



United States Senate
WASHINGTON, DC 20510-0905

BILL NELSON
FLORIDA

May 26, 2017

The Honorable Thad Cochran
Chairman
Senate Committee on Appropriations
S-128, The Capitol
Washington, DC 20510

The Honorable Patrick Leahy
Vice Chair
Senate Committee on Appropriations
S-146A, The Capitol
Washington, DC 20510

The Honorable Richard Shelby
Chairman
Appropriations Subcommittee on
Commerce, Justice, Science,
and Related Agencies
142 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Jeanne Shaheen
Ranking Member
Appropriations Subcommittee on
Commerce, Justice, Science,
and Related Agencies
125 Hart Senate Office Building
Washington, DC 20510

Dear Chairmen Cochran and Shelby, and Ranking Members Leahy and Shaheen,

While you work to develop the Fiscal Year (FY) 2018 Commerce, Justice, Science, and Related Agencies Appropriations bill, I respectfully request consideration of the following projects, which are of significant importance to Floridians. I am mindful of the fiscal environment in which we are operating and I appreciate your efforts.

NOAA – Procurement, Acquisition, and Construction - Office of Marine and Aviation Operations (OMAO)

NOAA's fleet of 16 oceanographic vessels and nine aircraft is rapidly aging to the point where poor reliability compromises the ability of the infrastructure to meet the agency's current and future needs.

Hurricane Hunter Aircraft Backup Capability

I strongly urge you to include \$62 million in FY 2018 (consistent with estimates) to acquire and install the necessary equipment package on an additional aircraft equipped to fly above hurricanes. NOAA maintains two P3 aircraft that fly into hurricanes and one Gulfstream that flies above hurricanes. I am gravely concerned that NOAA's only Gulfstream was grounded during Hurricane Hermine reconnaissance missions for emergency corrosion repair. NOAA currently has no backup capability for this aircraft—which provides life and safety data. I introduced legislation that was included in Public Law 115-25, which passed the Senate unanimously and was signed by the president last month, to ensure that this single-point-of-failure is addressed.

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New Vessel Construction

I support the committee's continued investment in new vessel construction consistent with NOAA's Fleet Recapitalization Plan, which will capitalize on existing designs to minimize incremental cost and construction time. NOAA's fleet plan recommends construction of at least eight new research vessels. The Commerce Committee has favorably reported the bipartisan Coast Guard Authorization Act, including a requirement that NOAA complete a plan regarding homeport facilities in Ketchikan, Alaska and St. Petersburg, Florida. These strategic locations would be available to house and maintain two vessels from the NOAA fleet.

NOAA – Procurement, Acquisition, and Construction - National Environmental Satellite, Data, and Information Service (NESDIS)

I urge you to support the continuity of the nation's constellation of geostationary and polar-orbiting weather satellites and to invest in two critical life and safety missions—the Polar Follow On (PFO) and the Cooperative Data and Rescue Services (CDARS). NOAA satellites support weather forecasting, climate observation, national defense, and almost every aspect of the economy from shipping to agriculture. Failing to adequately support and recapitalize these assets would be dangerous and costly.

Polar Follow On (PFO)

To maintain the schedule and avoid a data gap, I urge you to fund the PFO at \$586 million. Continued investment in the PFO is essential to support a reliable weather forecast system. As the NESDIS Independent Review Team found in April 2017, "...JPSS program experience indicates that to meet these launch dates, *there is not enough time to embark on a new technological approach.*" In other words, failure to fund the PFO now sufficiently in support of launch readiness dates in fiscal years 2024 and 2026 would pose an unacceptable and significant risk of a catastrophic gap in critical weather data. The polar orbiting weather satellites provide the primary inputs (up to 85 percent) for numerical weather prediction models that warn us about high-impact events like tornadoes and hurricanes.

