

**§ 2358. Research and development projects**

(a) **AUTHORITY.**—The Secretary of Defense or the Secretary of a military department may engage in basic research, applied research, advanced research, and development projects that—

(1) are necessary to the responsibilities of such Secretary's department in the field of research and development; and

(2) either—

(A) relate to weapon systems and other military needs; or

(B) are of potential interest to the Department of Defense.

(b) **AUTHORIZED MEANS.**—The Secretary of Defense or the Secretary of a military department may perform research and development projects—

(1) by contract, cooperative agreement, or grant, in accordance with chapter 63 of title 31;

(2) through one or more military departments;

(3) by using employees and consultants of the Department of Defense;

(4) by mutual agreement with the head of any other department or agency of the Federal Government;

(5) by transactions (other than contracts, cooperative agreements, and grants) entered into pursuant to section 2371 or 2371b of this title; or

(6) by purchases through procurement for experimental purposes pursuant to section 2373 of this title.

(c) **REQUIREMENT OF POTENTIAL DEPARTMENT OF DEFENSE INTEREST.**—Funds appropriated to the Department of Defense or to a military department may not be used to finance any research project or study unless the project or study is, in the opinion of the Secretary of Defense or the Secretary of that military department, respectively, of potential interest to the Department of Defense or to such military department, respectively.

(d) **ADDITIONAL PROVISIONS APPLICABLE TO COOPERATIVE AGREEMENTS.**—Additional authorities, conditions, and requirements relating to certain cooperative agreements authorized by this section are provided in sections 2371 and 2371a of this title.

(Added Pub. L. 87-651, title II, §208(a), Sept. 7, 1962, 76 Stat. 523; amended Pub. L. 97-86, title IX, §910, Dec. 1, 1981, 95 Stat. 1120; Pub. L. 100-370, §1(g)(3), July 19, 1988, 102 Stat. 846; Pub. L. 103-160, div. A, title VIII, §827(a), Nov. 30, 1993, 107 Stat. 1712; Pub. L. 103-355, title I, §1301(a), Oct. 13, 1994, 108 Stat. 3284; Pub. L. 104-201, div. A, title II, §267(c)(2), Sept. 23, 1996, 110 Stat. 2468; Pub. L. 115-91, div. A, title VIII, §862, Dec. 12, 2017, 131 Stat. 1494.)

**TRANSFER OF SECTION**

*Pub. L. 116-283, div. A, title XVIII, §§1801(d), 1841(b)(1), Jan. 1, 2021, 134 Stat. 4151, 4243, provided that, effective Jan. 1, 2022, with additional provisions for delayed implementation and applicability of existing law, this section is transferred to chapter 301 of this title, as added*

*by section 1841(a) of Pub. L. 116-283, inserted after the table of sections, and redesignated as section 4001 of this title. See Effective Date of 2021 Amendment note below.*

**HISTORICAL AND REVISION NOTES  
1962 ACT**

<i>Revised section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
2358 .....	5:171c(b)(2), (3).	July 26, 1947, ch. 343, §203(b)(2), (3); added Aug. 6, 1958, Pub. L. 85-599, §9(a) (3d and 4th pars.), 72 Stat. 520.

5 U.S.C. 171c(b)(3) is omitted as unnecessary since the authorization for appropriations is implied in 5 U.S.C. 171c(b)(2).

**1988 ACT**

In the existing text of 10 U.S.C. 2358, the bill would in two instances strike the phrase "or his designee" appearing after "Secretary of Defense" (section 1(g)(3)). The change is made for consistency in the Code, and no substantive change is intended. The committee notes that the Secretary of Defense has general authority to delegate functions under 10 U.S.C. 113(d).

Subsection (b) is based on Pub. L. 91-441, title II, §204, Oct. 7, 1970, 84 Stat. 908.

**AMENDMENTS**

2017—Subsec. (b)(5), (6). Pub. L. 115-91 added pars. (5) and (6).

1996—Subsec. (d). Pub. L. 104-201 substituted "sections 2371 and 2371a" for "section 2371".

