

THE ENDLESS FRONTIER ACT

SECTION BY SECTION

Sponsored by Senators Schumer, Young, Hassan, Collins, Coons, Portman, Baldwin, Graham, Peters, Blunt, Daines, Van Hollen, Romney, Kelly

Senate Commerce Committee Consideration

- Introduced as S. 1260 on April 20, 2021.
- On April 14, 2021, the Senate Commerce Committee held a [hearing](#) on relevant legislative topics and innovation ecosystem.
- On May 12, 2021, the Senate Commerce Committee [voted](#) 24-4 to advance the Endless Frontier Act to the Senate floor.
- The Committee approved over 100 amendments to the introduced bill.

Sec. 1. Short Title; Table of Contents

- Would state the Act may be cited as the “Endless Frontier Act.”

Sec. 2. Definitions

- Would set forth definitions of terms used in the bill.

Sec. 3. Sense of Congress

- Would add a Sense of Congress on the importance of bipartisan authorization and funding for innovation, including research at the National Science Foundation (“NSF”) and the Department of Energy (DOE).

Sec. 4. Interagency Working Group

- Would create an interagency working group, led by the Office of Science and Technology Policy (“OSTP”) and including the NSF, DOE, and DOC, among other agencies to coordinate the activities authorized in the legislation and existing activities. It would also direct the working group to ensure that Federal research efforts are complementary and avoid duplication.
- Would require, within 180 days, a review of Federal programs in the key technology focus areas and identification of potential overlap and areas for cooperation.

Sec. 5. Key Technology Focus Areas (“KTFAs”)

- Would task NSF and DOE, in coordination with the interagency working group, with annually reviewing and, if needed, updating the ten key technology focus areas, such as artificial intelligence and quantum science, to guide research and technology development activities.
- *Originally 8Ad(2) in introduced bill*

TITLE ONE

Sec.101. Definitions.

- Would set forth definitions of terms used in title I of the bill.

Sec.102. Directorate Establishment and Purpose.

- Would establish a Directorate for Technology and Innovation within NSF to strengthen U.S. leadership in critical technologies, accelerate technology commercialization, and engage more students.
- Would direct basic and applied research, advanced technology development, and commercialization support in the key technology focus areas. Would direct partnership with other directorates of the Foundation, other Federal research agencies, and stakeholders in academia, the private sector, and nonprofit entities.
- Would require a 10% transfer from the Directorate to the existing offices and directorates of the Foundation, to support basic research in the KTFAs.
- *Originally 8A(b) and (d) of the introduced bill.*

Sec.103. Personnel Management.

- Would allow designation of term-limited program directors to establish research and development (R&D) goals, build research collaborations, and monitor progress.
- *Originally 8A(c) of the introduced bill.*

Sec.104. Innovation Centers.

- Would authorize \$9.57 billion from FY 2022 – FY 2026 for university technology centers and innovation institutes to conduct multi-disciplinary, collaborative research relevant to the key technology focus areas.
- Would require award selection to account for regional and geographic diversity and the capacity to engage industry, workforce, and other organizations.
- *Originally 8A(d)(6) of the introduced bill.*

Sec.105. Transition of NSF Programs.

- Would enable the NSF Director to transfer the management of relevant existing programs to the Directorate, such as convergence accelerators, AI research institutes, and the NSF Innovation Corps.

Sec.106. Providing Scholarships, Fellowships, and Other Student Support.

- Would authorize \$5.22 billion from FY 2022 – FY 2026 in support for STEM education and workforce development in the key technology focus areas, with direction to target populations underrepresented in STEM and to improve geographic diversity.
- Would require that not less than 20% of authorized funds be dedicated to jurisdictions eligible for the NSF EPSCoR program.
- *Originally 8A(e) and 8A(d)(5) of the introduced bill.*

Sec.107. Research and development.

- Would authorize \$4.35 billion from FY 2022 – FY 2026 for research and development awards in the key technology focus areas.
- The purpose of the R&D would be to demonstrate revolutionary technological advances in the KTFAs (similar to DARPA), including advances that expedite short-term technology deployment.

Sec.108. Test beds.

- Would authorize \$2.9 billion from FY 2022 – FY 2026 for NSF, in coordination with NIST, for the establishment and operation of testbeds.
- Would require annual interagency meetings of all agencies with testbed programs to coordinate their investments and avoid inappropriate duplication.
- *Text pulled from 8A(d)(8) of the introduced bill.*

Sec.109. Academic technology transfer.

- Would authorize \$4.06 billion from FY 2022 – FY 2026 for an NSF program to improve technology transfer in academia, to be carried out in coordination with NIST.
- Would authorize the creation of regional collaborative tech transfer resource centers.
- *Originally 8A(d)(7) of the introduced bill.*

Sec.110. Capacity-building program for developing universities

- Would create an intensive capacity building program for minority-serving institutions or institutions with established STEM capacity building programs focused on traditionally underrepresented populations at NSF.
- Would authorize \$150 million per year for FY 2022 – FY 2026 for the program from otherwise authorized funds.

Sec.111. Technical assistance.

- Would authorize NSF to seek or fund technical assistance from other federal agencies.
- *Originally 8A(f) of the introduced bill.*

Sec.112.Coordination of activities.

- Would require NSF coordination with NIST and DOE to avoid duplication of effort.
- Would require GAO to report to Congress on this interagency coordination.
- *Originally 7(h)(1) of the introduced legislation in tech hubs.*

Sec.113.Reporting requirements.

- Would require NSF to provide an annual report on the implementation of the Directorate and the Directorate's research security plan, provide the agency with information dissemination authority, and require NSF to request and receive a research security briefing annually from intelligence agencies.
- *Originally 8A(d)(3)(B) and 3(a) of the introduced bill.*

Sec. 115.Hands-on learning program

- Would require NSF to establish a grant program for hands-on learning opportunities in STEM education, including in informal environments, and the evaluation of those opportunities.
- Would authorize \$25 million for this program from FY 2022 – FY2026 from otherwise authorized funds.

Sec.115.Intellectual Property Protection

- Would require that intellectual property developed through NSF not be transferred to foreign entities of concern.

Sec.116.Authorization of appropriations for NSF.

