

Congress of the United States
House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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March 13, 2019

The Honorable John Yarmuth
Chairman
Committee on the Budget
U.S. House of Representatives
204-E Cannon House Office Building
Washington, DC 20515

The Honorable Steve Womack
Ranking Member
Committee on the Budget
U.S. House of Representatives
507 Cannon House Office Building
Washington, DC 20515

Chairman Yarmuth and Ranking Member Womack,

Please find enclosed the Minority Views and Estimates of the Committee on Science, Space, and Technology on the FY 2020 Budget Request. Thank you for your consideration.

Sincerely,



Frank D. Lucas
Ranking Member
Committee on Science, Space, and Technology

BUDGET VIEWS AND ESTIMATES OF THE REPUBLICAN MEMBERS OF THE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY FOR FISCAL YEAR 2020

Science and technology are essential to America's national defense and economic security. The basic research our government supports is foundational to our economic success. It allows us to stay at the forefront of cybersecurity, medical treatments, agricultural production, and technological exports.

The Republican Members of the Committee on Science, Space, and Technology will continue to build on the Committee's work over the last eight years to ensure that the United States remains the world's leader in Research and Development. This is not an easy task as we face enormous budget challenges. But it can be done. On a bipartisan basis this year Congress supported \$151.5 billion in Fiscal Year 2019 for federal R&D, a 6 percent increase and the highest point ever in inflation-adjusted dollars.

Committee Republicans will seek to increase support for basic research in the physical sciences. These are the areas with the greatest potential for scientific breakthroughs that will benefit new industries and U.S. jobs. America's universities and research institutions carry out federally-funded basic and fundamental scientific research that drives new discoveries and innovations - creating new companies, new industries, more private sector jobs, and economic growth and security.

Committee Republicans support reauthorizing key federal science agencies, including the National Aeronautics and Space Administration (NASA), the Department of Energy's (DOE's) Office of Science and applied energy programs, the National Science Foundation (NSF), the National Institute of Standards and Technology (NIST), the National Oceanic and Atmospheric Administration's research, data, and weather programs, science and technology at the Department of Homeland Security, and research and development components within the Federal Aviation Administration.

Department of Energy (DOE)

- The minority seeks to prioritize basic research and science as directed in P.L. 115-246, the Department of Energy Research and Innovation Act, which was signed into law in September 2018. The minority seeks to provide researchers in all 50 states with access to world-class user facilities, including supercomputers and light sources at DOE national labs. Federal funding focused on the commercialization of energy technologies often competes with private sector funding, and rarely provides the best investment of taxpayer dollars. A more appropriate role for the federal government sponsoring basic scientific

research that cannot be undertaken by industry, often carried out in universities and the DOE national labs.

- The minority supports robust funding for the DOE Office of Science account funding level in Function 250. The minority will seek to prioritize basic research in the physical sciences, with specific focus on providing funding to high performance computing, nuclear physics, high energy physics, fusion energy sciences, and investments in critical user facility upgrades across the DOE national lab complex.
- The minority supports responsible funding for the DOE applied energy research programs, prioritizing early-stage research applied research that cannot be undertaken by industry. This includes investing in user facilities and computing capabilities that facilitate the demonstration of technologies to improve the efficiency, affordability, and reliability of all forms of energy.
- The minority recognizes that nuclear power is a vital emissions-free energy source, and seeks to prioritize nuclear energy R&D in accordance with P.L. 115-248, the Nuclear Energy Innovation Capabilities Act, which was signed into law in September 2018. This legislation authorizes the construction of the Versatile Test Reactor user facility, and combines the strengths of the DOE national labs, universities, and the private sector in the establishment of the National Reactor Innovation Center. These are critical tools necessary to facilitate private sector development of advanced nuclear reactor technology, and the minority is committed to ensuring full implementation of this legislation.
- The National Quantum Initiative Act (P.L. 115-368) was signed into law by the President in December 2018. This legislation authorizes basic research in quantum information science within the DOE Office of Science, and the establishment of up to five National Quantum Information Science Research Centers. The minority supports full implementation of this legislation.
- The minority seeks to promote collaborative, interagency research partnerships that leverage DOE's world-class computing capabilities. The minority supports passage of H.R. 617, the Department of Energy Veterans' Health Initiative Act, which authorizes the continuation of the MVP-CHAMPION partnership with the Department of Veterans Affairs, and a two-year DOE pilot program to advance research in artificial intelligence, data analytics, and computational research. Through this legislation, the minority strives to further enhance DOE's computing capabilities to meet nuclear science, energy, and security mission goals of the Department.

