

Subtitle IV—Aeronautics and Space Research and Education

CHAPTER 401—AERONAUTICS

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SUBCHAPTER I—GENERAL

§ 40101. Definition of institution of higher education

In this chapter, the term “institution of higher education” has the meaning given the term by section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3378.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40101	42 U.S.C. 16701.	Pub. L. 109–155, title IV, § 401, Dec. 30, 2005, 119 Stat. 2923.

§ 40102. Governmental interest in aeronautics research and development

Congress reaffirms the national commitment to aeronautics research made in chapter 201 of this title. Aeronautics research and development remains a core mission of the Administration. The Administration is the lead agency for civil aeronautics research. Further, the government of the United States shall promote aeronautics research and development that will expand the capacity, ensure the safety, and increase the efficiency of the Nation’s air transportation system, promote the security of the Nation, protect the environment, and retain the leadership of the United States in global aviation.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3379.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40102	42 U.S.C. 16711.	Pub. L. 109–155, title IV, § 411, Dec. 30, 2005, 119 Stat. 2923.

Statutory Notes and Related Subsidiaries

EXPERIMENTAL AIRCRAFT PROJECTS

Pub. L. 117–167, div. B, title VII, § 10831, Aug. 9, 2022, 136 Stat. 1746, provided that:

“(a) SENSE OF CONGRESS.—It is the sense of Congress that—

“(1) developing high-risk, precompetitive aerospace technologies for which there is not yet a profit rationale is a fundamental role of the [National Aeronautics and Space] Administration;

“(2) large-scale flight test experimentation and validation are necessary for—

“(A) transitioning new technologies and materials, including associated manufacturing processes, for aviation and aeronautics use; and

“(B) capturing the full extent of benefits from investments made by the Aeronautics Research Mission Directorate; and

“(3) a level of funding that adequately supports large-scale flight test experimentation and validation, including related infrastructure, should be ensured over a sustained period of time to restore the capacity of the Administration—

“(A) to see legacy priority programs through to completion; and

“(B) to achieve national economic and security objectives.

“(b) STATEMENT OF POLICY.—It is the policy of the United States—

“(1) to maintain world leadership in—

“(A) civilian aeronautical science and technology; and

“(B) aerospace industrialization; and

“(2) to maintain as a fundamental objective of the aeronautics research of the Administration the steady progression and expansion of flight research and capabilities, including the science and technology of critical underlying disciplines and competencies, such as—

“(A) computational-based analytical and predictive tools and methodologies;

“(B) aerothermodynamics;

“(C) propulsion;

“(D) advanced materials and manufacturing processes;

“(E) high-temperature structures and materials; and

“(F) guidance, navigation, and flight controls.

“(c) EXPERIMENTAL AIRCRAFT FLIGHT DEMONSTRATIONS.—

“(1) IN GENERAL.—In meeting the objectives described in subsection (b), the Administrator [of the National Aeronautics and Space Administration] shall carry out experimental aircraft demonstrations, including—

“(A) a subsonic demonstrator to demonstrate the performance and feasibility of advanced, ultra-efficient, and low emissions subsonic flight demonstrator configurations;

“(B) a low boom flight demonstrator to validate design tools and technologies that can be applied to low sonic boom commercial supersonic aircraft and support the development of a noise-based standard for supersonic overland flight; and

“(C) a flight research demonstrator to test the performance and feasibility of advanced, ultra-efficient and net-zero emissions aircraft concepts and configurations.

“(2) ELEMENTS.—For each demonstration under paragraph (1), the Administrator shall—

“(A) include the development of experimental aircraft and all necessary supporting flight test assets;

“(B) pursue a robust technology maturation and flight test validation effort;

“(C) improve necessary facilities, flight testing capabilities, and computational tools to support the demonstration;

“(D) award any primary contracts for design, procurement, and manufacturing to United States per-

sons, consistent with international obligations and commitments; and

“(E) coordinate research and flight test demonstration activities with other Federal agencies and the United States aviation community, as the Administrator considers appropriate.

“(3) UNITED STATES PERSON DEFINED.—In this subsection, the term ‘United States person’ means—

“(A) a United States citizen or an alien lawfully admitted for permanent residence to the United States; or

“(B) an entity organized under the laws of the United States or of any jurisdiction within the United States, including a foreign branch of such an entity.

“(d) COLLABORATION WITH INDUSTRY AND ACADEMIA.—The Administration shall seek means to expand collaboration with industry and academia on basic research and technology development related to experimental aircraft, and on the experimental aircraft demonstrations required by subsection (c).

“(e) ADVANCED MATERIALS AND MANUFACTURING TECHNOLOGY PROGRAM.—

“(1) IN GENERAL.—The Administrator may establish an advanced materials and manufacturing technology program—

“(A) to develop—

“(i) new materials, including composite and high-temperature materials, from base material formulation through full-scale structural validation and manufacture;

“(ii) advanced materials and manufacturing processes, including additive manufacturing, to reduce the cost of manufacturing scale-up and certification for use in aeronautics; and

“(iii) noninvasive or nondestructive techniques for testing or evaluating aviation and aeronautics structures, including for materials and manufacturing processes;

“(B) to reduce the time it takes to design, industrialize, and certify advanced materials and manufacturing processes;

“(C) to provide education and training opportunities for the aerospace workforce; and

“(D) to address global cost and human capital competitiveness for United States aeronautical industries and technological leadership in advanced materials and manufacturing technology.

“(2) ELEMENTS.—In carrying out a program under paragraph (1), the Administrator may—

“(A) build on work that was carried out by the Advanced Composites Project of the Administration;

“(B) partner with the private and academic sectors, such as members of the Advanced Composites Consortium of the Administration, the Joint Advanced Materials and Structures Center of Excellence of the Federal Aviation Administration, the Manufacturing USA institutes of the Department of Commerce, and national laboratories, as the Administrator considers appropriate;

“(C) provide a structure for managing intellectual property generated by the program based on or consistent with the structure established for the Advanced Composites Consortium of the Administration;

“(D) ensure adequate Federal cost share for applicable research; and

“(E) coordinate with advanced manufacturing and composites initiatives in other mission directorates of the Administration, as the Administrator considers appropriate.

“(f) RESEARCH PARTNERSHIPS.—In carrying out the demonstrations under subsection (c) and a program under subsection (e), the Administrator may engage in cooperative research programs with—

“(1) academia; and

“(2) commercial aviation and aerospace manufacturers.”

[For definition of “Manufacturing USA institute” as used in section 10831 of Pub. L. 117–167, set out above,

see section 18901 of Title 42, The Public Health and Welfare.]

Executive Documents

EX. ORD. NO. 13419. NATIONAL AERONAUTICS RESEARCH AND DEVELOPMENT

Ex. Ord. No. 13419, Dec. 20, 2006, 71 F.R. 77565, provided:

By the authority vested in me as President by the Constitution and the laws of the United States of America, including section 204 of the National Science and Technology Policy, Organization, and Priorities Act of 1976, as amended (42 U.S.C. 6613), section 101(c) of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155), and section 301 of title 3, United States Code, it is hereby ordered as follows:

SECTION 1. *National Aeronautics Research and Development Policy.* Continued progress in aeronautics, the science of flight, is essential to America’s economic success and the protection of America’s security interests at home and around the globe. Accordingly, it shall be the policy of the United States to facilitate progress in aeronautics research and development (R&D) through appropriate funding and activities of the Federal Government, in cooperation with State, territorial, tribal, local, and foreign governments, international organizations, academic and research institutions, private organizations, and other entities, as appropriate. The Federal Government shall only undertake roles in supporting aeronautics R&D that are not more appropriately performed by the private sector. The National Aeronautics Research and Development Policy prepared by the National Science and Technology Council should, to the extent consistent with this order and its implementation, guide the aeronautics R&D programs of the United States through 2020.

SEC. 2. *Functions of the Director of the Office of Science and Technology Policy.* To implement the policy set forth in section 1 of this order, the Director of the Office of Science and Technology Policy (the “Director”) shall:

(a) review the funding and activities of the Federal Government relating to aeronautics R&D;

(b) recommend to the President, the Director of the Office of Management and Budget, and the heads of executive departments and agencies, as appropriate, such actions with respect to funding and activities of the Federal Government relating to aeronautics R&D as may be necessary to

(i) advance United States technological leadership in aeronautics;

(ii) support innovative research leading to significant advances in aeronautical concepts, technologies, and capabilities;

(iii) pursue and develop advanced aeronautics concepts and technologies, including those for advanced aircraft systems and air transportation management systems, to benefit America’s security and effective and efficient national airspace management;

(iv) maintain and advance United States aeronautics research, development, test and evaluation infrastructure to provide effective experimental and computational capabilities in support of aeronautics R&D;

(v) facilitate the educational development of the future aeronautics workforce as needed to further Federal Government interests;

(vi) enhance coordination and communication among executive departments and agencies to maximize the effectiveness of Federal Government R&D resources; and

(vii) ensure appropriate Federal Government coordination with State, territorial, tribal, local, and foreign governments, international organizations, academic and research institutions, private organizations, and other entities.

SEC. 3. *Implementation of National Aeronautics Research and Development Policy.* To implement the policy set forth in section 1 of this order, the Director shall:

(a) develop and, not later than 1 year after the date of this order, submit for approval by the President a plan for national aeronautics R&D and for related infrastructure, (the “plan”), and thereafter submit, not less often than biennially, to the President for approval any changes to the plan;

(b) monitor and report to the President as appropriate on the implementation of the approved plan;

(c) ensure that executive departments and agencies conducting aeronautics R&D:

(i) obtain and exchange information and advice, as appropriate, from organizations and individuals outside the Federal Government in support of Federal Government planning and performance of aeronautics R&D;

(ii) develop and implement, as appropriate, measures for improving dissemination of R&D results and facilitating technology transition from R&D to applications; and

(iii) identify and promote innovative policies and approaches that complement and enhance Federal Government aeronautics R&D investment; and

(d) report to the President on the results of the efforts of executive departments and agencies to implement paragraphs (c)(i) through (iii) of this section.

SEC. 4. *General Provisions.* (a) In implementing this order, the Director shall:

(i) obtain as appropriate the assistance of the National Science and Technology Council in the performance of the Director’s functions under this order, consistent with Executive Order 12881 of November 23, 1993, as amended;

(ii) coordinate as appropriate with the Director of the Office of Management and Budget; and

(iii) obtain information and advice from all sources as appropriate, including individuals associated with academic and research institutions and private organizations.

(b) The functions of the President under subsection (c) of section 101 of the National Aeronautics and Space Administration Authorization Act of 2005, except the function of designation, are assigned to the Director of the Office of Science and Technology Policy. In performing these assigned functions, the Director shall, as appropriate, consult the Administrator of the National Aeronautics and Space Administration, the Secretary of Defense, the Secretary of Transportation, the Director of the Office of Management and Budget, and other heads of executive departments and agencies as appropriate. The Director also shall ensure that all actions taken in the performance of such functions are consistent with the authority set forth in subsections (a) through (d) of section 6 of Executive Order 13346 of July 8, 2004.

(c) This order shall be implemented in a manner consistent with:

(i) applicable law, including section 102A(i) of the National Security Act of 1947, as amended ([former] 50 U.S.C. 403-1(i)) [now 50 U.S.C. 3024(i)], and subject to the availability of appropriations; and

(ii) statutory authority of the principal officers of executive departments and agencies as the heads of their respective departments and agencies.