- Would authorize \$81 billion for NSF from FY 2022 to 2026. This would include \$29 billion for the Directorate and \$52 billion for other directorates and offices at NSF (“core” or “existing” NSF), not inclusive of a \$2.9 billion transfer of funds from the Directorate to core NSF to fund basic research in the key technology focus areas.
- Would authorize an increase of \$33 million for the NSF Inspector General over existing levels.
- Would prohibit the Directorate from making new awards in any year when appropriations to the NSF outside of the Directorate do not grow.
- *This replaces the Endless Frontier Fund in the introduced bill.*

Sec.117.Authorization of appropriations for the DOE.

- Would authorize \$16.9 billion for the DOE from FY 2022 to 2026 for research and development in the key technology focus areas. The authorizations would supplement existing authorizations.

TITLE TWO

Sec.201.Chief Diversity Officer of the NSF

- Would establish a Senate-confirmed Chief Diversity Officer at NSF.
- The Chief Diversity Officer would provide advice on policy, oversight, guidance, and coordination with respect to diversity and inclusion and direct the NSF Office of Diversity and Inclusion.
- The NSF Office of Diversity and Inclusion would be authorized at \$5 million/year from FY 2022 to 2026.
- *Originally section 3(c) of the introduced legislation.*

Sec. 202. Programs to Expand the STEM Workforce

- Would authorize NSF direct student support programs, including scholarships and fellowships to address potential gaps in the skills and availability of the STEM workforce.
- Would create a new program for postdoctoral professional development.

Sec.203.Emerging research institution pilot program

- Would direct the Director to establish a 5-year pilot program for emerging research institutions to build research and education capacity in partnership with research intensive universities.
- *Originally section 3(e) of the introduced bill*

Sec.204.Personnel management authorities for the Foundation

- Provides NSF with DARPA-like hiring authorities and flexibilities.
- Requires a National Academy of Public Administration (“NAPA”) review on administrative recommendations to effectively implement the Directorate and the new DARPA authorities at NSF.

- *Originally section 8A(c) of the introduced bill.*

Sec.205. Advanced Technological Manufacturing Act

- Would reauthorize the NSF Advanced Technological Education (“ATE”) program.
- *S. 725, Advanced Technological Manufacturing Act (Wicker, Cantwell, Rosen)*

Sec.206. Intramural emerging institutions pilot program

- Would direct the NSF director to establish a series of pilot programs to expand the number of institutions of higher education that can successfully compete for NSF grants.
- *S. 725, Advanced Technological Manufacturing Act (Wicker, Cantwell, Rosen)*

Sec.207. Public-private partnerships

- Would direct NSF to pursue partnerships with private industry and foundations.

Sec.208. AI Scholarship-for-Service Act

- Would offer scholarships to undergraduate and graduate students studying AI and related fields in exchange for service in the public sector equal to the period of time of their scholarship upon completion of their degree.
- *S. 1257, AI Scholarship for Service Act (Peters, Thune)*

Sec.209. Geographic Diversity

- Would set aside at least 20 percent of the funds allocated to NSF, including at the new Directorate, and DOE to support the EPSCoR program, which builds research capacity in states that historically receive low R&D funding. There are currently 28 states and jurisdictions in the program. The EPSCoR states and jurisdictions currently together receive less than 13 percent of NSF funds.

Sec.210. Rural STEM Education Act

- Would direct NSF and DOC to improve STEM education and training access in rural communities.
- Would direct NSF to provide grants to support training for STEM teachers in rural schools, conduct research to identify barriers rural students face in STEM education, and establish partnerships between community colleges and rural high schools. The funds would assist the improvement of online STEM education and hands-on training at rural schools.
- Would direct the Secretary of Commerce to establish a prize competition to encourage innovative ideas to deploy broadband connectivity to rural communities.
- Would direct the NSF Director and the National Academy of Sciences to evaluate federal programming for rural STEM education and make recommendations for ways in which it can be improved.
- *S. 1374, Rural STEM Education Act (Wicker, Rosen, Cornyn, Hassan)*

Sec.211. Quantum Network Infrastructure and Workforce Development Act

- Would direct NSF, OSTP, and NIST to advance quantum research and education.
- Would direct NIST to undertake research on the standardization of quantum networking technologies and applications.

- Would direct NSF conduct a study on quantum education gaps in K-12 education and coordinate a related National Academy of Sciences report on the acceleration of a quantum workforce.
- Would direct DOE to supplement the Energy Sciences Network User Facility.
- *S. 1161, Quantum Network Infrastructure and Workforce Development Act (Thune, Hassan)*

Sec.212.Supporting Early-Career Researchers Act

- Would create an NSF 2-year pilot program to award grants to early-career researchers at higher education institutions or federal research facilities for up to two years. Priority would be given to those that are underrepresented or at a minority-serving institution or EPSCoR jurisdiction.
- Would require grant recipient to submit a report on their use of grant funds and a report to Congress summarizing the use of grant funds and impact of the pilot program.
- *S. 637, Supporting Early-Career Researchers Act (Blumenthal, Merkley, Coons, Brown, Van Hollen, Klobuchar, Hirono)*

Sec.213.Advancing Precision Agriculture Capabilities Act

- Would update considerations for precision agriculture technology within NSF's advanced technological education program and support NSF research on the advancement of Internet of Things (IoT) technology for precision agriculture.
- Would require GAO to perform a technology assessment of precision agriculture innovations and evaluate all existing federal programs that support precision agriculture.
- *S. 1395, Advancing Precision Agriculture Capabilities (Fischer, Klobuchar)*

Sec.214. Critical minerals mining research

- Would direct NSF to fund research to advance critical minerals mining strategies.
- Would direct OSTP to coordinate federal science efforts to ensure secure and reliable supplies of critical minerals to the U.S.
- Would direct DOC, in coordination with the Department of Interior, to establish a grant programs for pilot programs for the development of critical minerals and metals in the United States, including secondary recovery. Would authorize \$100 million annually for FY 2021 through 2024 for the grant program.

Sec.215. Caregiver policies

- Would direct OSTP to provide guidance to each federal science agency to establish policies to offer flexibility and supplements in grants for those with caregiving responsibilities, such as care for a newborn or sick family member.

Sec.216. Presidential Awards

- Would authorize Presidential Awards for Excellence in Technology and Science Research to populations underrepresented in STEM, including women and minorities, who have demonstrated outstanding achievements in science.

