materials, Manufacturing and Smart Systems (CEMMSS)** – \$222.4 million, a \$49.1 million (18.1 percent) decrease;
- **Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS)** – \$24.4 million, a \$55.7 million (69.5 percent) decrease;
- **Risk and Resilience Research Projects** – \$31.2 million, an \$11.8 million (27.4 percent) decrease;
- **Secure and Trustworthy Cyberspace (SaTC)** – \$113.8 million, a \$16 million (12.3 percent) decrease; and,
- **Understanding the Brain (UtB)** – \$134.5 million, a \$38.3 million (22.2 percent) decrease.

While other NSF-wide investments saw decreases, the **Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)** received \$14.9 million, a \$0.9 million (6.5 percent) increase;

Selected crosscutting programs

In addition to the NSF-wide investments, the president's budget includes funding for several crosscutting programs that draw on interdisciplinary teams from across the NSF and are supported by multiple directorates. They include:

- \$242.2 million for the **Faculty Early Career Development** (CAREER), a \$38.5 million (13.7 percent) decrease;
- \$74.7 million for **Research Experiences for Undergraduates** (REU), a \$23 million (23.5 percent) decrease;
- \$35.3 million for the **Research in Undergraduate Institutions** (RUI), an \$8.2 million (18.8 percent) decrease);
- \$29.4 million for the **Long-Term Ecological Research** (LTER), a \$1.2 million (3.9 percent) decrease; and,
- \$4.9 million for the **Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers** (ADVANCE) program, a \$10 million (67 percent) decrease.

In FY 2018, the president's budget would allocate \$97 million in new funding for the **National Strategic Computing Initiative** (NSCI) to advance national leadership in High-Performance Computing (HPC) and maximize the benefits of HPC for scientific discovery and economic competitiveness. NSF is one of three lead agencies for NSCI, with the Department of Defense and the Department of Energy.

Under the proposal, funding would end for several programs in FY 2018 including: **Science, Engineering and Education for Sustainability** (SEES) program and the **Cyberinfrastructure Framework For 21st Century Science, Engineering And Education** (CIF21) program. With the intent of integrating future efforts into other core programs, the Research at the Interface of Biological, Mathematical and Physical Sciences and Engineering (BioMaPS) would receive \$1.9 million only to support remaining continuing grant increments (CGIs) in FY 2018.

Regional Commissions

Unless otherwise noted, all FY 2018 figures are from the other independent agencies' [budget proposal](#), and all FY 2017 figures are from committee reports for the [Consolidated Appropriations Act of 2017](#).

The president's FY 2018 [budget proposal](#) includes requests for four regional commissions with the funds appropriated only for the purposes of closure of these commissions, including:

- \$31 million for the **Appalachian Regional Commission** (ARC);
- \$7.3 million for the **Denali Commission**;
- \$2.5 million for the **Delta Regional Authority** (DRA); and,
- \$850,000 for the **Northern Border Regional Commission**.

These new funds and unobligated balances appropriated prior years will be available for the ongoing administration, oversight, and monitoring of grants previously awarded by the Commissions.

In the FY 2017 approved budget, Congress showed strong bipartisan support in the appropriations for these four commissions including: \$152 million to ARC (the commission's largest appropriation in its history); \$25 million to DRA; \$15 million to the Denali Commission; and, \$10 million to the Northern Border Regional Commission. The \$152 million to ARC included funding for the ARC's contribution to the **Partnerships for Opportunity and Workforce and Economic Revitalization** (POWER) grants program.

Small Business Administration

Unless otherwise noted, all figures are from the department's [budget justification](#).

The administration's FY 2018 budget would eliminate several programs providing support to entrepreneurs and small businesses, including FAST, a grant program that targets improved participation in SBIR/STTR, particularly for women and minorities, and the Regional Innovation Clusters and Growth Accelerators programs. SBA's **Entrepreneurial Development Programs** would be cut by \$52.6 million to \$192.5 million (21.5 percent decrease), while Business Loan Programs would hold nearly steady at \$156.2 million (\$1.5 million, 1.0 percent decrease).

Among the cuts to **Entrepreneurial Development Programs** are several initiatives specifically targeting innovation- and technology-focused entrepreneurship, as depicted in the following table.

SBA Entrepreneurial Development Programs	FY 2018 Proposal (\$ millions)	Change from FY 2017 (\$ millions)	Change from FY 2017 (%)
Regional Innovation Clusters	0.0	-5.0	-100%
Growth Accelerators	0.0	-1.0	-100%
Entrepreneurship Education	2.0	-8.0	-80.0%
PRIME Technical Assistance	0.0	-5.0	-100%
SCORE	9.9	-0.6	-5.7%
SBDC	110.0	-15.0	-12.0%
Veterans Outreach	11.3	-1.0	-8.1%
Women's Business Centers	16.0	-2.0	-11.1%
Total	192.5	-52.6	-21.5%

Regional Innovation Clusters is a program that has demonstrated impact in its tenure. From an FY 2016 study of companies participating in the 14 SBA-funded regional clusters, 49 percent of participants achieved a patent or licensing success and 59 percent experienced revenue growth (study cited in the SBA's [FY 2018 Congressional Budget Justification](#)).

SBA would also be expected to evaluate the SBIC program (at a cost of \$500,000) and has pledged to push for reauthorization of SBIR/STTR during FY 2017.

[Sequestration: The other budget threat](#)

One complication for the FY 2018 budget process is that discretionary spending is scheduled to decrease by billions from FY 2017 levels. The reason for this decrease is Congress' solution to previous spending impasses: the *Budget Control Act of 2011* (BCA). This act set limits on how much can be spent on defense and non-defense discretionary spending for future years. While Congress frequently authorizes additional spending beyond the caps the act sets, if they fail to alter the FY 2018 spending level, it would reduce the discretionary budget by \$110 billion.

Federal spending on the “discretionary” portion of the budget is determined by BCA, which set limits on spending levels through 2021 as a means of ultimately achieving a relatively lower budget but delaying the policy decisions of how to apply the cuts. Discretionary spending is currently about 30 percent of the federal budget and comprises the appropriations for most initiatives apart from interest payments and mandatory spending (e.g., Social Security, Medicare).

BCA’s limits are placed separately on two categories. The “defense” category includes virtually all of the Department of Defense budget, about half of the Department of Energy (particularly the National Nuclear Security Administration) budget, and significant portions of the Department of Justice and Department of Homeland Security. “Non-defense” contains everything else including the Department of Commerce, the National Institutes of Health, the National Science Foundation, and the Small Business Administration.

Congress can increase the BCA’s statutory spending limits. While these limits have been increased at several points since 2011, no baseline increase has been approved for FY 2018 (or beyond). This means the caps for total discretionary spending for FY 2018 are \$1.06 trillion, with \$549 billion for defense and \$515 billion for non-defense. Congress can also authorize emergency spending, which does not apply to the caps. Recently, this method has been used for [Zika virus](#) and [CURES Act](#) funding in 2016. The approved FY 2017 budget included an additional \$117 billion in the discretionary cap for FY 2017.

If Congress does not increase the FY 2018 discretionary cap, it could mean reductions in spending from what was approved for FY 2017 of \$72 billion for defense and \$38 billion for non-defense.

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