Cooperative Data and Rescue Services (CDARS)

I urge you to fund CDARS at \$49 million for FY 2018. The CDARS program supports two important sensors: Argos and the Search and Rescue Satellite-Aided Tracking System (SARSAT). CDARS will require \$49 million in FY 2018 to support a 2021 launch date. SARSAT is credited with saving over 39,000 lives worldwide since 1982, including over 7,000 lives in the United States alone. If the CDARS instruments are not launched by 2021 and there is a gap in service, wait times for search and rescue may increase by up to five hours. In many instances, a delay may be fatal.

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NOAA – Operations, Research, and Facilities- Office of Oceanic and Atmospheric Research (OAR)

The innovative research conducted by OAR and by extramural grantees of the line office help NOAA fulfill its missions, spur job creation, and save lives and property. For example, research conducted at OAR's Cooperative Institute for Marine and Atmospheric Science holds promise in improving prediction of increased tropical storm and hurricane activity by as much as 3-4 weeks in advance of storm formation. I urge the committee to continue to fund the essential job-creating and life-saving research functions at OAR.

National Sea Grant College Program

I urge you to fund the National Sea Grant College Program at \$63 million for FY 2018, consistent with FY 2017 enacted levels. The National Sea Grant College Program has a history of proven success in education, extension, and research. From 2015 to 2016, Sea Grant helped create or sustain 21,000 jobs nationwide. In Florida, the Sea Grant program represents a partnership of 18 universities and labs, and has drawn dollar-for-dollar investments to match federal funding. For every federal dollar invested in Florida Sea Grant, there is a \$123 return on investment in areas from aquaculture to hurricane preparedness and risk reduction.

Climate Research

I urge the committee to provide at least level funding (\$158 million) for Climate Research. Florida is ground zero for the impacts of climate change. Coastal residents are already experiencing the economic impact of impassable flooded streets during business hours. NOAA and NASA data indicated that 2016 was the warmest year on record globally, and 2017 is on track to be the second warmest. This is not the time to cut funding for research on climate change.

Weather & Air Chemistry Research

I urge the committee to continue funding Weather and Air Chemistry Research consistent with FY 2017 enacted levels of \$158 million. Floridians face severe weather, including deadly thunderstorms and tornadoes. Programs like Vortex-Southeast ensure that tornado detection rates improve, saving lives and property. Continued funding is essential for public safety.

NOAA – Operations, Research, and Facilities- National Ocean Service (NOS)

Coastal Zone Management Grants

I urge the committee to invest \$85 million in Coastal Zone Management Grants, which also includes Regional Coastal Resilience initiatives that encourage regional and interstate collaboration on shared coastal challenges. This funding level is consistent with the FY 2017 enacted appropriations. Since 1972, the Coastal Zone Management Act has formalized a state-federal partnership for the management of our coastal areas. This is essential because the coastal zone contributes \$359 billion to the Gross Domestic Product. Though coastal counties only make up 10 percent of the nation's landmass, they support 39 percent of the population. By giving states a say in federal activities that may impact their coastal resources and uses, the Coastal Zone Management Act empowers local decision-making.

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National Estuarine Research Reserves (NERRs)

I request that you fund the NERRs at \$23.5 million, consistent with FY 2017 enacted level. Twenty-nine NERRs provide research and educational opportunities in unique estuarine ecosystems across 24 states. The NERRs comprise some 1.3 million acres of protected space dedicated to research and education. Each year, around 85,000 students and 3,200 teachers take the opportunity to use the NERRs to learn about science, technology, engineering, and math. Over 100 universities and research institutions partner with the NERRs on science and monitoring. In Florida, three reserves showcase the diversity of habitat that can be found along our coast.