Sec.217. Bioeconomy Research and Development Act of 2021

- Would create the National Engineering Biology Research and Development Initiative and a supporting interagency coordinating body.
- Would create an advisory committee on engineering biology research for the Initiative that would issue reports of their actions to Congress.
- Would require a National Academies of Sciences review on ethical, legal, environmental, safety, security, and societal issues related to engineering biology research and development.
- *S. 1418, the Bioeconomy Research and Development Act (Markey, Rubio, Gillibrand, Capito)*

Sec.218. Microgravity Utilization Policy

- Would authorize NSF to facilitate access to the microgravity environment, including in private sector platforms, for NSF funding awardees.
- Would require a report on NSF plans for facilitating awardee access to the microgravity environment.

TITLE THREE

Sec 301. NSF Research Security

- Would establish a Research Security and Policy Office in the Office of the Director responsible for coordinating all research security policy issues for the NSF. Duties would include outreach and education, communication of requirements, identifying potential security risks, and performing risk assessments.
- Would direct the Director to develop an online resource containing explanations of Foundation security policies and guidance on potential security risks, among other things.
- Would direct the Director to award research grants to support research on the conduct of research and the research environment, including research on research misconduct, breaches of research integrity, and detrimental research practices.
- Would amend the America COMPETES Act (PL 110-69) to expand the requirement for institutions of higher education applying for NSF grants to include faculty, and other senior university personnel in the institutions' plan to conduct responsible research training.
- Would authorize \$5 million in appropriations for the Office per year from FY 2022 – FY 2026.

Sec 302. Research Security and Integrity Information Sharing Analysis Organization

- Would direct the OSTP Director to contract with an independent organization to establish a Research Security and Integrity Information Sharing Analysis Organization.
- Would requires the RSI-ISAO to serve as a clearinghouse for research community members to share and access information to understand and identify improper or illegal efforts by foreign entities to obtain research results, know how, materials, and intellectual property; develop a set of standard risk assessment frameworks and best practices; share information concerning security threats and lessons learned; provide timely reports on research security risks; provide training and support; enable standardized information gathering and data compilation, storage, and analysis for compiled incident reports; and support analysis of patterns of risk and identification of bad actors.

- Would authorize NSF to provide initial funds for RSI-ISAO and direct a transition to a fee-based model at the earliest feasible time.

Sec 303. Foreign Government Talent Recruitment Program Prohibition

- Would require the OSTP Director and an interagency working group to develop a uniform set of policy guidelines covering Federal science agencies. The policy guidelines would:
 - prohibit all personnel of each covered agency from participating in a foreign government talent recruitment program;
 - prohibit awards from being made for any proposal in which the principal investigator, co-principal investigator, or any individual listed on the proposal with direct involvement in the proposal are participating in a talent recruitment program of the People's Republic of China, the Democratic People's Republic of Korea, the Russian Federation, or the Islamic Republic of Iran; and
 - require institutions receiving funding to prohibit awards from being used by any individuals participating in a talent recruitment program of the People's Republic of China, the Democratic People's Republic of Korea, the Russian Federation, or the Islamic Republic of Iran.
- Would require each Federal science agency to issue a policy implementing the OSTP policy guidance.
- Would require the senior personnel designated by the U.S. institutions applying for Federal funding to submit foreign government talent recruitment program contracts to the relevant Federal science agency. The relevant Federal science agency would review the contract and may prohibit funding to the awardee if appropriate.

Sec. 304. Additional Requirements for Directorate Research Security

- Would require the Director to work with institutions of higher education on initiatives to support IP protection, limit undue influence, and support domestic talent development.
- Would require as part of this work to develop training to promote information security, identification of foreign talent program participants, opportunities to collaborate with Directorate awardees to promote the protection of controlled information, regulations for government and academic organizations to support the goal of this initiative, and also policies to limit or prohibit funding to researchers or universities who knowingly violate regulations.
- Would require the Director to submit an annual report on the description of the activities under the initiative, finding, recommendations, gaps in legal authorities to improve research security, and information on relevant Foundation Inspector General cases.

Sec. 305. Protecting Research from Cyber Theft

- Would require the NIST Director to disseminate and make publicly available resources to help research institutions and institutions of higher education identify, assess, manage, and reduce their cybersecurity risk related to conducting research.

Sec. 306. International Standards Development

- Would require the NIST Director to build capacity and training opportunities to help create a pipeline of talent and leadership in key standards development positions; partner

with private sector entities to support strategic engagement and leadership in the development of international standards; and prioritize efforts on standards development for emerging technologies, identify organization in which to develop these standards, identify leadership positions of interest to the United States, and identify key contributors for technical and leadership expertise in these areas.

Sec. 307. Research Funds Accounting

- Would require the Comptroller General to conduct a study on Federal funding made available to foreign entities of concern for research during the past 5 years.

Sec. 308. Plan With Respect To Sensitive or Controlled Information and Background Screening

- Would require NSF to develop a plan to identify research areas that may contain sensitive information and to provide for background screening for individuals employed or funded by the Foundation.

TITLE FOUR

Sec. 401: Regional Technology Hubs

- Would authorize a regional tech hub program at the Department of Commerce focused on building regional innovation capacity. Activities funded include workforce education, entrepreneur development, and technology maturation.
- Would designate at least 3 hubs in each EDA region and require that that at least 1/3 of the hubs are located in rural areas and 1/3 of the hubs are located in EPSCoR jurisdictions (the criteria are not mutually inclusive), and at least one eligible consortium designated as a regional technology hub is in a low population State.
- Would authorize the regional technology hub program at \$8 billion of FY 2022-2026.

Sec. 402: Manufacturing USA Program

- Would: (1) authorize appropriations sufficient to expand the existing network of Manufacturing USA institutes; (2) create a preference for institutes that increase the geographical diversity of the Manufacturing USA Program, are located in an area with a low per capita income and a high proportion of socially disadvantaged residents; (3) encourage greater collaboration between Manufacturing USA and the Manufacturing Extension Partnership; (4) require the Secretary to seek advice from the National Manufacturing Advisory Council; and (5) require the Secretary to integrate minority-serving institutions, historically Black colleges or universities, Tribal colleges or universities, or a minority business enterprises as active members of the Manufacturing USA institutes.
- Would require agency heads and the Secretary of Defense, in consultation with the Secretary of Commerce, to establish policies to promote domestic production of technologies developed by the Manufacturing USA Network.
- Would require the National Program Office to establish a council of heads of any Manufacturing USA institute to foster collaboration between Manufacturing USA institutes and to assist the National Program Office.
- Would require the National Program Office to develop strategies for retaining domestic public benefit after the cease of federal funding.