1994—Pub. L. 103-355 amended section generally, inserting reference to development projects in section catchline, and in text specifying that relevant Secretary may perform research and development projects in accordance with chapter 63 of title 31, and adding subsec. (d) relating to additional provisions applicable to cooperative agreements.

1993—Pub. L. 103-160 amended section generally. Prior to amendment, section read as follows:

"(a) **IN GENERAL.**—Subject to approval by the President, the Secretary of Defense may engage in basic and applied research projects that are necessary to the responsibilities of the Department of Defense in the field of basic and applied research and development and that relate to weapons systems and other military needs. Subject to approval by the President, the Secretary may perform assigned research and development projects—

"(1) by contract with, or by grant to, educational or research institutions, private businesses, or other agencies of the United States;

"(2) through one or more of the military departments; or

"(3) by using employees and consultants of the Department of Defense.

"(b) **REQUIREMENT OF POTENTIAL MILITARY RELATIONSHIP.**—Funds appropriated to the Department of Defense may not be used to finance any research project or study unless the project or study has, in the opinion of the Secretary of Defense, a potential relationship to a military function or operation."

1988—Pub. L. 100-370 designated existing provisions as subsec. (a), inserted heading, struck out "or his designee" after "Secretary of Defense" and "President, the Secretary", and added subsec. (b).

1981—Par. (1). Pub. L. 97-86 substituted "by contract with, or by grant to," for "by contract with".

**EFFECTIVE DATE OF 2021 AMENDMENT**

Amendment by Pub. L. 116-283 effective Jan. 1, 2022, with additional provisions for delayed implementation and applicability of existing law, see section 1801(d) of Pub. L. 116-283, set out as a note preceding section 3001 of this title.

## EFFECTIVE DATE OF 1994 AMENDMENT

For effective date and applicability of amendment by Pub. L. 103-355, see section 10001 of Pub. L. 103-355, set out as a note under section 2302 of this title.

## CHANGE OF NAME

Pub. L. 115-91, div. A, title II, §214(a), Dec. 12, 2017, 131 Stat. 1325, provided that: “The joint technology office on hypersonics in the Office of the Secretary of Defense is redesignated as the ‘Joint Hypersonics Transition Office’. Any reference in a law (other than this section), map, regulation, document, paper, or other record of the United States to the joint technology office on hypersonics shall be deemed to be a reference to the Joint Hypersonics Transition Office.”

## DIRECT AIR CAPTURE AND BLUE CARBON REMOVAL TECHNOLOGY PROGRAM

Pub. L. 116-92, div. A, title II, §223, Dec. 20, 2019, 133 Stat. 1264, provided that:

## “(a) PROGRAM REQUIRED.—

“(1) IN GENERAL.—The Secretary of Defense, in coordination with the Secretary of Homeland Security, the Secretary of Energy, and the heads of such other Federal agencies as the Secretary of Defense considers appropriate, shall carry out a program on research, development, testing, evaluation, study, and demonstration of technologies related to blue carbon capture and direct air capture.

“(2) PROGRAM GOALS.—The goals of the program established under paragraph (1) are as follows:

“(A) To develop technologies that capture carbon dioxide from seawater and the air to turn such carbon dioxide into clean fuels to enhance fuel and energy security.

“(B) To develop and demonstrate technologies that capture carbon dioxide from seawater and the air to reuse such carbon dioxide to create products for military uses.

“(C) To develop direct air capture technologies for use—

“(i) at military installations or facilities of the Department of Defense; or

“(ii) in modes of transportation by the Navy or the Coast Guard.

“(3) PHASES.—The program established under paragraph (1) shall be carried out in two phases as follows:

“(A) The first phase shall consist of research and development and shall be carried out as described in subsection (b).

“(B) The second phase shall consist of testing and evaluation and shall be carried out as described in subsection (c), if the Secretary determines that the results of the research and development phase justify implementing the testing and evaluation phase.

“(4) DESIGNATION.—The program established under paragraph (1) shall be known as the ‘Direct Air Capture and Blue Carbon Removal Technology Program’ (in this section referred to as the ‘Program’).