Integrated Ocean and Coastal Observing System Regional Observations

I recommend funding the system at \$30.7 million—consistent with the FY 2017 enacted level. The Integrated Ocean Observing System (IOOS) is a partnership between 17 federal agencies and 11 regional associations that represent the entire ocean and Great Lakes coastline of the United States. Floridians benefit from the data gathered and managed in the Southeast Coastal Ocean Observing System, the Caribbean Coastal Ocean Observing System, and the Gulf of Mexico Ocean Observing System. The Commerce Committee favorably reported a reauthorization of the Harmful Algal Blooms and Hypoxia Research and Control Act to improve our ability to predict and respond to toxic algae outbreaks and hypoxic events that foul our water, threatening public health and the economy. IOOS sensors monitor for the presence of toxic algae and the conditions favorable to hypoxic events. From hurricanes to the Deepwater Horizon oil spill, the data assimilated by the IOOS program is instrumental in preparing for natural disaster.

NOAA – Operations, Research, and Facilities- National Marine Fisheries Service (NMFS)
Fishery Science

I urge the committee to continue to provide at least \$169 million, an increase of \$5 million above the FY 2017 enacted level, to maintain steady, stable funding for fishery data collection, surveys, and stock assessments. NOAA's ability to meet the demand for at-sea fishery science research days is limited by an aging fleet. Unmanned Surface Vehicles can extend the limited days at sea in a cost-effective manner. The \$5 million increase should be designated for the acquisition of USV data. Commercial and recreational fishing are a vital part of Florida's economy. According to NOAA, in 2015, commercial and recreational fishing in Florida accounted for 256,000 jobs and \$46.4 billion in sales, and over one-third of all recreational fishing trips in the United States occurred in Florida. The commercial fishing, charter-for-hire, and headboat businesses, as well as the recreational anglers, in Florida and elsewhere around the country, rely on predictable catch limits, quotas, and seasons in federally managed fisheries. The predictability of these management measures, in turn, relies on current and sound fishery independent and fishery dependent data.

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Habitat Conservation and Restoration

I urge the committee to fund the Habitat Conservation and Restoration program at \$52.59 million. Among other initiatives, this level of funding would ensure restoration of endangered Florida elkhorn and staghorn corals. Coral reefs provide nursery grounds for several target fish species and can break dangerous storm surge, protecting vulnerable coastal communities. Florida is home to the third largest reef tract in the world. This region has lost approximately 98 percent of the staghorn and elkhorn corals vital to the health of Florida's coral reefs—which are estimated to be worth about \$8.5 billion in economic impact each year.

NOAA – Operations, Research, and Facilities- Office of Marine and Aviation Operations (OMAO)

Aviation Operations and Aircraft Services

This year, NOAA signed a 10-year lease with Lakeland Linder Airport to serve as the NOAA Aircraft Operations Center (AOC). To facilitate the relocation of the AOC, I urge the committee to fund Aviation Operations and Aircraft Services at \$34,232,000—consistent with the administration's FY 2018 budget request.

NOAA – Operations, Research, and Facilities- Mission Support

Education Partnership Program/Minority Serving Institutions

Since 2001, NOAA has partnered with minority-serving institutions to increase educational opportunities and graduation of students from underrepresented communities in science, technology, engineering, and mathematics. This successful program led to the establishment of the Environmental Cooperative Science Center (ECSC) at Florida Agricultural and Mechanical University (FAMU). The ECSC has trained over 6,700 postsecondary students in NOAA-related sciences, 10 of which work at NOAA, 23 of which work at other federal, state, or local agencies, and 17 of which work in academia. And the ECSC leverages a relatively small federal investment (\$5 million in FY 2017), bringing in an additional \$90 million in outside grants and contracts. Though the FY 2018 request has proposed eliminating this program, I urge you to continue level funding.

NASA

I urge the committee to provide \$20.5 billion for NASA, a 4.3 percent increase over the FY 2017 enacted level. NASA has stated that sustained funding for the agency at a level that keeps pace with economic growth will allow for human missions to Mars in the 2030s along with a balanced science, aeronautics, and technology portfolio, consistent with the NASA Transition Authorization of 2017, Public Law 115-10.