- Would modify the function of the National Program Office to include the development of industry credentials.
- Would authorize the Manufacturing USA Program at \$1.2 billion over FY 2022-2026.
- *S. 1240, Manufacturing USA Expansion Act of 2021 (Brown, Blunt)*

Sec. 403: Manufacturing Extension Partnership (MEP)

- Would create an expansion awards program available to the MEP centers to fund public good activities, including cybersecurity, advanced technology services, workforce training, and promoting supply chain resiliency.
- Would authorize the MEP program at \$2.4 billion over FY 2022-2026.

Sec. 404: National Manufacturing Advisory Council

- Would establish the National Manufacturing Advisory Council at the Department of Commerce to ensure communication between the Federal government and the manufacturing sector and enable discussion regarding Federal policies and programs that affect manufacturing in the U.S.
- Would receive all functions of the United States Manufacturing Council of the International Trade Administration.
- *S. 1044, National Manufacturing Advisory Council for the 21st Century Act (Peters, Rubio)*

TITLE FIVE

Sec. 501: Strategy and Report on Economic Security, Science, Research, and Innovation to Support the National Security Strategy

- Would require submission to Congress of an interagency economic security strategy in conjunction with each national security strategy. This strategy would provide a holistic overview of the state of research investments, key technologies, manufacturing capabilities, workforce needs, and technology commercialization, along with a strategy for retaining United States competitiveness.
- *Originally sections 5 and 10 of the introduced legislation.*

Sec. 502: Person or Entity of Concern Prohibition

- Would prohibit Chinese military entities from participating in the programs authorized under this legislation.
- *Originally section 13 of the introduced legislation.*

Sec. 503: Study on Emerging Science and Technology Challenges faced by the United States and Recommendations to address them (SEAL Study)

- Would require the National Academies to study what are the top ten technology areas of highest importance and recommend federal action to address them.
- *S. 1216, National Strategy to Ensure American Leadership Act (Van Hollen, Blunt). Originally section 11 of the introduced bill.*

Sec. 504: Report on Global Semiconductor Shortage

- Would require the Comptroller General to submit a report to Congress on the global semiconductor supply shortage and its impact on U.S. manufacturing.

Sec. 505: Supply Chain Resiliency Program

- Would establish a supply chain resiliency program at the Department of Commerce to work with the private sector to identify and work with non-federal entities to recommend opportunities to mitigate or address supply chain vulnerabilities, including semiconductors.
- Would make clear that the protections, including liability and enforcement protections, under the Protected Critical Infrastructure Protection Act would apply to supply chain information submitted to the Secretary under the section.
- Would direct the Secretary to carry out the CHIPS semiconductor incentives program authorized under section 9902 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116–283) under this program.
- Would require the Secretary to commence a process to determine whether optical transmission equipment from China poses an unacceptable risk to national security or safety.
- *Originally Section 6 of the introduced bill.*

Sec. 506: Semiconductor Incentives

- Would amend the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116-283) to include, in the provision of incentives for semiconductor manufacturing, consideration of a broad range of semiconductors and the relevance of the technology to addressing supply chain vulnerabilities.
- Would authorize \$2 billion in additional financial incentives for manufacturing at mature technology nodes, with priority for critical manufacturing industries, such as the automotive industry.

Sec. 507: Research Investment to Spark the Economy (RISE) Act

- Would authorize administrative flexibilities and financial support for researchers impacted by COVID-19.
- *S. 289, the Research Investment to Spark the Economy (RISE) Act (Markey, Tillis, Collins, Peters, Warren, Brown, Stabenow, Coons, Rosen, Van Hollen, Baldwin, Cardin, Kelly)*

Sec. 508: Office of Manufacturing and Industrial Innovation Policy

- Would create an Office of Manufacturing and Industrial Innovation Policy within the White House, a Senate-confirmed Chief Manufacturing Officer, two interagency working groups, an annual national strategic manufacturing plan, a triennial manufacturing and industrial innovation report, a national medal of manufacturing and industrial innovation, and a central home within the federal government for manufacturing policy.
- Would authorize \$50 million of FY 2022 through 2026 for the office.
- *S. 997, Office of Manufacturing and Industrial Innovation Policy Act (Klobuchar, Wicker, Coons, Portman)*

Sec. 509: Telecommunications Workforce Training Grant Program

- Would create a grant program for telecom workforce training at the Office of Minority Broadband Initiatives, with funds that could be used to hire and train faculty, design courses and degree programs, pay for costs of instruction, and recruit and support students.
- Would authorize \$100 million for this grant program over FY 2022 through 2027, and specify that at least 30 percent of grant funding go to historically Black colleges and universities and at least 30 percent go to tribal colleges and universities.
- *S. 996, Improving Minority Participation and Careers in Telecommunications (IMPACT) Act (Wicker, Sinema, Tim Scott)*

Sec. 510: Country of Origin Labeling Online Act.

- Would require online sellers offering products required to be labeled under Sec. 304 of the Tariff Act of 1930 to include the country-of-origin in the website description of the product.
- Would authorize the Federal Trade Commission to enforce the Act; require an agreement between the Federal Trade Commission and Customs and Border Protection to ensure consistent implementation and to publish the agreement as guidance.
- *S. 3707 (115th), Country of Origin Labeling Online Act (COOL) Online Act (Baldwin, Rick Scott, Murphy, Loeffler)*

Sec. 511. Country of Origin Labeling for King Crab and Tanner Crab

- Would amend Section 281(7)B) of the Agricultural Marketing Act of 1946 (7 U.S.C. 1638(7)(B) to include whole cooked king crab and tanner crab and cooked king crab and tanner crab sections.

Sec. 512. Internet Exchanges and Submarine Cables

- Would direct the Assistant Secretary of Commerce for Communications and Information to award grants to acquire real property and necessary equipment to establish internet exchange facilities in a core based statistical area where there are no facilities or expand facilities in areas where there is only one exchange facility.
- Would provide a 50 percent federal cost share for exchange facilities under this section
- Would direct the Assistant Secretary to award grants to establish or expand submarine cable landing stations that serve a military facility.
- *S. 1166 (115th), Internet Exchanges and Submarine Cable Act of 2020 (Blackburn, Baldwin, Duckworth, Blunt)*

Sec. 513. Study of Sister City Partnerships Operating Within the United States Involving Foreign Communities in Countries with Significant Public Sector Corruption

- Would direct the Comptroller General to study and report to Congress the activities of sister city partnerships involving foreign communities with significant corruption.
- *S. 710, Sister City Transparency Act (Blackburn, Hawley, Cramer, Tillis, Rubio, Marshall, Daines)*

Sec. 514. Prohibition on Transfer, Assignment, or Disposition of Construction Permits and Station Licenses to Entities Subject to Undue Influence by the Chinese Communist Party of the Government of the People's Republic of China

- Would prohibit the Federal Communications Commission from transferring, assigning, or disposing of construction permits and station licenses to an entity that is subject to undue Chinese governmental influence.

