

# United States Congress

WASHINGTON, DC

February 11, 2022

The Honorable Patrick Leahy  
Chair  
Senate Committee on Appropriations  
United States Senate  
Washington, D.C. 20510

The Honorable Richard Shelby  
Ranking Member  
Senate Committee on Appropriations  
United States Senate  
Washington, D.C. 20510

The Honorable Rosa DeLauro  
Chair  
House Committee on Appropriations  
United House of Representative  
Washington, D.C. 20515

The Honorable Kay Granger  
Ranking Member  
House Committee on Appropriations  
United House of Representative  
Washington, D.C. 20515

Dear Chair Leahy, Ranking Member Shelby, Chair DeLauro, and Ranking Member Granger:

Thank you for your leadership on the Senate and House Appropriations Committees and for your commitment to advancing U.S. competitiveness in the fields of space, science, and technology. As you work to negotiate a final fiscal year 2022 (FY22) Commerce, Justice, Science, and Related Agencies (CJS) Appropriations Bill, we respectfully request that you work with us to ensure the following items related to the National Aeronautics and Space Administration (NASA) are included and prioritized in the final, conferenced bill.

Science, technology, research, and innovation are at the core of America's prosperity. NASA is integral to our nation's STEM-related research, and we support robust funding for programs such as NASA's Space Technology Program, Aeronautics Research and Development, and educational initiatives including NASA's Space Grant Program. It is critical that our country remains competitive in the pursuit of advanced technology and research.

## **Space Nuclear Power and Propulsion**

We strongly support the inclusion of \$10 million for Nuclear Electric Propulsion (NEP) in the House-passed version of the bill, including the language directing NASA to begin a systematic approach to NEP "to allow for opportunities to utilize NEP to meet space exploration mission requirements." NEP is far more efficient than conventional chemical propulsion or Nuclear Thermal Propulsion (NTP). Although its lower thrust-to-weight ratio makes NTP attractive for human exploration missions, promising NEP applications for uncrewed missions demand continued research and investment. We also request that you retain the language in the House-passed version of the bill supporting NASA's development of Fission Surface Power (FSP) technology. FSP will be essential for realizing NASA's goal of a sustained presence on the Moon. The Senate bill calls for NASA to submit a "multi-year plan that enables technology development leading to an in-space demonstration and describes future missions and propulsion and power systems enabled by this capability." We urge you to ensure this report includes FSP.

### **STEM Engagement**

We support the full funding provided for Science, Technology, Engineering, Math (STEM) engagement in both the Senate- and House-passed versions of the bill. The education activities this funding enables will improve opportunities for young Americans from a diverse array of backgrounds, ensure a robust pipeline of scientists and engineers, and cement future U.S. leadership in technical innovation.

### **Communications Services Program**

We support the Senate- and House-passed full funding of NASA's Communication Services Program. This program is a key part of the larger agency plan to transition away from legacy government-owned and operated communication systems to commercially-provided services, supporting the growth of a robust low-earth orbit space economy. We acknowledge language in both versions of the bill emphasizing the importance of planning for this transition, however, and support the request in the House-passed bill for a report to the Committee on the program's long-term vision and structure.

### **Space Technology**

We strongly support the Senate-passed funding of \$1.25 billion for space technology, an increase of almost 30 percent over FY 2021. This investment in cutting-edge technology, like solar electric propulsion and fission surface power, is essential to realizing the nation's ambitious space exploration goals.

### **Aeronautics**

We applaud the increase of more than 12 percent in funding for aeronautics over FY 2021. NASA research in advanced aircraft technologies and systems will continue U.S. leadership in aviation, reduce the environmental impact of commercial air travel, and strengthen industry partners. We support the 14 percent increase in funding for the Transformative Aeronautics Concepts Program included in the president's FY22 budget request. This program's University Leadership Initiative achieves ground-breaking aeronautics research by incentivizing cross disciplinary teams and partnerships between government, universities, and industry. We encourage you to adopt the Senate-passed version of the bill, including language directing NASA to "conduct an assessment of the existing aviation supply chain."

### **Hypersonics**

We support the \$60 million provided for hypersonics technology in the Senate-passed version of the bill, including the provision of \$10 million for collaboration with industry and academia for carbon material testing "that will benefit the next generation of very high temperature composites for hypersonic vehicles." The hypersonics area of aeronautics demands particular attention in the face of recent advancements by other nations that Gen. Mark Milley, Chairman of the Joint Chiefs of Staff, called "very concerning." Full funding for the Aerosciences Evaluation and Test Capabilities will ensure maximum utilization of NASA's hypersonic test facilities, and we support language in the House-passed version of the bill directing NASA to report on the status of the NASA/Department of Defense coordinated assessment of the Hypersonic Tunnel Facility.

### **Biological and Physical Sciences**

We support \$109 million for biological and physical sciences (BPS), as provided in the Senate-passed version of the bill. The BPS division leverages NASA's space-based platforms to perform experiments that cannot be conducted on Earth. The Physical Sciences Program in particular contributes to fundamental and applied research that allow humans to better live and work in space, essential to the nation's human spaceflight aspirations.

### **Research Center Partnership Initiative**

We support the inclusion of the Ohio Aerospace Institute (OAI) Research Center Partnership Initiative in the NASA Special Projects of the Senate-passed version of the bill. This initiative will create new technologies, commercialize existing technologies, and support job creation and job growth. OAI will support the NASA Glenn Research Center mission to drive research, technology, and systems to advance aviation, expand human presence across the solar system, enable exploration of the universe, and improve life on Earth.

### **Defense: Aerospace Propulsion and Facilities**

Finally, in addition to the NASA funding discussed above, we support the funding for Aerospace Propulsion research in the House-passed version of the Department of Defense Appropriations Bill, in particular the \$6 million increase over the Budget Request for a "modular open system architecture for turbine engine technology." This research will support upgrades to engine control systems that are necessary for the U.S. to transition from conventional aircraft propulsion systems to high-efficiency, hybrid, or electric propulsion. In the same House-passed bill, we also support the \$10 million program increase for space testing facilities under line item 66, Test & Evaluation Science & Technology, of Table R-1 Research, Development, Test and Evaluation Defense Wide. The runway construction funded by this item will allow the Department of Defense to fully utilize the important testing facilities of NASA Glenn's Armstrong Test Facility.

Thank you for your continued leadership on space, science, and technology issues.

Sincerely,



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Sherrod Brown  
United States Senator



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Marcy Kaptur  
United States Representative



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Joyce Beatty  
United States Representative



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Tim Ryan  
United States Representative



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Shontel Brown  
United States Representative