(d) This order shall not be construed to impair or otherwise affect the functions of the Director of the Office of Management and Budget relating to budget, administrative, and legislative proposals.

(e) This order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity by a party against the United States, its departments, agencies, instrumentalities, or entities, its officers, employees, or agents, or any other person.

GEORGE W. BUSH.

§ 40103. Cooperation with other agencies on aeronautics activities

The Administrator shall coordinate, as appropriate, the Administration’s aeronautics activities with relevant programs in the Department

of Transportation, the Department of Defense, the Department of Commerce, and the Department of Homeland Security, including the activities of the Next Generation Air Transportation System Joint Planning and Development Office established under section 709 of the Vision 100—Century of Aviation Reauthorization Act (Public Law 108–176, 49 U.S.C. 40101 note).

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3379.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40103	42 U.S.C. 16712(b).	Pub. L. 110–69, title II, § 2002(b), Aug. 9, 2007, 121 Stat. 583.

The words “Next Generation Air Transportation System” are inserted before “Joint Planning and Development Office” for consistency with section 709 of the Vision 100—Century of Aviation Reauthorization Act (Public Law 108–176, 49 U.S.C. 40101 note).

§ 40104. Cooperation among Mission Directorates

Research and development activities performed by the Aeronautics Research Mission Directorate with the primary objective of assisting in the development of a flight project in another Mission Directorate shall be funded by the Mission Directorate seeking assistance.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3379.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40104	42 U.S.C. 17724.	Pub. L. 110–422, title III, § 307, Oct. 15, 2008, 122 Stat. 4788.

SUBCHAPTER II—HIGH PRIORITY AERONAUTICS RESEARCH AND DEVELOPMENT PROGRAMS

§ 40111. Fundamental research program

(a) OBJECTIVE.—In order to ensure that the Nation maintains needed capabilities in fundamental areas of aeronautics research, the Administrator shall establish a program of long-term fundamental research in aeronautical sciences and technologies that is not tied to specific development projects.

(b) OPERATION.—The Administrator shall conduct the program under this section, in part by awarding grants to institutions of higher education. The Administrator shall encourage the participation of institutions of higher education located in States that participate in the Experimental Program to Stimulate Competitive Research. All grants to institutions of higher education under this section shall be awarded through merit review.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3379.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40111	42 U.S.C. 16721(a), (b).	Pub. L. 109–155, title IV, § 421(a), (b), Dec. 30, 2005, 119 Stat. 2924.

§ 40112. Research and technology programs

(a) SUPERSONIC TRANSPORT RESEARCH AND DEVELOPMENT.—The Administrator may establish an initiative with the objective of developing and demonstrating, in a relevant environment, airframe and propulsion technologies to enable efficient, economical overland flight of supersonic civil transport aircraft with no significant impact on the environment.

(b) RESEARCH AND DEVELOPMENT INITIATIVE ON REDUCTION OF GREENHOUSE GAS AND NOISE EMISSIONS FROM AIRCRAFT.—

(1) IN GENERAL.—The Administrator shall establish an initiative to research, develop, and demonstrate new technologies and concepts—

(A) to reduce greenhouse gas emissions from aviation, including carbon dioxide, nitrogen oxides, other greenhouse gases, water vapor, black carbon and sulfate aerosols, and increased cloudiness due to contrail formation;

(B) to reduce aviation noise emissions; and

(C) to enable associated aircraft performance characteristics.

(2) GOALS.—The goals of the initiative required by paragraph (1) shall be—

(A) to ensure United States leadership in research and technology innovation leading to substantial reductions in aviation noise and greenhouse gas emissions;

(B) to enhance and expand basic research, and the translation of basic research into applications, that may lead to transformational advances in reducing aviation noise and greenhouse gas emissions;

(C) to accelerate research and development that contributes to maturing new technologies for reducing aircraft noise and greenhouse gas emissions; and

(D) to obtain and disseminate associated testing and performance data that facilitates the incorporation of new technologies into commercial aircraft development as soon as practicable.

(3) OBJECTIVES.—The objectives of the initiative established under paragraph (1) and the goals described in paragraph (2) shall include—

(A) as soon as practicable, a reduction of greenhouse gas emissions from new aircraft by at least 50 percent, as compared to the highest-performing aircraft technologies in service as of December 31, 2021;

(B) noise levels from aircraft throughout all phases of flight that do not exceed ambient noise levels in the absence of flight operations in the vicinity of the flight route;

(C) net-zero greenhouse gas emissions from aircraft by 2050; and

(D) demonstration of new technologies developed pursuant to such initiative on—

(i) regional aircraft intended to enter into service by 2030; and

(ii) single-aisle aircraft designed to accommodate more than 125 passengers intended to enter into service by 2040.

(c) ROTORCRAFT AND OTHER RUNWAY-INDEPENDENT AIR VEHICLES.—The Administrator may establish a rotorcraft and other runway-independent air vehicles initiative with the objec-

tive of developing and demonstrating improved safety, noise, and environmental impact in a relevant environment.

(d) HYPERSONICS RESEARCH.—The Administrator may establish a hypersonics research program with the objective of exploring the science and technology of hypersonic flight using air-breathing propulsion concepts, through a mix of theoretical work, basic and applied research, and development of flight research demonstration vehicles. The program may also include the transition to the hypersonic range of Mach 3 to Mach 5.

(e) REVOLUTIONARY AERONAUTICAL CONCEPTS.—The Administrator may establish a research program which covers a unique range of subsonic, fixed wing vehicles and propulsion concepts. This research is intended to push technology barriers beyond current subsonic technology. Propulsion concepts include advanced materials, morphing engines, hybrid engines, and fuel cells.

(f) FUEL CELL-POWERED AIRCRAFT RESEARCH.—

(1) OBJECTIVE.—The Administrator may establish a fuel cell-powered aircraft research program whose objective shall be to develop and test concepts to enable a hydrogen fuel cell-powered aircraft that would have no hydrocarbon or nitrogen oxide emissions into the environment.

(2) APPROACH.—The Administrator may establish a program of competitively awarded grants available to teams of researchers that may include the participation of individuals from universities, industry, and government for the conduct of this research.

(g) MARS AIRCRAFT RESEARCH.—

(1) OBJECTIVE.—The Administrator may establish a Mars Aircraft project whose objective shall be to develop and test concepts for an uncrewed aircraft that could operate for sustained periods in the atmosphere of Mars.

(2) APPROACH.—The Administrator may establish a program of competitively awarded grants available to teams of researchers that may include the participation of individuals from universities, industry, and government for the conduct of this research.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3379; Pub. L. 117–167, div. B, title VII, § 10833(a), Aug. 9, 2022, 136 Stat. 1749.)

HISTORICAL AND REVISION NOTES

Revised Section	Source (U.S. Code)	Source (Statutes at Large)
40112(a)	42 U.S.C. 16722(b).	Pub. L. 109–155, title IV, § 422(b)–(g), Dec. 30, 2005, 119 Stat. 2925.
40112(b)	42 U.S.C. 16722(c).	
40112(c)	42 U.S.C. 16722(d).	
40112(d)	42 U.S.C. 16722(e).	
40112(e)	42 U.S.C. 16722(f).	
40112(f)	42 U.S.C. 16722(g).	

Editorial Notes

AMENDMENTS

2022—Subsecs. (b) to (g). Pub. L. 117–167 added subsec. (b) and redesignated former subsecs. (b) to (f) as (c) to (g), respectively.

Statutory Notes and Related Subsidiaries

TECHNOLOGY FOCUS AREAS, IMPLEMENTATION, AND ANNUAL REPORT FOR THE RESEARCH AND DEVELOPMENT INITIATIVE

Pub. L. 117–167, div. B, title VII, §10833(b)–(d), Aug. 9, 2022, 136 Stat. 1750, 1751, provided that:

“(b) TECHNOLOGY FOCUS AREAS.—In carrying out the research and development initiative established under section 40112(b) of title 51, United States Code, the Administrator [of the National Aeronautics and Space Administration] shall advance research, development, and demonstration projects on promising technologies such as—

“(1) advanced subsonic propulsion technology, design, and integration;

“(2) electric and hybrid-electric propulsion, including battery electric and hydrogen fuel cell electric systems;

“(3) airframe concepts and configurations;

“(4) analysis of technology options, including cost-benefit analysis of greenhouse gas and noise emissions reduction technologies;

“(5) analytical tools for system-level and system-of-systems-level modeling and integration;

“(6) airspace operations improvements;

“(7) noise emissions reduction; and

“(8) any other effort, as determined by the [National Aeronautics and Space] Administration, that contributes to a sustainable future for aviation.

“(c) IMPLEMENTATION.—In implementing the initiative established under section 40112(b) of title 51, United States Code, the Administrator shall, to the extent practicable—

“(1) ensure that testing and performance data integrates the results of community acceptance surveys conducted by the Federal Aviation Administration and other relevant studies, including studies on the impacts of new noise effects from novel propulsion systems and from airspace operations changes;

“(2) provide testing and performance data on the technologies described in subsection (b) of this section to the Administrator of the Federal Aviation Administration to facilitate the work of the Federal Aviation Administration in identifying new requirements for policy, infrastructure, and administrative capacity necessary to enable the safe integration of such technologies on aircraft;

“(3) pursue partnerships with organizations, current commercial production aircraft providers, academic institutions, small businesses, and new entrants, including partnerships to advance research and development activities related to both regional aircraft and aircraft designed to accommodate more than 125 passengers;

“(4) include universities, academic institutions, and other research organizations in the partnerships described in paragraph (3);

“(5) expand basic research;

“(6) ensure equity in research sponsorship of, and partnership opportunities with, underrepresented students, faculty, and minority-serving-institutions [sic];

“(7) continue to coordinate with the Secretary of Energy on battery technology research;

“(8) make available the research and development carried out under the initiative established under subsection (b) of section 40112 of title 51, United States Code, to help enable an industry-wide shift toward aircraft concepts that reduce greenhouse gas emissions and aircraft noise to achieve the goals and objectives under paragraphs (2) and (3) of that subsection; and

“(9) continue to support research, development, and demonstration of aircraft concepts, including systems architecture, materials and components, integration of systems and airframe structures, human factors, airspace planning and operations, and the integration of related advanced technologies and concepts, with the goal of carrying out test flights with integrated subsystems by 2025.

“(d) ANNUAL REPORT.—Not later than 1 year after the date of the enactment of this Act [Aug. 9, 2022], and annually thereafter, the Administrator shall submit to the appropriate committees of Congress [Committee on Commerce, Science, and Transportation of the Senate and Committee on Science, Space, and Technology of the House of Representatives] a report on the progress of the efforts carried out under the initiative established under subsection (b) of section 40112 of title 51, United States Code, including—

“(1) the status of progress on such initiative;

“(2) an updated, anticipated timeframe for readiness of technologies and aircraft to be adopted by industry with the emissions reduction levels directed under that subsection; and

“(3) an identification of fundamental aeronautics research activities contributing to achieving the goals and objectives of such initiative, as described in paragraphs (2) and (3) of that subsection, and a description of any obstacles to achieving such goals and objectives.”

[For definition of “minority-serving institution” as used in section 10833(b)–(d) of Pub. L. 117–167, set out above, see section 18901 of Title 42, The Public Health and Welfare.]