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Within the \$20.5 billion overall funding level, I request: a total of \$635 million for KSC Ground Systems Development and Operations (including \$545 million in the Exploration Ground Systems account and \$90 million in Exploration Construction); \$2.15 billion for the Space Launch System; \$1.35 billion for the *Orion* crew vehicle; \$400 million for Exploration Research and Development; and full funding for the ISS, related Crew and Cargo Services, and the Commercial Crew Program. I also urge you to reject cuts proposed for NASA's Earth Science Program and Education programs, which are two of the NASA programs that have the most immediate and impactful benefits to our daily lives here on Earth.

NASA's heavy-lift Space Launch System (SLS), *Orion* crew vehicle, and Exploration Ground Systems (EGS) are at the most challenging phase of their development. The agency needs funding flexibility and adequate reserves to ensure that issues that arise during this critical development period can be resolved without delays that would ripple through the ambitious exploration agenda NASA has planned for the coming decade. Robust Exploration Research and Development funding is important to make sure development work continues on the other technologies we will need for human trips to Mars, such as advanced propulsion systems like VASIMR and habitation modules and systems, and I urge you to include report language to ensure work on advanced propulsion systems like VASIMR continues.

I would like to call specific attention to the increase in the EGS and Exploration Construction budgets for modifications to the launch pad infrastructure needed to support the upgraded SLS with the new Exploration Upper Stage (EUS) for EM-2, consistent with direction Congress has given to NASA in both appropriations and authorization legislation. For example, a massive new liquid hydrogen cryogenic storage sphere is required to be able to fuel the rocket, and items on the Mobile Launcher like the Crew Access Arm and ground-to-vehicle umbilicals need to be relocated, and the mobile launch tower itself extended, to support the substantially larger launch vehicle for EM-2. I would also note that the increase in FY 2018 is largely associated with non-recurring investments, and would not need to be sustained in its entirety in future years (beyond 2019). If feasible, inclusion of bill language to allow NASA to fund these construction contracts incrementally could help to smooth out the FY 2018 and 2019 funding spikes. Regardless, without an increase in funding to enable the EUS-related work on the ground systems at KSC, the EM-2 launch of SLS with the EUS will certainly be delayed.

Finally, these funding levels do not consider adding crew to the EM-1 launch of SLS and *Orion*. If NASA concludes that adding crew to EM-1 would be sufficiently beneficial to outweigh the additional risk, I would strongly urge whatever additional funding is needed such that the mission can be carried out safely.

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National Science Foundation (NSF)

I strongly support real growth for the NSF, and recommend providing at least \$8 billion for the agency in FY 2018, \$528 million above the FY 2017 appropriation and \$1.346 billion above the administration's FY 2018 budget request. Despite strong bipartisan support for the NSF, the agency's budget has remained relatively flat for several years. This comes as international competitors are increasing investments in science and research, potentially compromising the U.S. edge in technology development and innovation. Increased funding for the NSF could go toward building the STEM workforce of the future, constructing and maintaining national research facilities, and pushing forward the frontiers of U.S. science and engineering research, leading to new discoveries and innovations. In addition, the NSF should maintain a balanced research portfolio with funding priorities validated by scientists.

Building and maintaining modern research infrastructure is critical to the U.S. science enterprise. I support funding for the NSF's major multi-user research facilities currently under construction, including the Daniel K. Inouye Solar Telescope, the Large Synoptic Survey Telescope, and the newly funded Regional Class Research Vessels. In addition, I believe we must do everything we can to maintain older research facilities that still produce good science, like the Greenbank Observatory and the Arecibo Observatory. I recommend \$10 million for each these facilities in FY 2018, both of which also support other government agency missions. Small investments and updates in the NSF's current portfolio of world-class facilities will ensure that the U.S. remains a leader in science and engineering. To that end, I support at least \$70 million for Midscale Research Infrastructure, which was authorized in the American Innovation and Competitiveness Act, Public Law 114-329.