## “(b) RESEARCH AND DEVELOPMENT PHASE.—

“(1) IN GENERAL.—During the research and development phase of the Program, the Secretary of Defense shall conduct research and development in pursuit of the goals set forth in subsection (a)(2).

“(2) DIRECT AIR CAPTURE.—The research and development phase of the Program may include, with respect to direct air capture, a front end engineering and design study that includes an evaluation of direct air capture designs to produce fuel for use—

“(A) at military installations or facilities of the Department of Defense; or

“(B) in modes of transportation by the Navy or the Coast Guard.

“(3) COMMENCEMENT.—The Secretary shall commence carrying out the research and development phase of the Program not later than 90 days after the date of the enactment of this Act [Dec. 20, 2019].

“(4) GRANTS AUTHORIZED.—The Secretary may carry out the research and development phase of the Pro-

gram through the award of grants to private persons and eligible laboratories.

“(5) REPORT REQUIRED.—Not later than 180 days after the date of the completion of the research and development phase of the Program, the Secretary shall submit to Congress a report on the research and development carried out under the Program.

## “(c) TESTING AND EVALUATION PHASE.—

“(1) IN GENERAL.—During the testing and evaluation phase of the Program, the Secretary shall, in pursuit of the goals set forth in subsection (a)(2), conduct tests and evaluations of the technologies researched and developed during the research and development phase of the Program.

“(2) DIRECT AIR CAPTURE.—The testing and evaluation phase of the Program may include demonstration projects for direct air capture to produce fuels for use—

“(A) at military installations or facilities of the Department of Defense; or

“(B) in modes of transportation by the Navy or the Coast Guard.

“(3) COMMENCEMENT.—Subject to subsection (a)(3)(B), the Secretary shall commence carrying out the testing and evaluation phase of the Program on the date of the completion of the research and development phase described in subsection (b), except that the testing and evaluation phase of the Program with respect to direct air capture may commence at such time after a front end engineering and design study demonstrates to the Secretary that commencement of such phase is appropriate.

“(4) GRANTS AUTHORIZED.—The Secretary may carry out the testing and evaluation phase of the Program through the award of grants to private persons and eligible laboratories.

“(5) LOCATIONS.—The Secretary shall carry out the testing and evaluation phase of the Program at military installations or facilities of the Department of Defense.

“(6) REPORT REQUIRED.—Not later than September 30, 2026, the Secretary shall submit to Congress a report on the findings of the Secretary with respect to the effectiveness of the technologies tested and evaluated under the Program.

## “(d) DEFINITIONS.—In this section:

“(1) The term ‘blue carbon capture’ means the removal of dissolved carbon dioxide from seawater through engineered or inorganic processes, including filters, membranes, or phase change systems.

“(2)(A) The term ‘direct air capture’, with respect to a facility, technology, or system, means that the facility, technology, or system uses carbon capture equipment to capture carbon dioxide directly from the air.

“(B) The term ‘direct air capture’ does not include any facility, technology, or system that captures carbon dioxide—

“(i) that is deliberately released from a naturally occurring subsurface spring; or

“(ii) using natural photosynthesis.

“(3) The term ‘eligible laboratory’ means—

“(A) a National Laboratory (as defined in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801));

“(B) a science and technology reinvention laboratory designated under section 1105 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84; 10 U.S.C. 2358 note);

“(C) the Major Range and Test Facility Base (as defined in section 2358a(f) of title 10, United States Code); or

“(D) any other facility that supports the research, development, test, and evaluation activities of the Department of Defense or the Department of Energy.”

## RESEARCH PROGRAM ON FOREIGN MALIGN INFLUENCE OPERATIONS

Pub. L. 116-92, div. A, title II, §228, Dec. 20, 2019, 133 Stat. 1271, provided that:

“(a) PROGRAM AUTHORIZED.—The Secretary of Defense, acting through the Under Secretary of Defense for Research and Engineering, may carry out a research program on foreign malign influence operations as part of the university research programs of the Department of Defense.

“(b) PROGRAM OBJECTIVES.—The objectives of a research program carried out under subsection (a) should include the following:

“(1) Enhance the understanding of foreign malign influence operations, including activities conducted on social media platforms.