NATIONAL AERO-SPACE PLANE PROGRAM

Pub. L. 101–611, title I, §116, Nov. 16, 1990, 104 Stat. 3202, provided that:

“(a) NATIONAL AERO-SPACE PLANE PROGRAM.—The Secretary of Defense (hereafter in this section referred to as the ‘Secretary’) and the Administrator shall jointly pursue on a high priority basis a National Aero-Space Plane program whose objective shall be the development and demonstration, by 1997, of a primarily air breathing single-stage-to-orbit and long range hypersonic cruise research flight vehicle. The program shall be a research program, and to the extent practicable technological information developed shall be transferred to the military and to the domestic civil aviation and other private industries.

“(b) MANAGEMENT PLAN.—

“(1) The Secretary and the Administrator [sic] shall jointly develop a management plan for the program established under subsection (a), which shall include goals, major tasks, anticipated schedules, organizational structure, funding profiles, details of the respective responsibilities of the Secretary and the Administrator, and resource procurement strategies.

“(2) The management plan developed pursuant to paragraph (1) shall be submitted to the Congress within 120 days after the date of enactment of this Act [Nov. 16, 1990].”

[Pub. L. 101–611, title I, §127, Nov. 16, 1990, 104 Stat. 3205, provided that: “For purposes of this title [see Tables for classification], the term ‘Administrator’ means the Administrator of the National Aeronautics and Space Administration.”]

§ 40113. Airspace systems research

(a) OBJECTIVE.—The Airspace Systems Research program shall pursue research and development to enable revolutionary improvements to and modernization of the National Airspace System, as well as to enable the introduction of new systems for vehicles that can take advantage of an improved, modern air transportation system.

(b) ALIGNMENT.—Not later than 1 year after December 30, 2005, the Administrator shall align the projects of the Airspace Systems Research program so that they directly support the objectives of the Joint Planning and Development Office’s Next Generation Air Transportation System Integrated Plan.

(Pub. L. 111–314, §3, Dec. 18, 2010, 124 Stat. 3380.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40113	42 U.S.C. 16723.	Pub. L. 109-155, title IV, § 423, Dec. 30, 2005, 119 Stat. 2925.

In subsection (b), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155, 119 Stat. 2895).

Statutory Notes and Related Subsidiaries

UNMANNED AIRCRAFT SYSTEMS

Pub. L. 117-167, div. B, title VII, § 10832, Aug. 9, 2022, 136 Stat. 1748, provided that:

“(a) UNMANNED AIRCRAFT SYSTEMS OPERATION PROGRAM.—The Administrator [of the National Aeronautics and Space Administration] shall—

“(1) research and test capabilities and concepts, including unmanned aircraft systems communications, for integrating unmanned aircraft systems into the national airspace system;

“(2) leverage the partnership NASA [National Aeronautics and Space Administration] has with industry focused on the advancement of technologies for future air traffic management systems for unmanned aircraft systems; and

“(3) continue to leverage the research and testing portfolio of NASA to inform the integration of unmanned aircraft systems into the national airspace system, consistent with public safety and national security objectives.

“(b) SENSE OF CONGRESS ON COORDINATION WITH FEDERAL AVIATION ADMINISTRATION.—It is the sense of Congress that—

“(1) NASA should continue—

“(A) to coordinate with the Federal Aviation Administration on research on air traffic management systems for unmanned aircraft systems; and

“(B) to assist the Federal Aviation Administration in the integration of air traffic management systems for unmanned aircraft systems into the national airspace system; and

“(2) the test ranges (as defined in section 44801 of title 49, United States Code) should continue to be leveraged for research on—

“(A) air traffic management systems for unmanned aircraft systems; and

“(B) the integration of such systems into the national airspace system.”

[For definition of “unmanned aircraft system” as used in section 10832 of Pub. L. 117-167, set out above, see section 10802 of Pub. L. 117-167, set out as a Definitions note under section 10101 of this title.]

§ 40114. Aviation safety and security research

(a) OBJECTIVE.—The Aviation Safety and Security Research program shall pursue research and development activities that directly address the safety and security needs of the National Airspace System and the aircraft that fly in it. The program shall develop prevention, intervention, and mitigation technologies aimed at causal, contributory, or circumstantial factors of aviation accidents.

(b) ALIGNMENT.—Not later than 1 year after December 30, 2005, the Administrator shall align the projects of the Aviation Safety and Security Research program so that they directly support the objectives of the Joint Planning and Development Office’s Next Generation Air Transportation System Integrated Plan.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3380.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40114	42 U.S.C. 16724.	Pub. L. 109-155, title IV, § 424, Dec. 30, 2005, 119 Stat. 2926.

In subsection (b), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155, 119 Stat. 2895).

§ 40115. Aviation weather research

The Administrator may carry out a program of collaborative research with the National Oceanic and Atmospheric Administration on convective weather events, with the goal of significantly improving the reliability of 2-hour to 6-hour aviation weather forecasts.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3381.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40115	42 U.S.C. 16725.	Pub. L. 109-155, title IV, § 425, Dec. 30, 2005, 119 Stat. 2926.

§ 40116. University-based Centers for Research on Aviation Training

(a) IN GENERAL.—The Administrator shall award grants to institutions of higher education (or consortia thereof) to establish one or more Centers for Research on Aviation Training under cooperative agreements with appropriate Administration Centers.

(b) PURPOSE.—The purpose of the Centers for Research on Aviation Training shall be to investigate the impact of new technologies and procedures, particularly those related to the aircraft flight deck and to the air traffic management functions, on training requirements for pilots and air traffic controllers.

(c) APPLICATION.—An institution of higher education (or a consortium of such institutions) seeking funding under this section shall submit an application to the Administrator at such time, in such manner, and containing such information as the Administrator may require, including, at a minimum, a 5-year research plan.

(d) AWARD DURATION.—An award made by the Administrator under this section shall be for a period of 5 years and may be renewed on the basis of—

(1) satisfactory performance in meeting the goals of the research plan proposed in the application submitted under subsection (c); and

(2) other requirements as specified by the Administrator.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3381.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40116	42 U.S.C. 16727.	Pub. L. 109-155, title IV, § 427, Dec. 30, 2005, 119 Stat. 2926; Pub. L. 110-422, title III, § 308, Oct. 15, 2008, 122 Stat. 4788.

In subsection (b), the words “Centers for Research on Aviation Training” are substituted for “Centers” for

clarity. There are references to both “Centers for Research on Aviation Training” and “Administration Centers” in subsection (a).

In subsection (d)(1), the words “proposed in the application submitted under subsection (c)” are substituted for “proposed by the Center in its application under subsection (c)” for clarity. Under section (c), applications are filed by an institution of higher education (or a consortium of such institutions) seeking funding, and not by the Center for which such funding is sought.

SUBCHAPTER III—SCHOLARSHIPS

§ 40131. Aeronautics scholarships

(a) **ESTABLISHMENT.**—The Administrator shall establish a program of scholarships for full-time graduate students who are United States citizens and are enrolled in, or have been accepted by and have indicated their intention to enroll in, accredited Masters degree programs in aeronautical engineering or equivalent programs at institutions of higher education. Each such scholarship shall cover the costs of room, board, tuition, and fees, and may be provided for a maximum of 2 years.

(b) **IMPLEMENTATION.**—Not later than 180 days after December 30, 2005, the Administrator shall publish regulations governing the scholarship program under this section.

(c) **COOPERATIVE TRAINING OPPORTUNITIES.**—Students who have been awarded a scholarship under this section shall have the opportunity for paid employment at one of the Administration Centers engaged in aeronautics research and development during the summer prior to the first year of the student’s Masters program, and between the first and second year, if applicable.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3381.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40131	42 U.S.C. 16741.	Pub. L. 109–155, title IV, § 431, Dec. 30, 2005, 119 Stat. 2927.

In subsection (b), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

SUBCHAPTER IV—DATA REQUESTS

§ 40141. Aviation data requests

The Administrator shall make available upon request satellite imagery and aerial photography of remote terrain that the Administration owns at the time of the request to the Administrator of the Federal Aviation Administration or the Director of the Five Star Medallion Program, to assist and train pilots in navigating challenging topographical features of such terrain.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3382.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40141	42 U.S.C. 16751.	Pub. L. 109–155, title IV, § 441, Dec. 30, 2005, 119 Stat. 2927.

CHAPTER 403—NATIONAL SPACE GRANT COLLEGE AND FELLOWSHIP PROGRAM

<i>Sec.</i>	<i>Purposes.</i>
40301.	Purposes.
40302.	Definitions.
40303.	National space grant college and fellowship program.
40304.	Grants or contracts.
40305.	Specific national needs.
40306.	Space grant college and space grant regional consortium.
40307.	Space grant fellowship program.
40308.	Space grant review panel.
40309.	Availability of other Federal personnel and data.
40310.	Designation or award to be on competitive basis.
40311.	Continuing emphasis.

§ 40301. Purposes

The purposes of this chapter are to—

(1) increase the understanding, assessment, development, and utilization of space resources by promoting a strong educational base, responsive research and training activities, and broad and prompt dissemination of knowledge and techniques;

(2) utilize the abilities and talents of the universities of the Nation to support and contribute to the exploration and development of the resources and opportunities afforded by the space environment;

(3) encourage and support, within the university community of the Nation, the existence of interdisciplinary and multidisciplinary programs of space research that—

(A) engage in integrated activities of training, research, and public service;

(B) have cooperative programs with industry; and

(C) are coordinated with the overall program of the Administration;

(4) encourage and support the existence of consortia, made up of university and industry members, in order to advance the exploration and development of space resources in cases in which national objectives can be better fulfilled through such consortia than through the programs of single universities;

(5) encourage and support Federal funding for graduate fellowships in fields related to space; and

(6) support activities in colleges and universities generally for the purpose of creating and operating a network of institutional programs that will enhance achievements resulting from efforts under this chapter.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3382.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40301	42 U.S.C. 2486a.	Pub. L. 100–147, title II, § 203, Oct. 30, 1987, 101 Stat. 869.

In paragraph (3), the word “that” is substituted for “, to” for clarity.

In paragraph (4), the words “in order to” are substituted for “to”, and the words “through such consortia” are added, for clarity.

Statutory Notes and Related Subsidiaries

CONGRESSIONAL STATEMENT OF FINDINGS

Pub. L. 100-147, title II, §202, Oct. 30, 1987, 101 Stat. 869, provided that: “The Congress finds that—

“(1) the vitality of the Nation and the quality of life of the citizens of the Nation depend increasingly on the understanding, assessment, development, and utilization of space resources;

“(2) research and development of space science, space technology, and space commercialization will contribute to the quality of life, national security, and the enhancement of commerce;

“(3) the understanding and development of the space frontiers require a broad commitment and an intense involvement on the part of the Federal Government in partnership with State and local governments, private industry, universities, organizations, and individuals concerned with the exploration and utilization of space;

“(4) the National Aeronautics and Space Administration, through the national space grant college and fellowship program, offers the most suitable means for such commitment and involvement through the promotion of activities that will result in greater understanding, assessment, development, and utilization; and

“(5) Federal support of the establishment, development, and operation of programs and projects by space grant colleges, space grant regional consortia, institutions of higher education, institutes, laboratories, and other appropriate public and private entities is the most cost-effective way to promote such activities.”

[For definition of terms used in section 202 of Pub. L. 100-147, set out above, see section 204 of Pub. L. 100-147, title II, Oct. 30, 1987, 101 Stat. 870, which was classified to former section 2486b of Title 42, The Public Health and Welfare, and was repealed and reenacted as section 40302 of this title by Pub. L. 111-314, §§ 3, 6, Dec. 18, 2010, 124 Stat. 3328, 3444.]