Sec. 515. Limitation on Nuclear Cooperation with The People's Republic of China

- Would prohibit the President from engaging in any nuclear cooperation with the Chinese Government, or with entities owned by the Chinese government or incorporated in China, subject to exceptions relating to counterterrorism, nonproliferation, and other national security or emergency interests.
- Would prohibit Federal agencies from hosting certain Chinese visitors.
- Would direct the Secretary of State and National Academy to review and assess the implications of past nuclear cooperation with China.

Sec. 516. Certification.

- Would amend Section 1260I(a) of the National Defense Authorization Act for Fiscal Year 2020, preventing the Secretary of Commerce from removing Huawei technologies from the entity list unless the Secretary certified that Huawei did not pose an ongoing threat to the U.S. or allied critical infrastructure, even if the Secretary had taken regulatory measures to mitigate risk

Sec. 517. Fairness and Due Process in Standard-Setting Bodies.

- Would direct the Assistant Secretary of Commerce for Communications and Information to study opportunities for improved participation by U.S. Government experts in telecommunications standardization activities.

Sec. 518. Shark Fin Sales Elimination.

- Would prohibit the possession, transport, sale, offer for sale, or purchase of shark fins or products containing shark fins; with certain exceptions, including dogfish.
- *S. 1106, Shark Fin Sales Elimination Act of 2021 (Booker, Capito, Cantwell, Portman, Blumenthal, Collins, Braun, Duckworth, Schatz, Whitehouse)*

Sec. 519: Sense of Congress on Forced Labor

- Would express Congress' belief that the Federal government should not engage in research, partnerships, contracts, or other agreements with any entity, including institutions of higher education, that have any affiliation with a country that engages in forced labor

Sec. 520. Open Network Architecture

- Would direct the Department of Commerce Assistant Secretary for Communications and Information Administration to establish an applied research open network architecture testbed at the National Telecommunications and Information Administration.
- Would direct Commerce to establish a grant program to encourage U.S.-based private sector entities to participate in international standards-setting bodies.

- *S. 1563, Telecommunications Supply Chain Diversity Promotion Act (Wicker, Hickenlooper)*

Sec. 521. Combatting Sexual Harassment in Science

- Would award grants to expand research to better understand the factors contributing to, and consequences of, sexual harassment in STEM workforce and education.
- Would direct the Director of OSTP, in consultation with relevant Federal agencies, to review existing Federal science agencies policies addressing sexual harassment and develop a set of policy guidelines for Federal science agencies..
- Would require National Academies of Sciences, Engineering, and Medicine and the General Accountability Office studies.
- *S. 1379, Combatting Sexual Harassment in Science (Blumenthal, Smith, Reed, Van Hollen, Klobuchar, Hirono, Shaheen, Sanders, Wyden, Markey, Rosen, Brown, Padilla)*

TITLE SIX

Sec. 601. Short Title

- The short title of the subtitle would be “Space Preservation and Conjunction Emergency Act of 2021” or the “SPACE Act”.
- *S. 4827 (116th), Space Preservation And Conjunction Emergency Act (SPACE) Act (Wicker)*

Sec. 602. Sense of Congress

- Would declare the sense of Congress on several topics related to space safety.

Sec. 603. Definitions

- Would establish definitions used throughout the subtitle.

Sec. 604. Space Situational Awareness Data, Information, and Service: Provision to Non-United States Government Entities

- Would direct the Director of Space Commerce, in consultation with appropriate federal entities, to carry out a program to improve the collection, processing, and dissemination of space situational awareness data, information, and services.
- Would authorize \$15 million for fiscal year 2021 to carry out the section.

Sec. 605. Centers of Excellence for Space Situational Awareness

- Would require the Secretary of Commerce to award grants to consortiums led by institutions of higher education or non-profit organizations to establish one or more Centers of Excellence for Space Situational Awareness to advance scientific, technological, transdisciplinary, and policy research in space situational awareness.
- Would authorize \$20 million to carry out this section.

Subtitle B – National Aeronautics and Space Administration Authorization Act.

Sec 611. Short Title

- The subtitle would be the “National Aeronautics and Space Administration Authorization Act of 2021.”
- *S. 2800 (116th), National Aeronautics and Space Administration Act (Cruz, Sinema, Wicker, Cantwell)*

Sec 612. Definitions

- Would establish definitions used throughout the subtitle.

Part I—Authorization of Appropriations

Sec 613. Authorization of Appropriations

- Would authorize appropriations for NASA for fiscal year 2021.

Part II—Human Spaceflight and Exploration

Sec 614. Competitiveness Within the Human Landing System Program

- This section would require the NASA Administrator to maintain competitiveness within the human landing system by funding design, development, testing, and evaluation for at least two entities.
- It would also authorize, in addition to amounts otherwise appropriated for the Artemis program, for fiscal years 2021 through 2026, \$10.032 billion to NASA to carry out the human landing system program.

Sec 615. Space Launch System Configurations

- The SLS with EUS will be the most powerful rocket ever built. Without EUS, it is not an exceptional rocket. However, NASA has not prioritized development of EUS and attempted to “defer” its development under prior administrations. This legislation would require NASA to develop EUS in time for the third launch of SLS, currently planned for 2024. Boeing is the lead contractor building the SLS and Aerojet Rocketdyne produces the engines for SLS.

Sec 616. Advanced Space Suits

- NASA does not have space suits ready for deep space exploration missions. This section would require a plan for the development and manufacture of advanced spacesuits, applicable to a diverse astronaut core, and for testing these suits aboard the ISS.

Sec 617. Acquisition of Domestic Space Transportation and Logistics Resupply Services

- Between 2011 and 2020, NASA relied exclusively on Russia to transport astronauts and goods to the ISS via the Russian Soyuz. No domestic transportation option existed. This provision would require all future missions to use a domestic launch vehicle, unless a domestic vehicle is not available or if an international partner provides the launch vehicle as part of no-exchange-of-funds collaborative agreement supporting NASA’s deep space exploration plans. Boeing, SpaceX, and Blue Origin all provide these services.