“(2) Facilitate the analysis of publicly available or voluntarily provided indicators of foreign malign influence operations.

“(3) Promote collaborative research and information exchange with relevant entities within the Department of Defense and with other agencies or non-governmental organizations relating to foreign malign influence operations, as appropriate.

“(c) NOTICE TO CONGRESS.—Not later than 30 days before initiating a research program under subsection (a), the Secretary of Defense shall submit to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] notice of the intent of the Secretary to initiate such a program, which shall include—

“(1) a detailed description of the program and any related research activities;

“(2) the estimated cost and duration of the program; and

“(3) any other matters the Secretary determines to be relevant.”

#### DIVERSIFICATION OF THE RESEARCH AND ENGINEERING WORKFORCE OF THE DEPARTMENT OF DEFENSE

Pub. L. 116-92, div. A, title II, §229, Dec. 20, 2019, 133 Stat. 1271, provided that:

“(a) ASSESSMENT REQUIRED.—

“(1) IN GENERAL.—The Secretary of Defense, acting through the Under Secretary of Defense for Research and Engineering and in consultation with the Under Secretary of Defense for Personnel and Readiness, shall conduct an assessment of critical skillsets required across, and the diversity of, the research and engineering workforce of the Department of Defense, including the science and technology reinvention laboratories, to support emerging and future warfighter technologies.

“(2) ELEMENTS.—The assessment required by paragraph (1) shall include analysis of the following:

“(A) The percentage of women and minorities employed in the research and engineering workforce of the Department of Defense as of the date of the assessment.

“(B) Of the individuals hired into the research and engineering workforce of the Department in the five years preceding the date of the assessment, the percentage of such individuals who are women and minorities.

“(C) The effectiveness of existing hiring, recruitment, and retention incentives for women and minorities in the research and engineering workforce of the Department.

“(D) The effectiveness of the Department in recruiting women and minorities into the laboratory workforce after such individuals complete work on Department-funded research, projects, grant projects, fellowships, and STEM programs.

“(E) The geographical diversity of the workforce across various geographic regions.

“(b) PLAN REQUIRED.—

“(1) IN GENERAL.—Based on the results of the assessment conducted under subsection (a), the Secretary of Defense, acting through the Under Secretary of Defense for Research and Engineering and in consultation with the Secretaries of the military departments, shall develop and implement a plan to diversify and strengthen the research and engineering workforce of the Department of Defense.

“(2) ELEMENTS.—The plan required by paragraph (1) shall—

“(A) align with science and technology strategy priorities of the Department of Defense, including the emerging and future warfighter technology requirements identified by the Department;

“(B) except as provided in subsection (c)(2), set forth steps for the implementation of each recommendation included in the 2013 report of the RAND corporation titled ‘First Steps Toward Improving DoD STEM Workforce Diversity’;

“(C) harness the full range of the Department’s STEM programs and other Department sponsored programs to develop and attract top talent;

“(D) use existing authorities to attract and retain students, academics, and other talent;

“(E) establish and use contracts, agreements, or other arrangements with institutions of higher education (as defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001)), including historically black colleges and universities and other minority-serving institutions (as described in section 371(a) of such Act (20 U.S.C. 1067q(a)) to enable easy and efficient access to research and researchers for Government sponsored basic and applied research and studies at each institution, including contracts, agreements, and other authorized arrangements such as those authorized under—

“(i) section 217 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91; 10 U.S.C. 2358 note); and

“(ii) such other authorities as the Secretary determines to be appropriate; and

“(F) include recommendations for changes in authorities, regulations, policies, or any other relevant areas that would support the achievement of the goals set forth in the plan.

“(3) SUBMITTAL TO CONGRESS.—Not later than one year after the date of the enactment of this Act [Dec. 20, 2019], the Secretary of Defense shall submit to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a report that includes—

“(A) the plan developed under paragraph (1); and

“(B) with respect to each recommendation described in paragraph (2)(B) that the Secretary has implemented or expects to implement—

“(i) a summary of actions that have been taken to implement the recommendation; and

“(ii) a schedule, with specific milestones, for completing the implementation of the recommendation.