§ 40302. Definitions

In this chapter:

(1) **AERONAUTICAL AND SPACE ACTIVITIES.**—The term “aeronautical and space activities” has the meaning given the term in section 20103 of this title.

(2) **FIELD RELATED TO SPACE.**—The term “field related to space” means any academic discipline or field of study (including the physical, natural, and biological sciences, and engineering, space technology, education, economics, sociology, communications, planning, law, international affairs, and public administration) which is concerned with or likely to improve the understanding, assessment, development, and utilization of space.

(3) **PANEL.**—The term “panel” means the space grant review panel established pursuant to section 40308 of this title.

(4) **PERSON.**—The term “person” means any individual, any public or private corporation, partnership, or other association or entity (including any space grant college, space grant regional consortium, institution of higher education, institute, or laboratory), or any State, political subdivision of a State, or agency or officer of a State or political subdivision of a State.

(5) **SPACE ENVIRONMENT.**—The term “space environment” means the environment beyond the sensible atmosphere of the Earth.

(6) **SPACE GRANT COLLEGE.**—The term “space grant college” means any public or private in-

stitution of higher education which is designated as such by the Administrator pursuant to section 40306 of this title.

(7) **SPACE GRANT PROGRAM.**—The term “space grant program” means any program that—

(A) is administered by any space grant college, space grant regional consortium, institution of higher education, institute, laboratory, or State or local agency; and

(B) includes 2 or more projects involving education and one or more of the following activities in the fields related to space:

(i) Research.

(ii) Training.

(iii) Advisory services.

(8) **SPACE GRANT REGIONAL CONSORTIUM.**—The term “space grant regional consortium” means any association or other alliance that is designated as a space grant regional consortium by the Administrator pursuant to section 40306 of this title.

(9) **SPACE RESOURCE.**—The term “space resource” means any tangible or intangible benefit which can be realized only from—

(A) aeronautical and space activities; or

(B) advancements in any field related to space.

(10) **STATE.**—The term “State” means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or any other territory or possession of the United States.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3383.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40302	42 U.S.C. 2486b.	Pub. L. 100-147, title II, §204, Oct. 30, 1987, 101 Stat. 870.

The definitions of “Administration” and “Administrator” in section 204 of the National Space Grant College and Fellowship Act (Public Law 100-147, title II, 101 Stat. 870) are omitted as unnecessary because of the definitions added by section 10101 of title 51.

§ 40303. National space grant college and fellowship program

(a) **ESTABLISHMENT.**—The Administrator shall establish and maintain, within the Administration, a program to be known as the national space grant college and fellowship program. The national space grant college and fellowship program shall consist of the financial assistance and other activities provided for in this chapter. The Administrator shall establish long-range planning guidelines and priorities, and adequately evaluate the program.

(b) **FUNCTIONS.**—Within the Administration, the program shall—

(1) apply the long-range planning guidelines and the priorities established by the Administrator under subsection (a);

(2) advise the Administrator with respect to the expertise and capabilities which are available through the national space grant college and fellowship program, and make such expertise available to the Administration as directed by the Administrator;

(3) evaluate activities conducted under grants and contracts awarded pursuant to sections 40304 and 40305 of this title to ensure that the purposes set forth in section 40301 of this title are implemented;

(4) encourage other Federal departments, agencies, and instrumentalities to use and take advantage of the expertise and capabilities which are available through the national space grant college and fellowship program, on a cooperative or other basis;

(5) encourage cooperation and coordination with other Federal programs concerned with the development of space resources and fields related to space;

(6) advise the Administrator on the designation of recipients supported by the national space grant college and fellowship program and, in appropriate cases, on the termination or suspension of any such designation; and

(7) encourage the formation and growth of space grant and fellowship programs.

(c) **GENERAL AUTHORITIES.**—To carry out the provisions of this chapter, the Administrator may—

(1) accept conditional or unconditional gifts or donations of services, money, or property, real, personal or mixed, tangible or intangible;

(2) accept and use funds from other Federal departments, agencies, and instrumentalities to pay for fellowships, grants, contracts, and other transactions; and

(3) issue such rules and regulations as may be necessary and appropriate.

(d) **PROGRAM ADMINISTRATION COSTS.**—In carrying out the provisions of this chapter, the Administrator—

(1) shall maximize appropriated funds for grants and contracts made under section 40304 in each fiscal year; and

(2) in each fiscal year, the Administrator shall limit its program administration costs to no more than 5 percent of funds appropriated for this program for that fiscal year.

(e) **REPORTS.**—For any fiscal year in which the Administrator cannot meet the administration cost target under subsection (d)(2), if the Administration is unable to limit program costs under subsection (b), the Administrator shall submit to the appropriate committees of Congress a report, including—

(1) a description of why the Administrator did not meet the cost target under subsection (d); and

(2) the measures the Administrator will take in the next fiscal year to meet the cost target under subsection (d) without drawing upon other Federal funding.

(Pub. L. 111–314, §3, Dec. 18, 2010, 124 Stat. 3383; Pub. L. 114–329, title III, §302(b), Jan. 6, 2017, 130 Stat. 3003.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40303	42 U.S.C. 2486c.	Pub. L. 100–147, title II, §205, Oct. 30, 1987, 101 Stat. 871.

Editorial Notes

AMENDMENTS

2017—Subsecs. (d), (e). Pub. L. 114–329 added subsecs. (d) and (e).

§ 40304. Grants or contracts

(a) **AUTHORITY OF ADMINISTRATOR.**—The Administrator may make grants and enter into contracts or other transactions under this subsection to assist any space grant and fellowship program or project if the Administrator finds that the program or project will carry out the purposes set forth in section 40301 of this title. The total amount paid pursuant to a grant or contract may equal not more than 66 percent of the total cost of the space grant and fellowship program or project involved, except in the case of grants or contracts paid for with funds accepted by the Administrator pursuant to section 40303(c)(2) of this title.

(b) **SPECIAL GRANTS.**—The Administrator may make special grants under this subsection to carry out the purposes set forth in section 40301 of this title. The amount of a special grant may equal up to 100 percent of the total cost of the project involved. A special grant may be made under this subsection only if the Administrator finds that—

(1) no reasonable means is available through which the applicant can meet the matching requirement for a grant under subsection (a);

(2) the probable benefit of the project outweighs the public interest in the matching requirement; and

(3) the same or equivalent benefit cannot be obtained through the award of a contract or grant under subsection (a) or section 40305 of this title.

(c) **APPLICATION.**—Any person may apply to the Administrator for a grant or contract under this section. Application shall be made in such form and manner, and with such content and other submissions, as the Administrator shall by regulation prescribe.

(d) **TERMS AND CONDITIONS.**—

(1) **IN GENERAL.**—Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in paragraphs (2) and (3) and to such other terms, conditions, and requirements as the Administrator considers necessary or appropriate.

(2) **LIMITATIONS.**—No payment under any grant or contract under this section may be applied to—

(A) the purchase of any land;

(B) the purchase, construction, preservation, or repair of any building; or

(C) the purchase or construction of any launch facility or launch vehicle.

(3) **LEASES.**—Notwithstanding paragraph (2), the items in subparagraphs (A), (B), and (C) of such paragraph may be leased upon written approval of the Administrator.

(4) **RECORDS.**—Any person that receives or utilizes any proceeds of any grant or contract under this section shall keep such records as the Administrator shall by regulation prescribe as being necessary and appropriate to

facilitate effective audit and evaluation, including records which fully disclose the amount and disposition by such recipient of such proceeds, the total cost of the program or project in connection with which such proceeds were used, and the amount, if any, of such cost which was provided through other sources. Such records shall be maintained for 3 years after the completion of such a program or project. The Administrator and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access, for the purpose of audit and evaluation, to any books, documents, papers, and records of receipts which, in the opinion of the Administrator or the Comptroller General, may be related or pertinent to such grants and contracts.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3384.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40304	42 U.S.C. 2486d.	Pub. L. 100–147, title II, § 206, Oct. 30, 1987, 101 Stat. 872.

In subsection (a), the words “not more than 66 percent” are substituted for “66 percent, or any lesser percent”, and the word “except” is substituted for “except that this limitation shall not apply”, for clarity and to eliminate unnecessary words.

In subsection (b), the words “up to 100 percent” are substituted for “100 percent, or any lesser percent” to eliminate unnecessary words.

§ 40305. Specific national needs

(a) IDENTIFICATION OF SPECIFIC NEEDS AND GRANT-MAKING AND CONTRACTING AUTHORITY.—The Administrator shall identify specific national needs and problems relating to space. The Administrator may make grants or enter into contracts under this section with respect to such needs or problems. The amount of any such grant or contract may equal up to 100 percent of the total cost of the project involved.

(b) APPLICATIONS FOR GRANTS OR CONTRACTS.—Any person may apply to the Administrator for a grant or contract under this section. In addition, the Administrator may invite applications with respect to specific national needs or problems identified under subsection (a). Application shall be made in such form and manner, and with such content and other submissions, as the Administrator shall by regulation prescribe. Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in paragraphs (2) and (4) of section 40304(d) of this title and to such other terms, conditions, and requirements as the Administrator considers necessary or appropriate.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3385.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40305	42 U.S.C. 2486e.	Pub. L. 100–147, title II, § 207, Oct. 30, 1987, 101 Stat. 873.

In subsection (a), the words “up to 100 percent” are substituted for “100 percent, or any lesser percent” to eliminate unnecessary words.

§ 40306. Space grant college and space grant regional consortium

(a) DESIGNATION AND QUALIFICATIONS.—

(1) AUTHORITY TO DESIGNATE.—The Administrator may designate—

(A) any institution of higher education as a space grant college; and

(B) any association or other alliance of 2 or more persons, other than individuals, as a space grant regional consortium.

(2) SPACE GRANT COLLEGE REQUIREMENTS.—No institution of higher education may be designated as a space grant college unless the Administrator finds that such institution—

(A) is maintaining a balanced program of research, education, training, and advisory services in fields related to space;

(B) will act in accordance with such guidelines as are prescribed under subsection (b)(2); and

(C) meets such other qualifications as the Administrator considers necessary or appropriate.

(3) SPACE GRANT REGIONAL CONSORTIUM REQUIREMENTS.—No association or other alliance of 2 or more persons may be designated as a space grant regional consortium unless the Administrator finds that such association or alliance—

(A) is established for the purpose of sharing expertise, research, educational facilities or training facilities, and other capabilities in order to facilitate research, education, training, and advisory services in any field related to space;

(B) will encourage and follow a regional approach to solving problems or meeting needs relating to space, in cooperation with appropriate space grant colleges, space grant programs, and other persons in the region;

(C) will act in accordance with such guidelines as are prescribed under subsection (b)(2); and

(D) meets such other qualifications as the Administrator considers necessary or appropriate.

(b) QUALIFICATIONS AND GUIDELINES.—The Administrator shall by regulation prescribe—

(1) the qualifications required to be met under paragraphs (2)(C) and (3)(D) of subsection (a); and

(2) guidelines relating to the activities and responsibilities of space grant colleges and space grant regional consortia.

(c) SUSPENSION OR TERMINATION OF DESIGNATION.—The Administrator may, for cause and after an opportunity for hearing, suspend or terminate any designation under subsection (a).

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3386.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40306	42 U.S.C. 2486f.	Pub. L. 100–147, title II, § 208, Oct. 30, 1987, 101 Stat. 873.