Sec 618. Rocket Engine Test Infrastructure

- Would require NASA to continue its program to modernize its rocket engine test infrastructure with priority given to projects that can be used by multiple users and propulsion systems. Also requires a study on the use of a working capital fund to promote increased use of NASA rocket propulsion test infrastructure.

Sec 619. Pearl River Maintenance

- Would require NASA to coordinate with the Army Corps of Engineers to ensure the continued navigability of the Pearl River and Little Lake channels sufficient to support NASA barge operations surrounding Stennis Space Center and the Michoud Assembly Facility.

Sec. 620. Value of ISS and Capabilities in Low-Earth Orbit

- Would require that NASA maintain the capability for a continuous human presence in LEO. This addresses concerns that NASA will retire ISS without a follow-on capability, risking U.S. leadership and expertise.

Sec. 621. Extension and Modification Relating to International Space Station

- Would require NASA to extend ISS operations through 2030 and to continue reports to Congress on the technical feasibility of such an extension. Currently the station is authorized through 2024. Boeing manages the ISS for NASA.

Sec. 622. DOD Activities on the ISS

- Would require DOD to submit a report to Congress on their activities, programs and projects ongoing, planned, and completed on the ISS.

Sec 623. Commercial Development in Low-Earth Orbit

- Would state that it is United States policy to encourage the development of a thriving and robust United States commercial sector in LEO. Directs NASA to continue to expand its utilization of U.S. commercial products and services in LEO. Additionally, states that NASA is not allowed to offer non-ISS international partner governments space flight products or services that the United States commercial sector offers. Explicitly authorizes commercial missions to the ISS with commercial passengers on a reimbursable basis. Authorizes a LEO Commercialization Program, which would fund activities to stimulate demand in LEO, improve the ISS to accommodate commercial users, and accelerate development of commercial space stations or habitats. The bill sets parameters for the program, such as requiring investment from the commercial sector for the development of commercial platforms and habitats. If NASA enters into an agreement or funds a commercial space station or habitat, NASA is required to submit a report explaining the utility of the activity and reviewing of the viability of its business case.

Sec 624. Maintaining a National Laboratory in Space

- Would establish the sense of Congress on the importance of the existing national laboratory in space. States that a national laboratory in space should be maintained beyond the life of the ISS. Requires a report on the feasibility of establishing a Federally Funded Research and Development Center in space.

Sec 625. ISS National Laboratory; Property Rights in Inventions

- Would allow NASA to waive claims to intellectual property rights or government purpose rights for inventions made on the ISS National Laboratory if NASA is fully reimbursed for its services. NASA is required to notify Congress when it exercises this authority. This is intended to spur commercial use of the ISS. NASA can grant these rights without reimbursement if NASA determines that the relevant field of commercial endeavor is sufficiently immature that granting exclusive property rights is necessary to help bolster demand for products and services produced on crewed or crew-tended space stations.

Sec. 626. Data First Produced During Non-NASA Scientific Use of the ISS National Laboratory

- Would allow NASA to waive claims for the federal government's use of data made on the ISS National Laboratory if NASA is fully reimbursed for its services.

Sec 627. Payments Received for Commercial Space-Enabled Production on the ISS

- Would authorize NASA to negotiate reimbursements of costs or a portion of profit for inventions made on the ISS if it was invented using government funds, facilities, or employees on a non-reimbursable basis. These royalties would be placed in a newly-created fund at the Treasury called the Space Exploration Fund, which would go towards space exploration activities.

Sec 628. Stepping Stone Approach to Exploration

- Would specify that interim destinations to Mars, such as the Moon, should advance technology or operational concept that will enable future human missions to Mars. Would direct NASA to utilize a mix of commercial and SLS launches for exploration programs. Would set a tempo of at least one SLS launch per year after the first successful crewed launch. Would require the Gateway outpost, which would orbit around the Moon to demonstrate technologies, systems, and operational concepts directly applicable to a Mars mission. Would direct the agency to engage international partners in human exploration activities related to a crewed mission to Mars. Boeing and Aerojet Rocketdyne are both involved in producing SLS. Blue Origin and SpaceX have both developed crew transportation vehicles.

Sec 629. Technical Amendments Relating to Artemis Missions.

- Replaces references in code to reflect current NASA nomenclature.

Part III–Science

Sec. 631. Science Priorities

- Would reaffirm the importance of a balanced portfolio of science activities guided by the National Academies' decadal surveys. Would direct NASA to consult with National Academies committees when scientific discoveries or external factors compel the agency to reassess decadal survey priorities.

Sec 632. Lunar Discovery Program

- Would authorize a lunar science research program, require the agency to procure domestic, commercial landers to carry out the research, and require science funded by the program to be consistent with the National Academies' recommendations. Would require NASA to consider missions that would evaluate lunar polar volatiles.

Sec. 633. Search for Life

- Would require NASA to continue its multidisciplinary science and technology development program to search for life beyond Earth.
- Would require NASA to fund activities under this program to search for and analyze technosignatures and authorize the development of new instrumentation and sensor technology.

Sec. 634. James Webb Space Telescope

- Would require NASA to monitor the performance of the James Webb Space Telescope project and improve the reliability of cost estimates and contractor performance data as the project continues.
- Would require NASA to submit to Congress an estimated revised launch date and cost estimate if the cost estimate breaches the current cost cap.

Sec 635. Wide-Field Infrared Survey Telescope

- Would declare a sense of Congress that flagship class mission cost growth has harmed the Science Mission Directorate's portfolio balance.
- Would direct NASA to continue developing the telescope to meet decadal priorities.

Sec. 636. Study on Satellite Servicing for Science Missions

- Would require NASA to study the feasibility of in-space servicing for NASA science missions currently operational or in development.

Sec. 637. Earth Science Missions and Programs

- Would direct NASA to implement recommendations and guidance from the 2017 National Academies Earth science decadal.

Sec. 638. Life Science and Physical Science Research

- Would authorize multidisciplinary life science and physical science fundamental research program to investigate the basis of changes to biological systems when those systems are exposed to space, including the effects of long-duration exposure to deep space-related environmental factors on those systems.

Sec. 639. Science Missions to Mars

- Would require a Mars mission for human landing site selection.
- Would authorize a Mars sample return program, the highest priority of the most recent decadal survey on planetary science.

Sec. 640. Planetary Defense Coordination Office

- Would authorize a Planetary Defense Coordination Office at NASA to survey threats posed by near-Earth objects equal to or greater than 140 meters in diameter.

