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RANKING MEMBER

Congress of the United States
House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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March 9, 2018

The Honorable Steve Womack
Chairman
Committee on the Budget
U.S. House of Representatives
B-234 Longworth House Office Building
Washington, DC 20515

The Honorable John Yarmuth
Ranking Member
Committee on the Budget
U.S. House of Representatives
134 Cannon House Office Building
Washington, DC 20515

Chairman Womack and Ranking Member Yarmuth:

Please find enclosed the Minority Views and Estimates of the Committee on Science, Space, and Technology on the FY 2019 Budget Request. Thank you for your consideration.

Sincerely,

Eddie Bernice Johnson
Ranking Member
Committee on Science, Space, and Technology

Minority Views and Estimates of the Democratic Caucus of the Committee on Science, Space, and Technology on the FY 2019 Budget Request for Submission to the Budget Committee

The President's Fiscal Year (FY) 2019 budget request, while less damaging than his FY 2018 request, continues the trend of making ill-considered funding cuts and underinvesting in the research and development that is critical to the future prosperity, national security, and well-being of the nation. We will not attempt to engage in a detailed discussion of recommended funding levels for specific programs in these V&E, but we urge the Budget Committee, as it works to craft its Budget Resolution to reject the deep cuts to civilian R&D and science and technology programs proposed in the President's FY 2019 budget request and to attempt to provide at least inflationary growth for those programs. We need to invest in our research agencies, NASA, NOAA, NSF, EPA, DOE, and others that help enhance America's economic strength, address our national priorities, advance knowledge, and inspire our youth.

Below are a few key priorities that we wanted to highlight. We hope they will be supported in the Budget Resolution presented to the House of Representatives.

Clean Energy Technologies

DOE funds a wide range of research, development, demonstration and commercial application activities. As we noted last year, given the President's promises to revitalize American infrastructure, we believe strong investments across DOE's energy R&D activities should be a top priority. Instead, the Trump Administration is proposing to cut the Department of Energy's science and technology programs by 22% overall, which would significantly harm the development of new clean energy technologies and do lasting damage to the U.S. research enterprise. These proposed cuts include the *complete elimination* of ARPA-E and the Loan Programs Office (LPO). ARPA-E and LPO have strong records of success to justify not only their existence, but increased investments (in the case of ARPA-E) and increased leveraging of current statutory loan and loan guarantee authorities (in the case of LPO) going forward.

DOE's other energy technology offices would all receive significant cuts from FY 2017 funding levels. Of these, the Office of Energy Efficiency and Renewable Energy (EERE) would receive the largest cut of 66% (or $1.3 billion). EERE's primary mission is to "create and sustain American leadership in the transition to a global clean energy economy." EERE makes crucial investments in energy efficiency; sustainable transportation; energy storage; solar energy; and wind energy, among other areas. Slashing EERE's funding – especially to this degree – is shortsighted and will hurt the global competitiveness of the United States.

The funding cuts for the other energy technology offices are also harmful. Fossil Energy R&D would be cut by 25% (or $166 million), Electricity Delivery and Energy Reliability would be cut by 32% (or $73 million), and Nuclear Energy would be cut by 26% (or $259 million).

The Trump Administration would flat fund the Office of Science compared to FY 2017 funding levels. The Office of Science is responsible for carrying out some of the most important science and energy research programs in the country. Without consistent, strong investments, the world-class user facilities and national laboratories stewarded by the Office will experience setbacks in facility construction, operations, and critical upgrades. Major industrial users, university researchers, and international collaborations that all depend on these facilities would be impacted by these cuts. Within the Office of Science, the Biological and Environmental Research program, which includes the bulk of DOE's climate science research, would be cut by $112 million or 18%, Fusion Energy Sciences would receive a $40 million cut or 10.5%, and High Energy Physics would receive a $55 million cut or 6.7%. The ITER international fusion energy project would receive $75 million, a $25 million increase over FY 2017 funding levels, but below the U.S. commitment to the ITER project. Basic Energy Sciences and Nuclear Physics would receive relatively flat funding in this budget request, while the Advanced Scientific Computing Research program would receive $252 million of additional funding, a 39% increase, an increase we support.

Overall, we would urge that these proposed cuts not be reflected in the Budget Resolution.

Strong Environmental Protection Agency

History has shown the value of preserving a strong EPA, an agency committed to protecting public health and the environment. As noted in last year's V&E, while significant progress has been made over the past 40 years, we must now build upon that legacy and ensure that we continue to improve the quality of our environment while fostering a strong economy. In the U.S., a healthy environment and strong economy are not mutually exclusive. Stricter pollution limits help push the envelope of scientific innovation and create new technologies. And, as it has been proven many times over, improved worker productivity, increased agricultural yields, reductions in mortality and illness, and other economic and public health benefits far outweigh the costs of compliance. We should be investing more in EPA, not less.

