

FUNDING

# Trump redoubles plan to slash science spending

Researchers' hopes rest with Congress, which has the power to reject the president's budget.

SOURCE: AAAS

BY SARA REARDON, JEFF TOLLEFSON, ALEXANDRA WITZE & ERIN ROSS

President Donald Trump is continuing his push for drastic cuts to US science programmes across the federal government. Trump's 2018 budget request, released on 23 May, would pare back biomedical, environmental and energy research, and significantly reduce the number of grants given out by agencies such as the National Institutes of Health (NIH) and the National Science Foundation (NSF).

But it is not clear whether Congress will adopt any of the president's suggestions. Lawmakers from both major political parties opposed the broad science cuts for 2018 that Trump previewed in March. And earlier this month, Congress approved a 2017 spending deal that increased support for key science agencies.

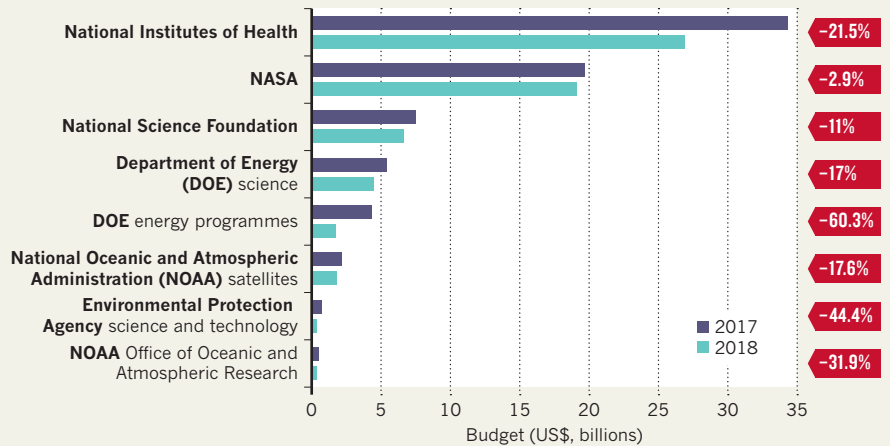
Trump's latest plan "is terrible, and we're confident that Congress will ignore it", says Jennifer Zeitzer, director of legislative relations at the Federation of American Societies for Experimental Biology in Bethesda, Maryland.

Others worry that the proposal will discourage young researchers from sticking with science, whether or not the cuts are adopted. "The presidential voice is very, very powerful," says Michael Lubell, a physicist at the City College of New York in New York City.

Trump's plan would radically reshape the Environmental Protection Agency (EPA), cutting its budget by more than 30% to US\$5.7 billion and laying off 23% of the agency's roughly 15,000 staff members. The White House proposal would eliminate funding to implement regulations to curb greenhouse-gas emissions from power plants. It would also reduce support for the EPA's Office of Research and Development

## THE AMERICAN EXPERIMENT

US President Donald Trump is seeking broad cuts to major science agencies and programmes in the 2018 fiscal year\*, which begins on 1 October 2017.



\*Data compare the FY2018 request to the 2017 enacted level (rather than to the 2017 estimated level used by the White House and federal agencies that is reported in the main article).

to \$277 million, 43% below the 2017 level.

A senior EPA official says that employees are waiting to see how Congress reacts. "People are hanging in there, with the belief that Congress will come through," the official says.

## GRANTS UNDER THE GUN

The NIH would see its budget cut from the current \$31.8 billion in 2017 to \$26 billion in 2018, an 18% drop (see 'The American experiment'). This would be achieved by setting a flat rate for the "indirect costs", or overheads, that the agency pays to grant recipients' institutions. Currently, individual research institutions negotiate with the government to set the rate at which they are reimbursed for administrative and maintenance expenses.

The budget would eliminate the \$70-million

Fogarty International Center in Bethesda, which coordinates with other NIH institutes to train researchers and health-care providers overseas. It would create a \$272-million National Institute for Research on Safety and Quality, which would receive another \$107 million from an established trust fund for patient-centred outcomes research. The new institute would take on the role of the Agency for Healthcare Research and Quality, which would be eliminated.

The budget for the NSF would be slashed by about 11% from the 2016 level, to \$6.7 billion. That would reduce the number of new grants in 2018 to about 8,000, down from about 8,800 in 2016.

Trump would cut programmes in social and behavioural sciences by 10.4%, to ▶

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► \$244 million; computer science by 10.3%, to \$839 million; and geosciences by 10.1%, to \$1.2 billion. The White House also wants to reduce spending on the NSF Office of Integrative Activities, which supports interdisciplinary research, by 26%, to \$316 million.

#### FEWER EYES ON EARTH

NASA would see one of the smallest overall decreases: just 2.8% below the 2017 level. That would bring the agency's budget to \$19.1 billion.

Funding for Earth science would be reduced by 8.7%, to \$1.75 billion. Five Earth-observing missions would be eliminated for reasons such as redundancy with other projects and steep technological challenges. They include the Orbiting Carbon Observatory-3 to measure carbon dioxide from space, and an ocean-colour and aerosols mission called PACE.

Congress has already rejected Trump's bid to eliminate the PACE mission, setting aside \$90 million for the programme in the recent 2017 funding deal.

The White House proposal would increase support for planetary sciences by 4.5%, to \$1.93 billion. That includes \$425 million for a mission to fly past Jupiter's moon Europa, a perennial darling of Congress. The proposed budget continues funding for missions such as the Mars 2020 rover, but does not include

money to begin developing a Mars orbiter to replace those currently in orbit.

Robert Lightfoot, NASA's acting administrator, noted that the proposed science budget would support 60 operating missions and 40 that are under development.

Satellite programmes at the National Oceanic and Atmospheric Administration would also take a hit, falling to \$1.8 billion — \$530 million below the 2017 level. The Joint Polar Satellite System, which collects weather and environmental data, would see funding for its fourth and fifth satellites cut by 51%, or \$189 million.

***“People are hanging in there, with the belief that Congress will come through.”***

The agency's Office of Oceanic and Atmospheric Research would be cut by \$131 million, to \$350 million. Support for climate research would fall by 19%, to \$128 million, and research focused on oceans, coasts and the Great Lakes would be cut by nearly 48%, to \$99 million.

#### ENERGY DRAIN

The US Department of Energy would receive \$28 billion under the president's plan, a 5.3% reduction from 2016.

The department's Office of Science would have its budget cut by 16%, from \$5.3 billion in

2017 to about \$4.5 billion in 2018. The biggest decreases by sheer dollar amount would come from basic energy sciences and biological and environmental research, but nearly all research programmes would feel the pinch. The exception is advanced scientific computing, which would receive a 16% boost, to \$722 million.

Funding for advanced energy technologies would drop by nearly \$2.2 billion, or 53%. That includes a proposed \$1.4-billion cut to the Office of Energy Efficiency and Renewable Energy. The Advanced Research Projects Agency—Energy, which was designed to pursue risky projects that could lead to major breakthroughs, would see its budget drop by 93%, to just \$20 million.

Action on the 2018 budget now moves to Capitol Hill, where the House of Representatives and the Senate will begin formulating their own proposals. ■

#### CORRECTION

The News Feature 'Wood grows up' (*Nature* **545**, 280–282; 2017) mistakenly implied that the Wood Innovation and Design Centre in Prince George is owned by the University of Northern British Columbia. The government of British Columbia owns the building, and the university is a tenant.