- Would require NASA to launch, not later than September 30, 2025, a space-based infrared survey telescope that is capable of detecting near-Earth objects equal to or greater than 140 meters in diameter.
- Would require an annual report on their progress toward this goal. If a timely annual report is not delivered, the NASA Administrator's funds will be fenced.

Sec. 641. Suborbital Science Flights

- Would require a report evaluating how suborbital flight platforms can contribute to NASA's science objectives.

Sec 642. Earth Science Data and Observations

- Would require NASA to establish an open data program and make as much Earth science data public and easily accessible as possible.

Sec. 643. Sense of Congress on Small Satellite Science

- Sense of Congress on the functionality and cost-effectiveness of small satellites that would state NASA should continue to support their development and use.

Sec. 644. Sense of Congress on Commercial Space Services

- Sense of Congress on the potential benefits of partnering with commercial space companies for science missions.

Sec. 645. Procedures for Identifying and Addressing Alleged Violations of Scientific Integrity Policy

- Would require NASA to develop and document procedures for identifying and addressing alleged violations of their scientific integrity policy.

Part IV—Aeronautics

Sec. 646. Short Title

- The short title for the title would be the "Aeronautics Innovation Act." This title is adapted from a Warner-Moran bill.

Sec. 647. Definitions

- Establishes definitions to be used throughout the part.

Sec. 648. Experimental Aircraft Projects

- Would authorize the low-boom supersonic aircraft project followed by a subsonic flight demonstrator aircraft project to advance aircraft designs and technologies that enable significant increases in energy efficiency and reduced life-cycle emissions.
- Would further authorize a series of experimental X-plane demo projects to advance aviation technology.
- Would establish an advanced materials and manufacturing technology program, which includes composite materials.

Sec. 649. Unmanned Aircraft Systems

- Would require NASA to continue to work to integrate unmanned aircraft systems (“UAS”) into the national airspace system (“NAS”) and partner with industry and the Federal Aviation Administration (“FAA”) to advance these technologies.

Sec. 650. 21st Century Aeronautics Capabilities Initiative

- Would establish an initiative to ensure NASA has the infrastructure and computational skills to continue high-quality aeronautics research.

Sec. 651. Sense of Congress on On-Demand Air Transportation

- Sense of Congress that would state the benefits of on-demand air transportation and that NASA should continue to develop and test such technologies.

Sec. 652. Sense of Congress on Hypersonic Technology Research

- Sense of Congress on the importance of hypersonic vehicles and NASA’s role in bringing them to fruition.
- Would encourage the agency to partner with industry.

Part V–Space Technology

Sec. 653. Space Technology Mission Directorate

- Would require that NASA maintain an independent Space Technology Mission Directorate (“STMD”) that supports technology development across NASA, not just human exploration programs. This is in response to a Trump administration proposal that would have eliminated STMD and folded it into the Human Exploration and Operations Directorate.

Sec. 654. Flight Opportunities Program

- Would update statute for the Flight Opportunities Program.
- Would prohibit funding the development of new commercial suborbital launch vehicles.

Sec. 655. Small Spacecraft Technology Program

- Sense of Congress on the importance of the Small Spacecraft Technology Program.
- Would require NASA to accommodate science payloads that further the goal of human exploration to the Moon and Mars through this program.

Sec. 656. Nuclear Propulsion Technologies

- Would require NASA to continue the development of nuclear propulsion technology, which is required for travel to Mars.
- Would require an in-space demonstration by 2026. The National Academies reports that space nuclear propulsion must be developed faster to enable efficient human exploration missions to Mars.

Sec. 657. Mars-Forward Technologies

- Would require NASA to prioritize STMD research, testing, and development of long-lead technologies for Mars.

Sec. 658. Prioritization of Low-Enriched Uranium Technology

- Would require NASA to establish a program for the research, testing, and development of in-space reactor designs, including a surface power reactor, that uses low-enriched uranium fuel.
- Would require that NASA prioritize these designs over designs that utilize highly enriched uranium. The Ultra-Safe Nuclear Corporation, headquartered in Seattle, is developing a lunar surface power reactor.

Sec. 659. Sense of Congress on Next Generation Communications Technology

- Sense of Congress on the importance of NASA continuing to invest in research and development of optical communications and quantum encryption capabilities.

Sec. 660. Lunar Surface Technologies

- Would require NASA to conduct technology development and demonstrations to enable human and robotic exploration on the lunar surface. In doing so, the agency is required to establish a research consortium to assist in the effort.

Part VI–STEM Engagement

Sec. 661. Sense of Congress

- Sense of Congress on NASA’s inspirational capacity to engage students in science, technology, engineering, and mathematics (“STEM”) that would state NASA should work to increase K-12 involvement in their projects, enhance higher education, and support underrepresented communities in STEM.

Sec. 662. STEM Education Engagement Activities

- Would require that NASA continue educational activities, including Established Programs to Stimulate Competitive Research (“EPSCoR”), the Minority University Research and Education Project (“MUREP”), and the National Space Grant College and Fellowship Program. Also would require a briefing on their education activities. NASA has proposed in its last few budget requests to eliminate these programs.

Sec 663. Skilled Technical Education Outreach Program

- Would direct NASA to establish an outreach program to expose secondary school students to career and technical education careers. Each NASA center would be required to participate.

Sec. 664. National Space Grant College and Fellowship Program:

- Would update the authorization of this program, which funds educational opportunities in all 50 states and some U.S. territories.

Part VII–Workforce and Industrial Base

Sec. 665. Appointment and Compensation Pilot Program

- Would authorize a limited excepted service pilot program at NASA in order to accelerate hiring for key positions and compete with the private sector in hiring. Other federal science agencies have this authority.

Sec. 666. Establishment of Multi-Institution Consortia

- Would reaffirm that NASA has the authority to establish multi-institution consortia to support their missions.
- Would require NASA to develop and implement policies governing the establishment of such a consortium.

Sec. 667. Expedited Access to Technical Talent and Expertise

- Would clarify that NASA can use the multi-institution consortia to fund technical analyses and other engineering support to address the acquisition, technical, and operational needs of NASA centers.

Sec. 668. Report on Industrial Base for Civil Space Missions and Operations

- Would require NASA to report to Congress on the status of the domestic space industrial base, including any weaknesses and corresponding responses to those weaknesses.

Sec. 669. Separations and Retirement Incentives

- Would increase the authorized Voluntary Separation Incentive Pay (VSIP) from the current ceiling of \$25,000 to \$40,000. NASA has traditionally offered incentives such as VSIP to encourage voluntary separations as one means to minimize the impact of workforce restructuring and to avoid involuntary reductions in force.