Environmental Protection Agency (EPA) Science

- EPA funding should be reflective of the Agency's mission focus of protecting human health and the environment. Office of Research and Development resources should be focused on meeting EPA program and regional office priorities to prevent waste and promote efficiency.

National Science Foundation (NSF)

- The minority supports NSF's efforts to promote interdisciplinary research across its research directorates through the "10 Big Ideas," which are high-priority areas that integrate multiple fields of science and engineering and create opportunities to partner with industry, private foundations, other federal agencies and the education sector. Last year's budget request called for NSF to invest \$60 million in two Convergence Accelerators – new vehicles to leverage resources across the agency to support the most innovative science, pursuant to the Harnessing the Data Revolution and The Future of Work at the Human Technology Frontier Big Ideas. The minority supports prioritizing funding for NSF to continue these initiatives, while maintaining core research funding in priority areas like math and physical sciences, computer information science, engineering, and biological science.
- The National Quantum Initiative Act (P.L. 115-368) was signed into law by the President last Congress. As part of the initiative, NSF is directed to carry out a basic research and education program on quantum information science and engineering. It also provides for NSF to award grants for the establishment of Multidisciplinary Centers for Quantum Research and Education. The minority will push for full implementation of policy provisions in P.L. 115-368,
- The minority will ensure that federally funded research conducted through NSF, and all agencies, is in the national interest. Throughout its history, the NSF has played an integral part in funding breakthrough discoveries in fields as diverse as mathematics, physics, chemistry, computer science, engineering and biology. A defined "national interest" requirement and criteria, as part of the American Innovation and Competitiveness Act (P.L. 114-329), has gone a long way towards ensuring the grant-making process at NSF is transparent and accountable to the American public.

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

- The Administration recently released its 5-year STEM strategic plan, "Charting a Course for Success: America's Strategy for STEM Education." The three guiding objectives of the plan are to (1) build strong foundations for STEM Literacy; (2) increase diversity, equity, and inclusion in STEM; and (3) prepare the STEM workforce of the future. The minority supports and applauds these objectives and looks forward to following the subsequent implementation of the plan by federal science agencies.
- The federal government invests more than \$4.3 billion into 255 different programs with the primary goal of growing the STEM workforce. Despite these investments, the number of students prepared for STEM degrees, pursuing STEM degrees, and staying in STEM careers continues to lag. While the minority believes these investments are of critical importance, it is also important to ensure they are not duplicative. It should be a priority for these agencies to improve the coordination of STEM education and workforce

development activities across the Federal agencies, including disseminating the latest discoveries on what works in teaching and learning and facilitating equal access.

- Last Congress, the president signed into law the “Innovations in Mentoring, Training and Apprenticeships Act” (P.L. 115-975). The minority will push to build off this progress and continue its work to ensure the American workforce has the flexible STEM skills needed to compete in the global economy. The number of U.S. jobs that require STEM skills has grown nearly 34 percent over the past decade and is expected to continue this trajectory. To remain competitive, the U.S. needs flexible STEM-capable works at every education level. A well-educated, trained and diverse STEM proficient workforce ensures our future economic prosperity.