§ 40307. Space grant fellowship program

(a) AWARD OF FELLOWSHIPS.—The Administrator shall support a space grant fellowship

program to provide educational and training assistance to qualified individuals at the graduate level of education in fields related to space. Such fellowships shall be awarded pursuant to guidelines established by the Administrator. Space grant fellowships shall be awarded to individuals at space grant colleges, space grant regional consortia, other colleges and institutions of higher education, professional associations, and institutes in such a manner as to ensure wide geographic and institutional diversity in the pursuit of research under the fellowship program.

(b) **LIMITATION ON AMOUNT PROVIDED.**—The total amount which may be provided for grants under the space grant fellowship program during any fiscal year shall not exceed an amount equal to 50 percent of the total funds appropriated for such year pursuant to this chapter.

(c) **AUTHORITY TO SPONSOR OTHER RESEARCH FELLOWSHIP PROGRAMS UNAFFECTED.**—Nothing in this section shall be construed to prohibit the Administrator from sponsoring any research fellowship program, including any special emphasis program, which is established under an authority other than this chapter.

(Pub. L. 111-314, §3, Dec. 18, 2010, 124 Stat. 3387.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40307	42 U.S.C. 2486g.	Pub. L. 100-147, title II, §209, Oct. 30, 1987, 101 Stat. 874.

§ 40308. Space grant review panel

(a) **ESTABLISHMENT.**—The Administrator shall establish an independent committee known as the space grant review panel, which shall not be subject to the provisions of chapter 10 of title 5.

(b) **DUTIES.**—The panel shall take such steps as may be necessary to review, and shall advise the Administrator with respect to—

(1) applications or proposals for, and performance under, grants and contracts awarded pursuant to sections 40304 and 40305 of this title;

(2) the space grant fellowship program;

(3) the designation and operation of space grant colleges and space grant regional consortia, and the operation of space grant and fellowship programs;

(4) the formulation and application of the planning guidelines and priorities pursuant to subsections (a) and (b)(1) of section 40303 of this title; and

(5) such other matters as the Administrator refers to the panel for review and advice.

(c) **PERSONNEL AND ADMINISTRATIVE SERVICES.**—The Administrator shall make available to the panel any information, personnel, and administrative services and assistance which is reasonable to carry out the duties of the panel.

(d) **MEMBERS.**—

(1) **APPOINTMENT.**—The Administrator shall appoint the voting members of the panel. A majority of the voting members shall be individuals who, by reason of knowledge, experience, or training, are especially qualified in one or more of the disciplines and fields related to space. The other voting members

shall be individuals who, by reason of knowledge, experience, or training, are especially qualified in, or representative of, education, extension services, State government, industry, economics, planning, or any other activity related to efforts to enhance the understanding, assessment, development, or utilization of space resources. The Administrator shall consider the potential conflict of interest of any individual in making appointments to the panel.

(2) **CHAIRMAN AND VICE CHAIRMAN.**—The Administrator shall select one voting member to serve as the Chairman and another voting member to serve as the Vice Chairman. The Vice Chairman shall act as Chairman in the absence or incapacity of the Chairman.

(3) **REIMBURSEMENT FOR EXPENSES.**—Voting members of the panel who are not Federal employees shall be reimbursed for actual and reasonable expenses incurred in the performance of such duties.

(4) **MEETINGS.**—The panel shall meet on a biannual basis and, at any other time, at the call of the Chairman or upon the request of a majority of the voting members or of the Administrator.

(5) **POWERS.**—The panel may exercise such powers as are reasonably necessary in order to carry out the duties enumerated in subsection (b).

(Pub. L. 111-314, §3, Dec. 18, 2010, 124 Stat. 3387; Pub. L. 117-286, §4(a)(325), Dec. 27, 2022, 136 Stat. 4341.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40308	42 U.S.C. 2486h.	Pub. L. 100-147, title II, §210, Oct. 30, 1987, 101 Stat. 874.

In subsection (a), the word “provisions” is substituted for “provisons” to correct an error in the law.

Editorial Notes

AMENDMENTS

2022—Subsec. (a). Pub. L. 117-286 substituted “chapter 10 of title 5.” for “the Federal Advisory Committee Act (5 App. U.S.C.).”

§ 40309. Availability of other Federal personnel and data

Each department, agency, or other instrumentality of the Federal Government that is engaged in or concerned with, or that has authority over, matters relating to space—

(1) may, upon a written request from the Administrator, make available, on a reimbursable basis or otherwise, any personnel (with their consent and without prejudice to their position and rating), service, or facility which the Administrator considers necessary to carry out any provision of this chapter;

(2) may, upon a written request from the Administrator, furnish any available data or other information which the Administrator considers necessary to carry out any provision of this chapter; and

(3) may cooperate with the Administration.

(Pub. L. 111-314, §3, Dec. 18, 2010, 124 Stat. 3388.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40309	42 U.S.C. 2486i.	Pub. L. 100-147, title II, § 211, Oct. 30, 1987, 101 Stat. 875.

§ 40310. Designation or award to be on competitive basis

The Administrator shall not under this chapter designate any space grant college or space grant regional consortium or award any fellowship, grant, or contract unless such designation or award is made in accordance with the competitive, merit-based review process employed by the Administration on October 30, 1987.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3388.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40310	42 U.S.C. 2486k.	Pub. L. 100-147, title II, § 213, Oct. 30, 1987, 101 Stat. 875.

The date “October 30, 1987” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Space Grant College and Fellowship Act, which is title II of the National Aeronautics and Space Administration Authorization Act of 1988 (Public Law 100-147, 101 Stat. 860).

§ 40311. Continuing emphasis

The Administration shall continue its emphasis on the importance of education to expand opportunities for Americans to understand and participate in the Administration’s aeronautics and space projects by supporting and enhancing science and engineering education, research, and public outreach efforts.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3388.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40311	42 U.S.C. 17781(c).	Pub. L. 110-422, title VII, § 704(c), Oct. 15, 2008, 122 Stat. 4803.

CHAPTER 405—BIOMEDICAL RESEARCH IN SPACE

Sec.	
40501.	Biomedical research joint working group.
40502.	Biomedical research grants.
40503.	Biomedical research fellowships.
40504.	Establishment of electronic data archive.
40505.	Establishment of emergency medical service telemedicine capability.

§ 40501. Biomedical research joint working group

(a) ESTABLISHMENT.—The Administrator and the Director of the National Institutes of Health shall jointly establish a working group to coordinate biomedical research activities in areas where a microgravity environment may contribute to significant progress in the understanding and treatment of diseases and other medical conditions. The joint working group shall formulate joint and complementary programs in such areas of research.

(b) MEMBERSHIP.—The joint working group shall include equal representation from the Ad-

ministration and the National Institutes of Health, and shall include representation from National Institutes of Health councils, as selected by the Director of the National Institutes of Health, and from the National Aeronautics and Space Administration Advisory Council.

(c) ANNUAL BIOMEDICAL RESEARCH SYMPOSIA.—The joint working group shall organize annual symposia on biomedical research described in subsection (a) under the joint sponsorship of the Administration and the National Institutes of Health.

(d) ANNUAL REPORTING REQUIREMENT.—The joint working group shall report annually to Congress on its progress in carrying out this section.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3389.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40501	42 U.S.C. 2487a.	Pub. L. 102-588, title VI, § 602, Nov. 4, 1992, 106 Stat. 5130.

Statutory Notes and Related Subsidiaries

FINDINGS

Pub. L. 102-588, title VI, § 601, Nov. 4, 1992, 106 Stat. 5130, provided that: “The Congress finds that—

“(1) the space program can make significant contributions to selected areas of health-related research and should be an integral part of the Nation’s health research and development program;

“(2) the continuing development of trained scientists and engineers is essential to carrying out an effective and sustained program of biomedical research in space and on the ground;

“(3) the establishment and maintenance of an electronically accessible archive of data on space-related biomedical research is essential to advancement of the field;

“(4) cooperation with the republics of the former Soviet Union, including use of former Soviet orbital facilities, offers the potential for greatly enhanced biomedical research activities and progress; and

“(5) the establishment and maintenance of an international telemedicine consultation satellite capability to support emergency medical service provision can provide an important aid to disaster relief efforts.”

§ 40502. Biomedical research grants

(a) ESTABLISHMENT OF PROGRAM.—The Administrator and the Director of the National Institutes of Health shall establish a joint program of biomedical research grants in areas described in section 40501(a) of this title, where such research requires access to a microgravity environment. Such program shall be consistent with actions taken by the joint working group under section 40501 of this title.

(b) RESEARCH OPPORTUNITY ANNOUNCEMENTS.—The grants program established under subsection (a) shall annually issue joint research opportunity announcements under the sponsorship of the National Institutes of Health and the Administration. Responses to the announcements shall be evaluated by a peer review committee whose members shall be selected by the Director of the National Institutes of Health and the Administrator, and shall include individuals not employed by the Administration or the National Institutes of Health.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3389.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40502	42 U.S.C. 2487b.	Pub. L. 102–588, title VI, § 603, Nov. 4, 1992, 106 Stat. 5130.

§ 40503. Biomedical research fellowships

The Administrator and the Director of the National Institutes of Health shall create a joint program of graduate research fellowships in biomedical research described in section 40501(a) of this title. Fellowships under such program may provide for participation in approved research conferences and symposia.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3389.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40503	42 U.S.C. 2487c.	Pub. L. 102–588, title VI, § 604, Nov. 4, 1992, 106 Stat. 5131.

§ 40504. Establishment of electronic data archive

The Administrator shall create and maintain a national electronic data archive for biomedical research data obtained from space-based experiments.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3389.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40504	42 U.S.C. 2487e.	Pub. L. 102–588, title VI, § 606, Nov. 4, 1992, 106 Stat. 5131.

§ 40505. Establishment of emergency medical service telemedicine capability

The Administrator, the Administrator of the Federal Emergency Management Agency, the Director of the Office of Foreign Disaster Assistance, and the Surgeon General of the United States shall jointly create and maintain an international telemedicine satellite consultation capability to support emergency medical services in disaster-stricken areas.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3389.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40505	42 U.S.C. 2487f.	Pub. L. 102–588, title VI, § 607, Nov. 4, 1992, 106 Stat. 5131; Pub. L. 109–295, title VI, § 612(c), Oct. 4, 2006, 120 Stat. 1410.

The words “Office of Foreign Disaster Assistance” are substituted for “Office of Foreign Disaster” to correct an error in the law.

CHAPTER 407—ENVIRONMENTALLY FRIENDLY AIRCRAFT

Sec.

40701. Research and development initiative.
40702. Additional research and development initiative.

Sec.

40703. Research alignment.

40704. Research program on perceived impact of sonic booms.

§ 40701. Research and development initiative

The Administrator may establish an initiative with the objective of developing, and demonstrating in a relevant environment, technologies to enable the following commercial aircraft performance characteristics:

(1) NOISE LEVELS.—Noise levels on takeoff and on airport approach and landing that do not exceed ambient noise levels in the absence of flight operations in the vicinity of airports from which such commercial aircraft would normally operate.

(2) ENERGY CONSUMPTION.—Twenty-five percent reduction in the energy required for medium- to long-range flights, compared to aircraft in commercial service as of December 30, 2005.

(3) EMISSIONS.—Nitrogen oxides on take-off and landing that are significantly reduced, without adversely affecting hydrocarbons and smoke, relative to aircraft in commercial service as of December 30, 2005.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3390.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40701	42 U.S.C. 16722(a).	Pub. L. 109–155, title IV, § 422(a), Dec. 30, 2005, 119 Stat. 2924.