Unfortunately, the President's budget for FY 2019 for the Environmental Protection Agency requests $6.1 billion, which is a $2.1 billion or a 25.6% decrease from the FY 2017 actual funding levels. Similar to the FY 2018 budget request, the FY 2019 request is comprised of deep cuts to the many programs across the Agency, especially within the Agency's Office of Research and Development (ORD). Proposed funding levels for EPA's Science and Technology programs for FY 2019 are $449 million which is $274.6 million or 38% less than the FY 2017 actual funding levels. Proposed funding for ORD is $262.7 million which is a reduction of $237.7 million or 47.5% below the FY 2017 actual funding levels.

One of the Agency's goals from its FY 2018 - FY 2022 Strategic Plan has an objective to "Prioritize Robust Science" by strengthening alignment of its research to support EPA programs and working closely with key state level partners. However, almost all programs within the Science and Technology account have proposed cuts, with over half of those budget reductions coming from cuts to ORD. Research and development activities at the agency would focus on intramural research activities directly related to statutory requirements, or that support basic or early stage R&D, and would eliminate funding for extramural research activities.

The former Climate Protection Program, which supports the Greenhouse Gas Reporting Program, was renamed the "Atmospheric Protection Program" in the FY 2019 request and all funding for it was eliminated in the Science and Technology Appropriation for FY 2019. Similar to the FY 2018 request, all climate change research within ORD has been proposed to be eliminated, as well as the Agency's extramural Science to Achieve Results (STAR) Research Grants throughout ORD's national research programs.

We would urge the Budget Committee to reject the proposed funding cuts to EPA when it crafts its Budget Resolution.

Climate Change Research

Each month the scientific evidence on climate change grows and it is confirming what the majority of climate scientists have been saying for some time. The Earth is warming, and Americans everywhere are dealing with the consequences of this new climate reality. Our coastal communities are watching the sea inch closer to their doorsteps. Families in the Southwest are facing increasingly severe drought and wildfire conditions. Extreme weather events such as heavy precipitation are becoming more frequent across the nation, and 2017 and early 2018 have given ample evidence of the increase in such extreme events. Climate change may be the defining scientific and policy challenge facing humanity, and we have a responsibility to the nation and the world to lead. We must invest in—not cut back on—the scientific research at NASA, NOAA, and our other agencies that will increase our understanding of the problem and provide for solutions and resist efforts to cut funding for this area of research.

Civil Space and Aeronautics

The National Aeronautics and Space Administration (NASA) has long been recognized as the world leader in aeronautics and space research and exploration. We support robust funding that will allow NASA to maintain a balanced and healthy portfolio of programs in aeronautics, Earth and space science, technology development, and human spaceflight and exploration, as well as allowing investments in the infrastructure that will be required if NASA is to carry out the tasks our nation has given it.

It is also imperative that funding for the next generation of NOAA's weather satellites be maintained to ensure that those satellite programs remain on track for successful development and launch.

With respect to NASA, the President is requesting $19.892 billion for NASA for FY 2019, a $239 million (1.2%) increase over the level of funding appropriated for NASA in the FY 2017 Consolidated Appropriations Act and $20 million over the level for NASA included in the appropriation passed by the House for FY 2018. As part of its FY 2019 budget request, the Administration is proposing to refocus the agency on exploration, specifically exploration of the Moon. To that end, the proposed FY 2019 budget identifies an aggregate of $10.5 billion (about 53% of the total NASA budget request) for the Exploration campaign.

Unfortunately, in its attempt to show its support for lunar exploration under a topline budget for NASA that is assumed to remain flat in the outyears, it has wound up cannibalizing other important NASA activities to fund Exploration. To that point, it should be noted that when NASA's acting CFO gave a public briefing on the President's budget request, he said that the proposed cancellation of WFIRST [the National Academies' highest-rated new Astrophysics mission], five Earth science missions, and the closure of NASA's Education office are because the money is needed for exploration. "We are trying to show some growth in the exploration activities of the Agency in the out-years and those dollars are provided by [taking them from] actives like education and WFIRST and the earth science activities." As the proposed lunar exploration programs become better defined and new resource requirements are identified to support specific exploration activities, there is a significant risk that the non-exploration parts of NASA's budget will be further squeezed. We would urge the Budget Committee to advocate for NASA funding that does not require the cannibalization of NASA's important non-exploration activities.