The NSF also plays an important role in preparing students for STEM occupations, a growing sector of the U.S. workforce. I strongly support continued funding for NSF STEM and entrepreneurship programs, including the Graduate Research Fellowship Program, CyberCorps: Scholarship for Service, Advanced Technical Education programs, and NSF's Innovation Corps.

National Institute of Standards and Technology (NIST)

NIST drives U.S. commerce and plays an important role in improving the safety and security of U.S. citizens and companies. I recommend funding NIST at \$1.013 billion for FY 2018, an increase of \$59 million above the FY 2017 appropriation and \$288 million over the administration's FY 2018 request. This level of funding is in accordance with the bipartisan agreement reached by the Commerce Committee in 2016, as reflected in the reported version of the American Innovation and Competitiveness Act.

NIST directly supports manufacturing firms across the nation through the Manufacturing Extension Partnership (MEP). I support \$142 million for the MEP program, which Congress authorized in the American Innovation and Competitiveness Act. This law increased the federal contribution to MEPs in every state. I also support at least \$47 million in funding for Manufacturing USA program, including funds to initiate new institutes, and request the following report language on the program:

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“The Manufacturing USA program promotes American competitiveness by fostering the development new manufacturing techniques and fields, accelerating commercialization, and providing technical assistance to U.S. companies. The committee directs the Secretary of Commerce to establish at least one additional institute and to minimize administrative costs in order to provide more direct support to the regional consortiums.”

For several years, NIST has supported efforts to improve the validity and practice of forensic science for law enforcement purposes. I strongly support funding for NIST to continue oversight of the Organization of Scientific Area Committees (OSACs) and to begin work assess on the foundational validity of key forensic feature-comparison methods, as endorsed by the 2016 report by the President’s Council of Scientific and Technical Advisors.

I also strongly support funding for NIST to continue its vital role in advancing the nation’s cybersecurity, from its public-private development of the Cybersecurity Framework to its technical assistance for the U.S. Election Assistance Commission. The need to provide robust funding for NIST’s various cybersecurity efforts is greater during a time when foreign adversaries remain determined to undermine the foundational democratic institutions of the United States.

Office of Science and Technology Policy (OSTP)

Given the ongoing importance of science and technology to national defense, public health, economic growth, and U.S. leadership in science, I recommend providing OSTP with \$6 million in FY 2018, an increase of \$556,000 over the administration’s FY 2018 request. The OSTP provides advice to the president and executive branch on science and technology policy, programs, and priorities. Dozens of federal departments and agencies across the government conduct scientific research, and OSTP plays in important role in coordinating agency research and in identifying and implementing national research objectives that span multiple agencies.

Department of Commerce (DOC) – Concrete Masonry Products Research, Education, and Promotion Act of 2017

I support inclusion of language identical to that introduced by Senator Roy Blunt and myself in S. 374, the Concrete Masonry Products Research, Education, and Promotion Act of 2017.

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Department of Justice (DOJ) – State and Local Law Enforcement

I ask that you, at a minimum, continue FY 2017 enacted levels of \$376 million for the Edward Byrne Memorial Justice Assistance Grant (Byrne JAG) Program and \$221.5 million for the Office of Community Oriented Policing Services (COPS Office). The FY 2017 amount for Byrne JAG also included \$27 million for pre-inauguration presidential security, which I support. State and local law enforcement agencies across the country rely on a steady stream of funding in order to combat crime and keep us safe through these programs. The Byrne JAG Program provides necessary assistance to state and local programs related to law enforcement, crime prevention, prosecution and courts, public defender services, community corrections, and improved technology. The COPS Office encourages communities and police to work together so that public safety is advanced in an atmosphere of cooperation and trust.

Thank you for your consideration.

Sincerely,



BILL NELSON
U.S. Senator