In paragraphs (2) and (3), the date “December 30, 2005” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2895).

§ 40702. Additional research and development initiative

The Administrator shall establish an initiative involving the Administration, universities, industry, and other research organizations as appropriate, of research, development, and demonstration, in a relevant environment, of technologies to enable the following commercial aircraft performance characteristics:

(1) NOISE LEVELS.—Noise levels on takeoff and on airport approach and landing that do not exceed ambient noise levels in the absence of flight operations in the vicinity of airports from which such commercial aircraft would normally operate, without increasing energy consumption or nitrogen oxide emissions compared to aircraft in commercial service as of October 15, 2008.

(2) GREENHOUSE GAS EMISSIONS.—Significant reductions in greenhouse gas emissions compared to aircraft in commercial services as of October 15, 2008.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3390.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40702	42 U.S.C. 17721.	Pub. L. 110–422, title III, § 302, Oct. 15, 2008, 122 Stat. 4786.

In paragraphs (1) and (2), the date “October 15, 2008” is substituted for “the date of enactment of this Act” to reflect the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2008 (Public Law 110–422, 122 Stat. 4779).

§ 40703. Research alignment

In addition to pursuing the research and development initiative described in section 40702 of this title, the Administrator shall, to the maximum extent practicable within available funding, align the fundamental aeronautics research program to address high priority technology challenges of the National Academies’ Decadal Survey of Civil Aeronautics, and shall work to increase the degree of involvement of external organizations, and especially of universities, in the fundamental aeronautics research program.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3390.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40703	42 U.S.C. 17722.	Pub. L. 110–422, title III, § 303, Oct. 15, 2008, 122 Stat. 4787.

§ 40704. Research program on perceived impact of sonic booms

(a) ESTABLISHMENT.—The Administrator shall establish a cooperative research program with industry, including the conduct of flight demonstrations in a relevant environment, to collect data on the perceived impact of sonic booms. The data could enable the promulgation of appropriate standards for overland commercial supersonic flight operations.

(b) COORDINATION.—The Administrator shall ensure that sonic boom research is coordinated as appropriate with the Administrator of the Federal Aviation Administration, and as appropriate make use of the expertise of the Partnership for Air Transportation Noise and Emissions Reduction Center of Excellence sponsored by the Administration and the Federal Aviation Administration.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3391.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40704(a)	42 U.S.C. 17723(b).	Pub. L. 110–422, title III, § 304(b), (c), Oct. 15, 2008, 122 Stat. 4787.
40704(b)	42 U.S.C. 17723(c).	

Statutory Notes and Related Subsidiaries

Purpose

Pub. L. 110–422, title III, § 304(a), Oct. 15, 2008, 122 Stat. 4787, provided that: “The ability to fly commercial aircraft over land at supersonic speeds without adverse impacts on the environment or on local communities would open new markets and enable new transportation capabilities. In order to have the basis for establishing appropriate sonic boom standards for such flight operations, a research program is needed to assess the impact in a relevant environment of commercial supersonic flight operations.”

CHAPTER 409—MISCELLANEOUS

Sec.	40901.
	40901.
	40902.
	40903.
40904.	Microgravity research.
40905.	Program to expand distance learning in rural underserved areas.
40906.	Equal access to the Administration’s education programs.
40907.	Museums.
40908.	Continuation of certain education programs.
40909.	Compliance with title IX of Education Amendments of 1972.

Statutory Notes and Related Subsidiaries

CYBERSECURITY IN STEM PROGRAMS OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Pub. L. 116–283, div. H, title XCIV, § 9406, Jan. 1, 2021, 134 Stat. 4812, provided that: “In carrying out any STEM education program of the National Aeronautics and Space Administration (referred to in this section as ‘NASA’), including a program of the Office of STEM Engagement, the Administrator of NASA shall, to the maximum extent practicable, encourage the inclusion of cybersecurity education opportunities in such program.”

NASA INTERNSHIP AND FELLOWSHIP OPPORTUNITIES

Pub. L. 115–303, § 3, Dec. 11, 2018, 132 Stat. 4399, provided that: “Not later than October 1, 2018, the Administrator of the National Aeronautics and Space Administration (in this section referred to as ‘NASA’) shall institute a process to encourage the recruitment of qualified candidates who are women or individuals who are underrepresented in the fields of science, technology, engineering, and mathematics (STEM) and computer science for internships and fellowships at NASA with relevance to the aerospace sector and related fields.”

EDUCATION AND OUTREACH

Pub. L. 115–10, title VIII, § 824, Mar. 21, 2017, 131 Stat. 64, provided that:

“(a) SENSE OF CONGRESS.—It is the sense of Congress that—

“(1) United States competitiveness in the 21st century requires engaging the science, technology, engineering, and mathematics (referred to in this section as ‘STEM’) talent in all States;

“(2) the [National Aeronautics and Space] Administration is uniquely positioned to educate and inspire students and the broader public on STEM subjects and careers;

“(3) the Administration’s Education and Communication Offices, Mission Directorates, and Centers have been effective in delivering educational content because of the strong engagement of Administration scientists and engineers in the Administration’s education and outreach activities;

“(4) the Administration’s education and outreach programs, including the Experimental Program to Stimulate Competitive Research (EPSCoR) and the Space Grant College and Fellowship Program, reflect the Administration’s successful commitment to growing and diversifying the national science and engineering workforce; and

“(5) in order to grow and diversify the Nation’s engineering workforce, it is vital for the Administra-

¹ Section catchline amended by Pub. L. 117–167 without corresponding amendment of chapter analysis.

tion to bolster programs, such as High Schools United with NASA to Create Hardware (HUNCH) program, that conduct outreach activities to underserved rural communities, vocational schools, and tribal colleges and universities and encourage new participation in the STEM workforce.

“(b) CONTINUATION OF EDUCATION AND OUTREACH ACTIVITIES AND PROGRAMS.—

“(1) IN GENERAL.—The Administrator [of the National Aeronautics and Space Administration] shall continue engagement with the public and education opportunities for students via all the Administration’s mission directorates to the maximum extent practicable.

“(2) REPORT.—Not later than 60 days after the date of enactment of this Act [Mar. 21, 2017], the Administrator shall submit to the appropriate committees of Congress [Committee on Commerce, Science, and Transportation of the Senate and Committee on Science, Space, and Technology of the House of Representatives] a report on the Administration’s near-term outreach plans for advancing space law education.”

INSPIRING THE NEXT SPACE PIONEERS, INNOVATORS, RESEARCHERS, AND EXPLORERS (INSPIRE) WOMEN

Pub. L. 115–7, Feb. 28, 2017, 131 Stat. 13, provided that:

“SECTION 1. SHORT TITLE.

“This Act may be cited as the ‘Inspiring the Next Space Pioneers, Innovators, Researchers, and Explorers (INSPIRE) Women Act’.

“SEC. 2. FINDINGS.

“The Congress finds that—

“(1) NASA GIRLS and NASA BOYS are virtual mentoring programs using commercially available video chat programs to pair National Aeronautics and Space Administration mentors with young students anywhere in the country. NASA GIRLS and NASA BOYS give young students the opportunity to interact and learn from real engineers, scientists, and technologists.

“(2) The Aspire to Inspire (A2I) program engages young girls to present science, technology, engineering, and mathematics (STEM) career opportunities through the real lives and jobs of early career women at NASA.

“(3) The Summer Institute in Science, Technology, Engineering, and Research (SISTER) program at the Goddard Space Flight Center is designed to increase awareness of, and provide an opportunity for, female middle school students to be exposed to and explore nontraditional career fields with Goddard Space Flight Center women engineers, mathematicians, scientists, technicians, and researchers.

“SEC. 3. SUPPORTING WOMEN’S INVOLVEMENT IN THE FIELDS OF AEROSPACE AND SPACE EXPLORATION.

“The Administrator of the National Aeronautics and Space Administration shall encourage women and girls to study science, technology, engineering, and mathematics, pursue careers in aerospace, and further advance the Nation’s space science and exploration efforts through support of the following initiatives:

“(1) NASA GIRLS and NASA BOYS.

“(2) Aspire to Inspire.

“(3) Summer Institute in Science, Technology, Engineering, and Research.

“SEC. 4. PLAN.

“Not later than 90 days after the date of enactment of this Act [Feb. 28, 2017], the Administrator shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a plan for how NASA can best facilitate and support both current and retired astronauts, scientists, engineers, and innovators, including early career female astronauts, scientists, engineers, and innovators,

to engage with K–12 female STEM students and inspire the next generation of women to consider participating in the fields of science, technology, engineering, and mathematics and to pursue careers in aerospace. This plan shall—

“(1) report on existing activities with current and retired NASA astronauts, scientists, engineers, and innovators;

“(2) identify how NASA could best leverage existing authorities to facilitate and support current and retired astronaut, scientist, engineer, and innovator participation in NASA outreach efforts;

“(3) propose and describe a program specific to retired astronauts, scientists, engineers, and innovators; and

“(4) identify any additional authorities necessary to institute such a program.”

NASA’S CONTRIBUTION TO EDUCATION

Pub. L. 111–358, title II, §202, Jan. 4, 2011, 124 Stat. 3993, provided that:

“(a) SENSE OF CONGRESS.—It is the sense of Congress that NASA [National Aeronautics and Space Administration] is uniquely positioned to interest students in science, technology, engineering, and mathematics, not only by the example it sets, but through its education programs.

“(b) EDUCATIONAL PROGRAM GOALS.—NASA shall develop and maintain educational programs—

“(1) to carry out and support research based programs and activities designed to increase student interest and participation in STEM, including students from minority and underrepresented groups;

“(2) to improve public literacy in STEM;

“(3) that employ proven strategies and methods for improving student learning and teaching in STEM;

“(4) to provide curriculum support materials and other resources that—

“(A) are designed to be integrated with comprehensive STEM education;

“(B) are aligned with national science education standards;

“(C) promote the adoption and implementation of high-quality education practices that build toward college and career-readiness; and

“(5) to create and support opportunities for enhanced and ongoing professional development for teachers using best practices that improve the STEM content and knowledge of the teachers, including through programs linking STEM teachers with STEM educators at the higher education level.”

[For definition of “STEM” as used in section 202 of Pub. L. 111–358, set out above, see section 2 of Pub. L. 111–358, set out as a note under section 6621 of Title 42, The Public Health and Welfare.]

REPORTS

Pub. L. 109–155, title I, §102, Dec. 30, 2005, 119 Stat. 2905, provided that:

“(a) NATIONAL AWARENESS CAMPAIGN.—

“(1) IN GENERAL.—The Administrator [of the National Aeronautics and Space Administration] shall implement, beginning not later than May 1, 2006, a national awareness campaign through various media, including print, radio, television, and the Internet, to articulate missions, publicize recent accomplishments, and facilitate efforts to encourage young Americans to enter the fields of science, mathematics, and engineering to help maintain United States leadership in those fields.

“(2) REPORTS.—(A) Not later than April 1, 2006, the Administrator shall transmit a plan to the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate describing the activities that will be undertaken as part of the national awareness campaign required by paragraph (1) and the expected cost of those activities. NASA [National

Aeronautics and Space Administration] may undertake activities as part of the national awareness campaign prior to the transmittal of the plan required by this subparagraph, but the plan shall include a description of any activities undertaken prior to the transmittal and the estimated cost of those activities.

“(B) Not later than three years after the date of enactment of this Act [Dec. 30, 2005], the Administrator shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate an assessment of the impact of the national awareness campaign.