Sec. 670. Confidentiality of Medical Quality Assurance Records

- This section would establish that records created by NASA as part of its medical quality assurance program are confidential and privileged. NASA's medical quality assurance program is a comprehensive program within NASA to systematically review and improve the quality of medical and behavioral health services within NASA to assure the safety and security of persons receiving such services, and the efficiency and effectiveness of the utilization of staff and resources in the delivery of these services. Having such records confidential and privileged is the standard of practice in other medical settings and Federal agencies (e.g., VA, 38 USC Section 5705; DoD, 10 USC Section 1102).

Part VIII—Miscellaneous

Sec. 671. Contracting Authority

- Would allow NASA to consider commercial users' needs when contracting for supplies or services (e.g., for commercial launch companies operating on NASA property). Commercial users would reimburse the government for the cost of their share of such goods or services. This action would enable NASA to take advantage of better economy-of-scale pricing for these services and enable its providers to make more informed business decisions about the infrastructure investments that may be necessary to satisfy both government and commercial needs. This is similar to the flexibilities that the Department of Defense ("DoD") has under 10 U.S.C. § 2276(b)(2).

Sec. 672. Authority for Transaction Prototype Projects and Follow-on Production Contracts

- Would give NASA the authority to carry out prototype projects as other transactions, and award follow-on production contracts without the use of competitive procedures provided that competitive procedures were used for the underlying prototype transaction. This authority could enable more rapid production and availability of technologies by reducing the time between the development phase and the production phase of a project.

Sec. 673. Protection of Data and Information from Public Disclosure

- Would allow NASA to exempt technical data that is export-controlled from public disclosure (e.g., FOIA). Also would protect voluntarily-provided safety information obtained during NASA-led mishap investigation boards from public disclosure.

Sec. 674. Physical Security Modernization

- Consistent with recommendations by NASA's Inspector General, would clarify certain authorities for NASA security contractors when said personnel or performing duties off NASA's physical property.

Sec. 675. Lease of Non-Excess Property

- Would extend NASA's enhanced use leasing authority for four years.

Sec. 676. Cybersecurity

- Would require NASA maintain a Security Operations Center to respond to cybersecurity threats, require that NASA implement Inspector General cybersecurity recommendations from a 2018 report within 18 months, and require that NASA implement Government Accountability Office ("GAO") priority cybersecurity recommendations from a 2016 report within 18 months. Would authorize a cyber threat hunt capability.

Sec. 677. Limitation on Cooperation with the People's Republic of China

- Would reaffirm prohibition on NASA and Office of Science and Technology Policy ("OSTP") working on a bilateral basis with China or a Chinese-owned company unless specifically authorized. Also would apply the prohibition to the National Space Council. Would bar the entities from hosting official Chinese visitors at NASA facilities. Would require certification be submitted to Congress within 30 days for exempted activities. Also would require GAO to review of NASA contracts that may subject the Administration to unacceptable transfers of intellectual property or technology to Chinese entities.

Sec. 678. Consideration of Issues Related to Contracting with Entities Receiving Assistance From or Affiliated with the People's Republic of China

- Entities looking to do business with NASA that involved critical technology would need to certify that they are in compliance with all applicable export control laws and other laws meant to protect critical technologies. Any entity found to have made a false statement would be disbarred for no less than one year and NASA would be required to submit an annual report to Congress on violations.

Sec. 679. Small Satellite Launch Services Program

- Would require NASA to procure dedicated launch services for small satellites for conducting science and technology missions.
- Would require the agency to engage with the academic community on these opportunities.

Sec. 680. 21st Century Space Launch Infrastructure

- Would authorize a program to modernize launch infrastructure at NASA facilities.
- Would require NASA to prioritize investments in infrastructure that can be used by multiple users.
- Would limit investment to projects not funded by other NASA programs.

Sec. 681. Missions of National Need

- Would direct OSTP to study how NASA could fund missions of national need (e.g., space debris removal, asteroid detection for planetary defense) that do not necessarily provide the highest value science and therefore are often not selected for development through NASA's current funding process.

Sec. 682. Drinking Water Well Replacement for Chincoteague, Virginia

- The Town of Chincoteague, Virginia, has a number of wells located on NASA Wallops Flight Facility property. Four of these wells have been contaminated by per- and polyfluoroalkyl substances ("PFAS"). The town has stopped using the contaminated wells and is receiving temporary water supply from NASA until a permanent solution to this issue can be implemented. NASA is considering reimbursing the ToC for the purchase of property and installation of new production wells to replace all production wells located on NASA property, which this section would authorize.

Sec. 683. Passenger Carrier Use

- Would allow NASA to provide transportation for government astronauts when they return from space and in the immediate period thereafter when they are not medically cleared to drive, but need to attend medical appointments.

Sec. 684. Use of Commercial Near-Space Balloons

- Would direct NASA to use commercial near-space balloons when practicable to efficiently and effectively meet its goals.

Sec. 685. President's Space Advisory Board

- Would rename the existing Users' Advisory Group.

Sec. 686. Initiative on Technologies for Noise and Emissions Reduction

- Would require NASA to establish an initiative to build upon and accelerate previous or ongoing work to develop and demonstrate new technologies in electric aircraft propulsion concepts that are capable of substantially reducing both emissions and noise from aircraft.

Sec. 687. Remediation of Sites Contaminated with Trichloroethylene

- NASA would be required to identify all sites the agency has contaminated with trichloroethylene and submit a report to Congress with a recommended plan, including a cost estimate, for remediating the sites.

Sec. 688. Review on Preference for Domestic Suppliers

- NASA would be required to conduct a review of the domestic supplier preferences of the agency and its obligations under the Federal acquisition regulations to ensure compliance, including whether NASA has provided funding to a foreign-owned company or state-sponsored entity in recent years.

Sec. 689. Report on Use of Commercial Spaceports Licensed by the Federal Aviation Administration

- Would require NASA to compile a report on the current utilization of licensed spaceports, potential benefits of increased utilization, and the steps required for increased utilization.

Sec. 690. Active Orbital Debris Mitigation

- Would direct NASA to support the development of active orbital debris mitigation technologies and report to Congress on its progress.

Sec. 691. Study on Commercial Communications Services

- Would require NASA to conduct a study on the feasibility, impact, and cost of using commercial communications programs services for suborbital flight programs and low-Earth orbit research and submit the results of such study to Congress.