National Institute of Standards and Technology (NIST)

- Last Congress, the president signed into law the “National Quantum Initiative Act” (P.L. 115-368). At NIST, the bill supports basic quantum information science research and standards development and provides funds to convene a workshop to examine the development of a quantum science and technology industry. These investments will allow the U.S. to take the lead in developing global quantum standards and measures. The minority will push for full implementation of policy provisions in P.L. 115-368.
- The minority supports prioritizing NIST’s core lab capabilities in the Scientific and Technical Research and Services account to support the transformation of basic research into innovations and new technologies that are critical to America’s industrial competitiveness, with a focus on emerging technology areas.
- It is important that NIST remains a global leader in cybersecurity knowledge, scientific standards-setting, and research and analysis of cyber security readiness. NIST should also prioritize its fundamental and applied cybersecurity research to address key questions relating to measurement of privacy, security, and vulnerability of software tools and communication networks, which will be essential as emerging technologies like artificial intelligence and internet of things are adopted.

National Aeronautics and Space Administration (NASA)

- With President Trump’s enactment of P.L. 115-10, the NASA Transition Authorization Act of 2017, the Committee has reignited America’s pioneering spirit for exploration of new frontiers and worlds through reinvigoration of our space science program with the entrepreneurial drive of commercial incentives and ideas.
- The minority will push for full implementation of the policy provisions in P.L. 115-10, as well as for at least maintaining the Fiscal Year 2019 funding level established in the recent omnibus appropriations bill.
- The minority is also cognizant of the counterproductive nature of authorizing funding for NASA that Appropriators are unable to match because of other statutory limitations. The

result leaves NASA with unfunded obligations, fails to set national priorities, abdicates the responsibilities of an authorizing Committee, and sets NASA up for failure.

- NASA should maintain a balanced portfolio of programs, including Deep Space Exploration, Space Operations, Planetary Science, Astrophysics, Earth Science, and Heliophysics, and Aeronautics, while also being conscientious of expending taxpayer funding.
- NASA should ensure that the Space Launch System and Orion programs receive adequate funding to launch Exploration Mission 1 and Exploration Mission 2 on schedule.
- NASA should fully fund the commercial cargo and crew programs and support commercial low earth orbit and lunar payload development.

Department of Commerce

- The Department of Commerce should elevate the Office of Space Commerce in order to enhance its stature in interagency deliberations. The Office should be funded at no less than \$5 million in order to expedite licensing of commercial remote sensing activities as well as additional responsibilities directed in the House-passed American Space Commerce Free Enterprise Act (H.R. 2809, 115th Congress).

Federal Aviation Administration (FAA)

- FAA R&D in FY 2020 should reflect a balanced portfolio of activities that appropriately prioritizes aviation safety. FAA R&D should also assist in the certification of new technologies, particularly unmanned aerial systems (UAS), into the national airspace system (NAS).
- FAA's Office of Commercial Space Transportation should be adequately funded at \$21.6 million to license and permit commercial launch or reentry activities without delay. The Office should focus and prioritize its resources in order to execute these statutory responsibilities and not take on additional work beyond those explicitly tasked by Congress.

National Oceanic and Atmospheric Association (NOAA)

- Fund priority public safety NOAA Weather Research in the Office of Oceanic and Atmospheric Research at the \$131.5 million authorized in P.L. 115-25, the Weather Research and Forecasting Innovation Act of 2017, in Function 300. Saving lives and protecting property must be NOAA's primary mission.
- Provide \$6 million for the NOAA Commercial Weather Data Pilot project out of existing funding in the NOAA Procurement, Acquisition, and Construction account as authorized in P.L. 115-25.

- Improve weather observation data through the required use of observing system simulation experiments and next generation computing and modeling capabilities consistent with P.L. 115-25. This new law provides NOAA with the flexibility to buy new, affordable, and potentially better sources of data from the private sector that have the power to make real improvements to our weather forecasting capabilities and creates a much-needed new \$20 million technology transfer initiative in NOAA's Office of Oceanic and Atmospheric Research.
- Funding for NOAA's climate change programs should be focused on shorter term predictions and local risk planning to mitigate the immediate impacts of climate change and adapt to changing weather patterns.

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