“(b) BUDGET INFORMATION.—Not later than April 30, 2006, the Administrator shall transmit to the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report describing—

“(1) the expected cost of the Crew Exploration Vehicle through fiscal year 2020, based on the public specifications for that development contract; and

“(2) the expected budgets for each fiscal year through 2020 for human spaceflight, aeronautics, space science, and earth science—

“(A) first assuming inflationary growth for the budget of NASA as a whole and including costs for the Crew Exploration Vehicle as projected under paragraph (1); and

“(B) then assuming inflationary growth for the budget of NASA as a whole and including at least two cost estimates for the Crew Exploration Vehicle that are higher than those projected under paragraph (1), based on NASA’s past experience with cost increases for similar programs, along with a description of the reasons for selecting the cost estimates used for the calculations under this subparagraph and the confidence level for each of the cost estimates used in this section.

“(c) SPACE COMMUNICATIONS PLAN.—

“(1) PLAN.—The Administrator shall develop a plan, in consultation with relevant Federal agencies, for updating NASA’s space communications architecture for both low-Earth orbital operations and deep space exploration so that it is capable of meeting NASA’s needs over the next 20 years. The plan shall include life-cycle cost estimates, milestones, estimated performance capabilities, and 5-year funding profiles. The plan shall also include an estimate of the amounts of any reimbursements NASA is likely to receive from other Federal agencies during the expected life of the upgrades described in the plan. At a minimum, the plan shall include a description of the following:

“(A) Projected Deep Space Network requirements for the next 20 years, including those in support of human space exploration missions.

“(B) Upgrades needed to support Deep Space Network requirements.

“(C) Cost estimates for the maintenance of existing Deep Space Network capabilities.

“(D) Cost estimates and schedules for the upgrades described in subparagraph (B).

“(E) Projected Tracking and Data Relay Satellite System requirements for the next 20 years, including those in support of other relevant Federal agencies.

“(F) Cost and schedule estimates to maintain and upgrade the Tracking and Data Relay Satellite System to meet projected requirements.

“(2) CONSULTATIONS.—The Administrator shall consult with other relevant Federal agencies in developing the plan under this subsection.

“(3) SCHEDULE.—The Administrator shall transmit the plan under this subsection to the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than February 17, 2007.

“(d) JOINT DARK ENERGY MISSION.—The Administrator and the Director of the Department of Energy Office of Science shall jointly transmit to the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, not later than July 15, 2006, a report on plans for a Joint Dark Energy Mission. The report shall include the amount of funds each agency intends to expend on the Joint Dark Energy Mission for each of the fiscal years 2007 through 2011, and any specific milestones for the development and launch of the Mission.

“(e) OFFICE OF SCIENCE AND TECHNOLOGY POLICY.—

“(1) STUDY.—As part of ongoing efforts to coordinate research and development across the Federal agencies, the Director of the Office of Science and Technology Policy shall conduct a study to determine—

“(A) if any research and development programs of NASA are unnecessarily duplicating aspects of programs of other Federal agencies; and

“(B) if any research and development programs of NASA are neglecting any topics of national interest that are related to the mission of NASA.

“(2) REPORT.—Not later than one year after the date of enactment of this Act [Dec. 30, 2005], the Director of the Office of Science and Technology Policy shall transmit to the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report that—

“(A) describes the results of the study under paragraph (1);

“(B) lists the research and development programs of Federal agencies other than NASA that were reviewed as part of the study, which shall include any program supporting research and development in an area related to the programs of NASA, and the most recent budget figures for those programs of other agencies;

“(C) recommends any changes to the research and development programs of NASA that should be made in response to the findings of the study required by paragraph (1); and

“(D) describes mechanisms the Office of Science and Technology Policy will use to ensure adequate coordination between NASA and Federal agencies that operate related programs.

“(3) CONTRACT.—The Director of the Office of Science and Technology Policy may contract with a nongovernmental entity to conduct the study required by paragraph (1).”

REVIEW OF MUST PROGRAM

Pub. L. 109–155, title VI, §617, Dec. 30, 2005, 119 Stat. 2934, directed the Administrator of the National Aeronautics and Space Administration to transmit a report to Congress on the legal status of the Motivating Undergraduates in Science and Technology program not later than 60 days after Dec. 30, 2005, and, if in compliance with law, implement the program as planned in the July 5, 2005, NASA Research Announcement.

DENIAL OF FINANCIAL ASSISTANCE TO CAMPUS DISRUPTERS

Pub. L. 92–304, §6, May 19, 1972, 86 Stat. 161, provided generally that any institution of higher education deny for a two-year period payment under programs authorized by the National Aeronautics and Space Act of 1958 (see 51 U.S.C. 20101 et seq.) to any individual attending or employed by such institution who has been convicted of any crime committed after May 19, 1972, which involved the use of force, disruption or seizure of property to prevent officers or students from engaging in their duties or pursuing their studies. Similar provisions were contained in the following prior appropriation acts:

Pub. L. 92-68, § 6, Aug. 6, 1971, 85 Stat. 177.
 Pub. L. 91-303, § 6, July 2, 1970, 84 Stat. 372.
 Pub. L. 91-119, § 7, Nov. 18, 1969, 83 Stat. 201.

§ 40901. Science, Space, and Technology Education Trust Fund

There is appropriated, by transfer from funds appropriated in the Department of Housing and Urban Development—Independent Agencies Appropriations Act, 1989 (Public Law 100-404, 102 Stat. 1014), for “Construction of facilities”, the sum of \$15,000,000 to the “Science, Space, and Technology Education Trust Fund”, which is hereby established in the Treasury of the United States. The Secretary of the Treasury shall invest these funds in the United States Treasury special issue securities, and interest shall be credited to the Trust Fund on a quarterly basis. Such interest shall be available for the purpose of making grants for programs directed at improving science, space, and technology education in the United States. The Administrator, after consultation with the Director of the National Science Foundation, shall review applications made for such grants and determine the distribution of available funds on a competitive basis. Grants shall be made available to any awardee only to the extent that the awardee provides matching funds from non-Federal sources to carry out the program for which grants from this Trust Fund are made. Of the funds made available by this Trust Fund, \$250,000 shall be disbursed each calendar quarter to the Challenger Center for Space Science Education. The Administrator shall submit to Congress an annual report on the grants made pursuant to this section.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3391.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40901	42 U.S.C. 2467.	Pub. L. 100-404, title II, (par. under heading “Science, Space, and Technology Education Trust Fund”, at 102 Stat. 1028), Aug. 19, 1988, 102 Stat. 1028; Pub. L. 103-327, title III, Sept. 28, 1994, 108 Stat. 2328.

In the first sentence, the words “the Department of Housing and Urban Development—Independent Agencies Appropriations Act, 1989 (Public Law 100-404, 102 Stat. 1014)” are substituted for “this Act” to clarify the reference.

In the second sentence, the words “of the Treasury” are inserted after “the Secretary” for clarity.

In the sixth sentence, the word “hereafter”, which appeared after “each calendar quarter”, is omitted as unnecessary.

§ 40902. National Aeronautics and Space Administration Endeavor Teacher Fellowship Trust Fund

(a) ESTABLISHMENT.—There is established in the Treasury of the United States, in tribute to the dedicated crew of the Space Shuttle Challenger, a trust fund to be known as the National Aeronautics and Space Administration Endeavor Teacher Fellowship Trust Fund (hereafter in this section referred to as the “Trust Fund”). The Trust Fund shall consist of amounts which may from time to time, at the discretion of the

Administrator, be transferred from the National Aeronautics and Space Administration Gifts and Donations Trust Fund.

(b) INVESTMENT OF TRUST FUND.—The Administrator shall direct the Secretary of the Treasury to invest and reinvest funds in the Trust Fund in public debt securities with maturities suitable for the needs of the Trust Fund, and bearing interest at rates determined by the Secretary of the Treasury, taking into consideration the current average market yield on outstanding marketable obligations of the United States of comparable maturities. Interest earned shall be credited to the Trust Fund.

(c) PURPOSE.—Income accruing from the Trust Fund principal shall be used to create the National Aeronautics and Space Administration Endeavor Teacher Fellowship Program, to the extent provided in advance in appropriation Acts. The Administrator is authorized to use such funds to award fellowships to selected United States nationals who are undergraduate students pursuing a course of study leading to certified teaching degrees in elementary education or in secondary education in mathematics, science, or technology disciplines. Awards shall be made pursuant to standards established for the fellowship program by the Administrator.

(d) AVAILABILITY OF FUNDS.—The interest accruing from the National Aeronautics and Space Administration Endeavor Teacher Fellowship Trust Fund principal shall be available in fiscal year 2012 for the purpose of the Endeavor Science Teacher Certificate Program.

(Pub. L. 111-314, § 3, Dec. 18, 2010, 124 Stat. 3391; Pub. L. 112-55, div. B, title III, Nov. 18, 2011, 125 Stat. 626.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40902	42 U.S.C. 2467a.	Pub. L. 102-195, § 20, Dec. 9, 1991, 105 Stat. 1615.

In subsection (a), the words “The Trust Fund shall consist of amounts” are substituted for “The Trust Fund shall consist of gifts and donations accepted by the National Aeronautics and Space Administration pursuant to section 208 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2476b), as well as other amounts” because the Administration’s authority to accept gifts or donations under section 208 of the National Aeronautics and Space Act of 1958 terminated 5 years after October 30, 1987.

Editorial Notes

AMENDMENTS

2011—Subsec. (d). Pub. L. 112-55 added subsec. (d).

§ 40903. Established Program to Stimulate Competitive Research—merit grant competition requirements

(a) DEFINITION OF ELIGIBLE STATE.—In this section, the term “eligible State” means a State designated by the Administrator as eligible to compete in the National Science Foundation’s Established Program to Stimulate Competitive Research.

(b) COMPETITION.—Making use of the existing infrastructure established in eligible States by

the National Science Foundation, the Administrator shall conduct a merit grant competition among the eligible States in areas of research important to the mission of the Administration. With respect to a grant application by an eligible State, the Administrator shall consider—

- (1) the application's merit and relevance to the mission of the Administration;
- (2) the potential for the grant to serve as a catalyst to enhance the ability of researchers in the State to become more competitive for regular Administration funding;
- (3) the potential for the grant to improve the environment for science, mathematics, and engineering education in the State; and
- (4) the need to ensure the maximum distribution of grants among eligible States, consistent with merit.

(c) **SUPPLEMENTAL GRANTS.**—The Administrator shall endeavor, where appropriate, to supplement grants made under subsection (b) with such grants for fellowships, traineeships, equipment, or instrumentation as are available.

(d) **INFORMATION IN ANNUAL BUDGET SUBMISSION.**—In order to ensure that research expertise and talent throughout the Nation is developed and engaged in Administration research and education activities, the Administration shall, as part of its annual budget submission, detail additional steps that can be taken to further integrate the participating eligible States in both existing and new or emerging Administration research programs and center activities.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3392; Pub. L. 117–167, div. B, title VII, § 10851(e), Aug. 9, 2022, 136 Stat. 1754.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40903(a)	42 U.S.C. 2467b(c).	Pub. L. 102–588, title III, § 304, Nov. 4, 1992, 106 Stat. 5120.
40903(b)	42 U.S.C. 2467b(a).	
40903(c)	42 U.S.C. 2467b(b).	
40903(d)	42 U.S.C. 17781(b).	Pub. L. 110–422, title VII, § 704(b), Oct. 15, 2008, 122 Stat. 4802.