National Oceanic and Atmospheric Association (NOAA)

The President's FY 2019 budget request for the National Oceanic and Atmospheric Administration is $4.5 billion, a $1 billion cut from the FY 2017 actuals. Multiple climate, ocean, and atmospheric programs will see significant reductions in funding, and even more programs are targeted for total elimination. Specifically,

the budget proposes to reduce funding for surface and marine observations, reduce funding for the tsunami warning program, reduce investments in numerical weather prediction models, reduce investments in the National Water Model, and reduce funding for ocean exploration activities, along with other programs. In addition, the budget proposes to eliminate, or terminate, climate competitive research; the National Sea Grant college program; coastal zone management grants; the Joint Technology Transfer Initiative; arctic research programs; the Air Resources Laboratory; the Big Earth data initiative; aviation science research to operations; and the NOAA Office of Education, along with many other programs.

Most individual program offices under the Committee's jurisdiction are proposed to receive draconian cuts compared to the FY 2017 actual:

- National Ocean Service - $440 million, a decrease of $114 million.
- Office of Oceanic and Atmospheric Research - $322 million, a decrease of $189 million.
- National Weather Service - $1 billion, a decrease of $77 million.
- National Environmental Satellite, Data and Information Service - $1.6 billion, a decrease of $538 million.

We would urge the Budget Committee to reject including such ill-advised cuts in its Budget Resolution.

National Science Foundation (NSF)

The FY 2019 request for the National Science Foundation is $7.472 billion, equal to the FY 2017 funding level. Initially NSF was to be cut by $2.2 billion. That full $2.2 billion was "restored" in the addendum after Congress passed the budget deal. Overall, the Research & Related Activities (R&RA) Directorate would receive a $145 million or 2% increase to $6.15 billion. The Education Directorate would be flat funded at $873 million. The Major Research Equipment and Facilities Construction (MREFC) Account, which funds construction of the large telescopes, research vessels, etc., would be cut by $120 million or 56 %.

To fully realize the potential benefits of NSF's programs, the nation should be investing more in the research sponsored by NSF, not pursuing a budget of stagnation.

National Institutes of Standards and Technology (NIST)

The FY 2019 request for NIST is $890 million, a decrease of $64 million or 7% from the FY 2017 enacted level. However, due to a large increase of $193 million (179%) for building renovation activities at the Gaithersburg and Boulder campuses, this relatively small overall decrease masks significant funding decreases to NIST's core mission areas. Scientific and Technical Research Services - NIST's core measurement research and standards account – would be cut by $117 million, or 17%. There are cuts across the board, but some areas receive much smaller or no cuts, including cybersecurity, resilience of physical infrastructure, and NIST's exploratory measurement science account. Smart grid and other Internet of Things technologies are cut significantly, as are advanced communications technologies and advanced manufacturing. Forensics research is slashed, including elimination of funding for the Forensic Science Center of Excellence awarded in 2015, as well as for the Organization of Scientific Area Committees which lead the forensic standards development process. The Administration is proposing once again to terminate support for three university-based testbeds under the Greenhouse Gas Measurements program, as well as for several other environmental measurements projects across NIST laboratories, including work measuring the impact of aerosols on pollution and climate change, and gas reference materials used by industry to reduce costs of complying with regulations. Support for NIST's two major user facilities, the Center for Neutron Research and the NanoFab, is also cut by 24%.

The Industrial Technology Services Account, which includes the Manufacturing Extension Partnership (MEP) program, and the National Network for Manufacturing Innovation, also known as Manufacturing USA, is cut by $137 million or 90%. This includes a complete elimination of the MEP program.

NIST is one of the most quietly effective of the federal R&D agencies and is worthy of additional support in the Budget Resolution to roll back those cuts.

Department of Homeland Security (DHS)

Science and Technology Directorate

As can be seen in the discussion that follows, even the S&T activities of the Department of Homeland Security have been subjected to significant funding cuts. The President's budget request proposes $583.3 million for the DHS Science and Technology (S&T) Directorate, a nearly $200 million decrease from the FY 2017 enacted level. S&T comprises two accounts: Operations and Support (O&S); and Research and Development (R&D). $40 million of the decrease would come from reductions in O&S including funding for mission support, laboratory facilities, and acquisitions and operations analysis.