In subsection (d) the words “eligible States” are substituted for “EPSCoR States” for clarity and consistency in the section.

Editorial Notes

AMENDMENTS

2022—Pub. L. 117–167, § 10851(e)(1), substituted “Established” for “Experimental” in section catchline.

Subsec. (a). Pub. L. 117–167, § 10851(e)(2), substituted “Established” for “Experimental”.

Statutory Notes and Related Subsidiaries

CONGRESSIONAL FINDINGS AND POLICY

Pub. L. 102–588, title III, §§ 301–303, Nov. 4, 1992, 106 Stat. 5119, provided that:

“SEC. 301. SHORT TITLE.

“This title [see Tables for classification] may be cited as the ‘Experimental Program to Stimulate Competitive Research on Space and Aeronautics Act’.

“SEC. 302. FINDINGS.

“Congress finds that—

“(1) the report of the Advisory Committee on the Future of the United States Space Program has pro-

vided a framework within which a consensus on the goals of the space program can be developed;

“(2) the National Aeronautics and Space Administration’s space science and applications, aeronautical research and technology, and space research and technology programs will serve as the fulcrum for future initiatives by the United States in civil space and aviation;

“(3) colleges and universities in many States are currently not able to compete successfully for research grants awarded by the National Aeronautics and Space Administration through its space science and applications, aeronautical research and technology, and space research and technology programs;

“(4) balanced programs of space science and applications, aeronautical research and technology, and space research and technology should include initiatives designed to foster competitive research capacity in all geographic areas of the Nation; and

“(5) by strengthening the competitive research capacity in those geographic areas of the Nation which are not currently fully competitive, the education and training of scientists and engineers important to the future of the United States civil space and aviation programs will be fostered.

“SEC. 303. POLICY.

“It is the policy of the United States that—

“(1) the Administrator [of the National Aeronautics and Space Administration], in planning for national programs in space science and applications, aeronautical research, space flight, and exploration, should ensure the resilience of the space and aeronautics research infrastructure;

“(2) a stable and balanced program of space science and applications, aeronautical research and technology, and space research and technology should include programs to assure that geographic areas of the United States that currently do not successfully participate in competitive space and aeronautical research activities are enabled to become more competitive; and

“(3) programs to improve competitive capabilities should be a part of the research and the educational activities of the National Aeronautics and Space Administration.”

§ 40904. Microgravity research

The Administrator shall—

(1) ensure the capacity to support ground-based research leading to space-based basic and applied scientific research in a variety of disciplines with potential direct national benefits and applications that can be advanced significantly from the uniqueness of microgravity and the space environment; and

(2) carry out, to the maximum extent practicable, basic, applied, and commercial International Space Station research in fields such as molecular crystal growth, animal research, basic fluid physics, combustion research, cellular biotechnology, low-temperature physics, and cellular research at a level that will sustain the existing United States scientific expertise and research capability in microgravity research.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3393.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40904(1)	42 U.S.C. 16655(2).	Pub. L. 109–155, title III, § 305(2), (3), Dec. 30, 2005, 119 Stat. 2918.
40904(2)	42 U.S.C. 16655(3).	

§ 40905. Program to expand distance learning in rural underserved areas

(a) IN GENERAL.—The Administrator shall develop or expand programs to extend science and space educational outreach to rural communities and schools through video conferencing, interpretive exhibits, teacher education, classroom presentations, and student field trips.

(b) PRIORITIES.—In carrying out subsection (a), the Administrator shall give priority to existing programs, including Challenger Learning Centers—

- (1) that utilize community-based partnerships in the field;
- (2) that build and maintain video conference and exhibit capacity;
- (3) that travel directly to rural communities and serve low-income populations; and
- (4) with a special emphasis on increasing the number of women and minorities in the science and engineering professions.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3393.)

HISTORICAL AND REVISION NOTES

Revised Section	Source (U.S. Code)	Source (Statutes at Large)
40905	42 U.S.C. 16791.	Pub. L. 109–155, title VI, § 612, Dec. 30, 2005, 119 Stat. 2932.

§ 40906. Equal access to the Administration's education programs

(a) IN GENERAL.—The Administrator shall strive to ensure equal access for minority and economically disadvantaged students to the Administration's education programs.

(b) REPORT.—Every 2 years, the Administrator shall submit a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate describing the efforts by the Administrator to ensure equal access for minority and economically disadvantaged students under this section and the results of such efforts. As part of the report, the Administrator shall provide—

- (1) data on minority participation in the Administration's education programs, at a minimum in the categories of—
 - (A) elementary and secondary education;
 - (B) undergraduate education; and
 - (C) graduate education; and
- (2) the total value of grants the Administration made to Historically Black Colleges and Universities and to Hispanic Serving Institutions through education programs during the period covered by the report.

(c) PROGRAM.—The Administrator shall establish the Dr. Mae C. Jemison Grant Program to work with Minority Serving Institutions to bring more women of color into the field of space and aeronautics.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3393.)

HISTORICAL AND REVISION NOTES

Revised Section	Source (U.S. Code)	Source (Statutes at Large)
40906	42 U.S.C. 16794.	Pub. L. 109–155, title VI, § 615, Dec. 30, 2005, 119 Stat. 2934.

In subsection (b), in the matter before paragraph (1), the words “Every 2 years” are substituted for “Not later than 1 year after the date of enactment of this Act [December 30, 2005], and every 2 years thereafter” to eliminate obsolete language.

In subsection (b), in the matter before paragraph (1), the words “Committee on Science and Technology” are substituted for “Committee on Science” on authority of Rule X(1)(o) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

Statutory Notes and Related Subsidiaries

CHANGE OF NAME

Committee on Science and Technology of House of Representatives changed to Committee on Science, Space, and Technology of House of Representatives by House Resolution No. 5, One Hundred Twelfth Congress, Jan. 5, 2011.

§ 40907. Museums

The Administrator may provide grants to, and enter into cooperative agreements with, museums and planetariums to enable them to enhance programs related to space exploration, aeronautics, space science, Earth science, or microgravity.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3394.)

HISTORICAL AND REVISION NOTES

Revised Section	Source (U.S. Code)	Source (Statutes at Large)
40907	42 U.S.C. 16795.	Pub. L. 109–155, title VI, § 616, Dec. 30, 2005, 119 Stat. 2934.

§ 40908. Continuation of certain education programs

From amounts appropriated to the Administration for education programs, the Administrator shall ensure the continuation of the Space Grant Program, the Experimental Program to Stimulate Competitive Research, and, consistent with the results of the review under section 614 of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155, 119 Stat. 2933), the Administration Explorer School program, to motivate and develop the next generation of explorers.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3394.)

HISTORICAL AND REVISION NOTES

Revised Section	Source (U.S. Code)	Source (Statutes at Large)
40908	42 U.S.C. 16797.	Pub. L. 109–155, title VI, § 618, Dec. 30, 2005, 119 Stat. 2934.

Editorial Notes

REFERENCES IN TEXT

Section 614 of the National Aeronautics and Space Administration Authorization Act of 2005, referred to in text, was classified to former section 16793 of Title 42, The Public Health and Welfare, and was omitted from the Code following the enactment of this title by Pub. L. 111–314.

§ 40909. Compliance with title IX of Education Amendments of 1972

To comply with title IX of the Education Amendments of 1972 (20 U.S.C. 1681 et seq.), the

Administrator shall conduct compliance reviews of at least 2 grantees annually.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3394.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
40909	42 U.S.C. 16798(b).	Pub. L. 109–155, title VI, § 619(b), Dec. 30, 2005, 119 Stat. 2935.

Editorial Notes

REFERENCES IN TEXT

The Education Amendments of 1972, referred to in text, is Pub. L. 92–318, June 23, 1972, 86 Stat. 235. Title IX of the Act, known as the Patsy Takemoto Mink Equal Opportunity in Education Act, is classified principally to chapter 38 (§1681 et seq.) of Title 20, Education. For complete classification of title IX to the Code, see Short Title note set out under section 1681 of Title 20 and Tables.

Subtitle V—Programs Targeting Commercial Opportunities

CHAPTER 501—SPACE COMMERCE

SUBCHAPTER I—GENERAL

Sec.

50101. Definitions.

SUBCHAPTER II—PROMOTION OF COMMERCIAL SPACE OPPORTUNITIES

- 50111. Commercialization of Space Station.
- 50112. Promotion of United States Global Positioning System standards.
- 50113. Acquisition of space science data.
- 50114. Administration of commercial space centers.
- 50115. Sources of Earth science data.
- 50116. Commercial technology transfer program.

SUBCHAPTER III—FEDERAL ACQUISITION OF SPACE TRANSPORTATION SERVICES

- 50131. Requirement to procure commercial space transportation services.
- 50132. Acquisition of commercial space transportation services.
- [50133. Repealed.]
- 50134. Use of excess intercontinental ballistic missiles.

Editorial Notes

AMENDMENTS

2017—Pub. L. 115–10, title IV, § 416(c), Mar. 21, 2017, 131 Stat. 35, struck out item 50133 “Shuttle privatization”.

SUBCHAPTER I—GENERAL

§ 50101. Definitions

In this chapter:

(1) **COMMERCIAL PROVIDER.**—The term “commercial provider” means any person providing space transportation services or other space-related activities, primary control of which is held by persons other than Federal, State, local, and foreign governments.

(2) **PAYLOAD.**—The term “payload” means anything that a person undertakes to transport to, from, or within outer space, or in sub-orbital trajectory, by means of a space transportation vehicle, but does not include the space transportation vehicle itself except for

its components which are specifically designed or adapted for that payload.

(3) **SPACE-RELATED ACTIVITIES.**—The term “space-related activities” includes research and development, manufacturing, processing, service, and other associated and support activities.

(4) **SPACE TRANSPORTATION SERVICES.**—The term “space transportation services” means the preparation of a space transportation vehicle and its payloads for transportation to, from, or within outer space, or in suborbital trajectory, and the conduct of transporting a payload to, from, or within outer space, or in suborbital trajectory.

(5) **SPACE TRANSPORTATION VEHICLE.**—The term “space transportation vehicle” means any vehicle constructed for the purpose of operating in, or transporting a payload to, from, or within, outer space, or in suborbital trajectory, and includes any component of such vehicle not specifically designed or adapted for a payload.

(6) **STATE.**—The term “State” means each of the several States of the Union, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States.

(7) **UNITED STATES COMMERCIAL PROVIDER.**—The term “United States commercial provider” means a commercial provider, organized under the laws of the United States or of a State, that is—

(A) more than 50 percent owned by United States nationals; or

(B) a subsidiary of a foreign company and the Secretary of Transportation finds that—

(i) such subsidiary has in the past evidenced a substantial commitment to the United States market through—

(I) investments in the United States in long-term research, development, and manufacturing (including the manufacture of major components and subassemblies); and

(II) significant contributions to employment in the United States; and

(ii) the country or countries in which such foreign company is incorporated or organized, and, if appropriate, in which it principally conducts its business, affords reciprocal treatment to companies described in subparagraph (A) comparable to that afforded to such foreign company’s subsidiary in the United States, as evidenced by—

(I) providing comparable opportunities for companies described in subparagraph (A) to participate in Government-sponsored research and development similar to that authorized under this chapter;

(II) providing no barriers, to companies described in subparagraph (A) with respect to local investment opportunities, that are not provided to foreign companies in the United States; and

(III) providing adequate and effective protection for the intellectual property rights of companies described in subparagraph (A).