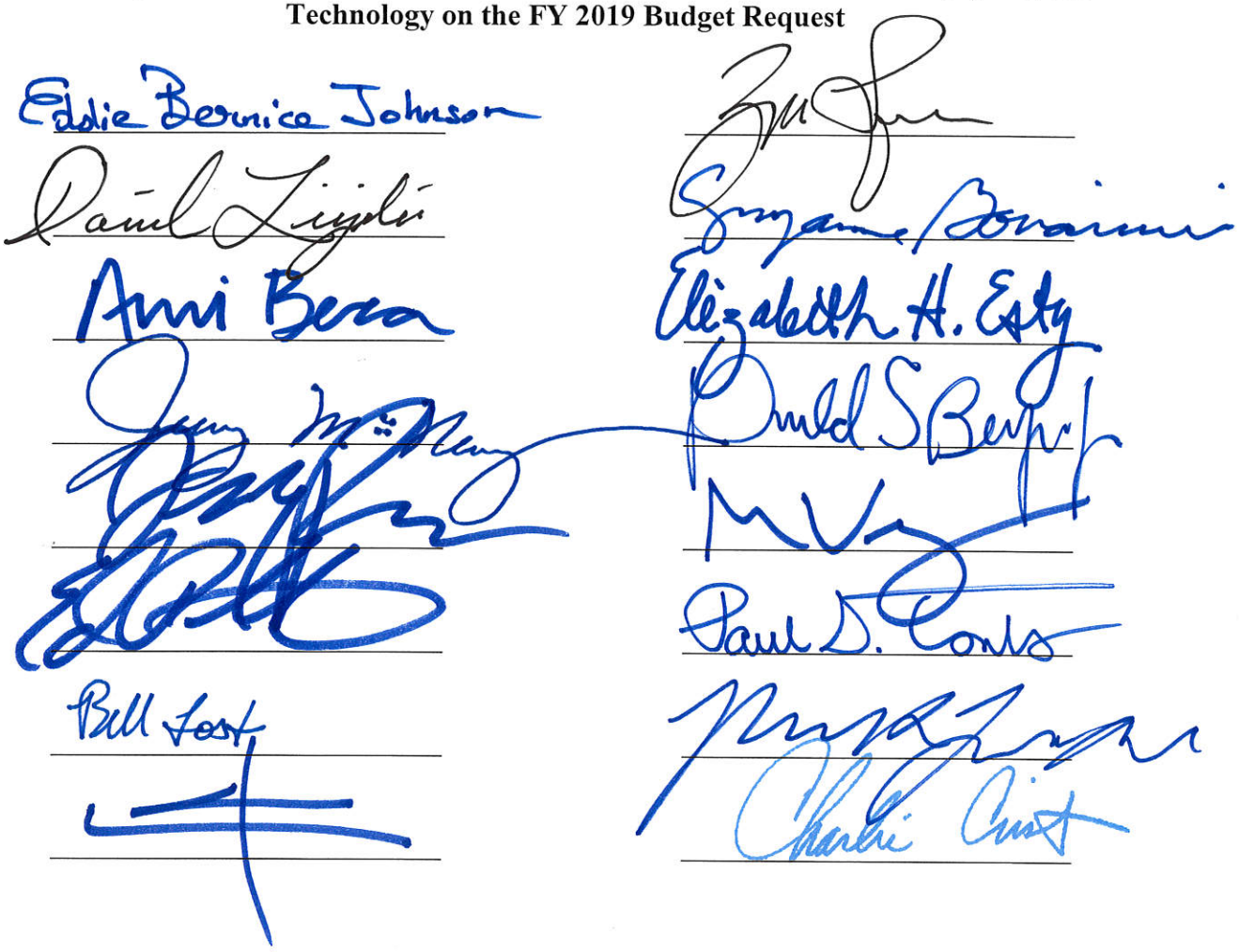
The remaining proposed $160 million decrease would come from reductions or eliminations in the Research, Development and Innovation (RDI) programs, projects, and activities and university programs. The proposal reduces funding to airport screening detection technologies; chemical, biological, and explosives R&D; and first responder and disaster resilience R&D. The request would slash funding for university grant programs by half to $21.7 million and reduce the number of centers of excellence from seven to five.

We urge the Budget Committee to maintain healthy funding levels for the S&T Directorate in the Budget Resolution.

Federal Aviation Administration (FAA)

The budget request for FY 2019 for FAA research, engineering, and development is about $74.4 million, a reduction of $102.1 million (a cut of about 58%) from the $176.5 million appropriated for FY 2017. There has been no convincing rationale offered for such deep cuts, at a time when the nation's aviation system faces growing challenges, and they should be rejected by the Budget Committee as it crafts its Budget resolution.

Minority Views of the Democratic Caucus of the Committee on Science, Space, and Technology on the FY 2019 Budget Request



Minority Views of the Democratic Caucus of the Committee on Science, Space, and Technology on the FY 2019 Budget Request

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