“(c) DEADLINE FOR IMPLEMENTATION.—

“(1) IN GENERAL.—Except as provided in paragraph (2), not later than 18 months after the date of the enactment of this Act the Secretary of Defense shall carry out activities to implement the plan developed under subsection (b).

“(2) EXCEPTION FOR IMPLEMENTATION OF CERTAIN RECOMMENDATIONS.—

“(A) DELAYED IMPLEMENTATION.—The Secretary of Defense may commence implementation of a recommendation described in subsection (b)(2)(B) after the date specified in paragraph (1) if the Secretary provides the congressional defense committees with a specific justification for the delay in implementation of such recommendation on or before such date.

“(B) NONIMPLEMENTATION.—The Secretary of Defense may opt not to implement a recommendation described in subsection (b)(2)(B) if the Secretary provides to the congressional defense committees, on or before the date specified in paragraph (1)—

“(i) a specific justification for the decision not to implement the recommendation; and

“(ii) a summary of the alternative actions the Secretary plans to take to address the issues underlying the recommendation.

“(d) STEM DEFINED.—In this section, the term ‘STEM’ means science, technology, engineering, and mathematics.”

PROCESS TO ALIGN POLICY FORMULATION AND  
EMERGING TECHNOLOGY DEVELOPMENT

Pub. L. 116-92, div. A, title II, §232, Dec. 20, 2019, 133 Stat. 1277, provided that:

“(a) ALIGNMENT OF POLICY AND TECHNOLOGICAL DEVELOPMENT.—Not later than 180 days after the date of the enactment of this Act [Dec. 20, 2019], the Secretary of Defense shall establish a process to ensure that the policies of the Department of Defense relating to emerging technology are formulated and updated continuously as such technology is developed by the Department.

“(b) ELEMENTS.—As part of the process established under subsection (a), the Secretary shall—

“(1) specify the role of each covered official in ensuring that the formulation of policies relating to emerging technology is carried out concurrently with the development of such technology; and

“(2) incorporate procedures for the continuous legal review of—

“(A) weapons and other defense systems that incorporate or use emerging technology; and

“(B) treaties that may be affected by such technology.

“(c) BRIEFING REQUIRED.—Not later than 30 days after the date on which the Secretary of Defense establishes the process required under subsection (a), the Secretary shall provide to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a briefing on such process.

“(d) DEFINITIONS.—In this section:

“(1) The term ‘covered official’ means the following:

“(A) The Chairman of the Joint Chiefs of Staff.

“(B) The Under Secretary of Defense for Research and Engineering.

“(C) The Under Secretary of Defense for Acquisition and Sustainment.

“(D) The Under Secretary of Defense for Policy.

“(E) The commanders of combatant commands with responsibilities involving the use of weapons or other defense systems that incorporate or use emerging technology, as determined by the Secretary of Defense.

“(F) The Secretaries of the military departments.

“(2) The term ‘emerging technology’ means technology determined to be in an emerging phase of development by the Secretary of Defense, including quantum computing, technology for the analysis of large and diverse sets of data (commonly known as ‘big data analytics’), artificial intelligence, autonomous technology, robotics, directed energy, hypersonics, biotechnology, and such other technology as may be identified by the Secretary.”

INFRASTRUCTURE TO SUPPORT RESEARCH,  
DEVELOPMENT, TEST, AND EVALUATION MISSIONS

Pub. L. 116-92, div. A, title II, §252, Dec. 20, 2019, 133 Stat. 1285, provided that:

“(a) MASTER PLAN REQUIRED.—The Secretary of Defense, acting through the Under Secretary of Defense for Research and Engineering and in coordination with the Secretaries of the military departments, shall develop and implement a master plan that addresses the research, development, test, and evaluation infrastructure and modernization requirements of the Department of Defense, including the science and technology reinvention laboratories and the facilities of the Major Range and Test Facility Base.

“(b) ELEMENTS.—The master plan required under subsection (a) shall include, with respect to the research, development, test, and evaluation infrastructure of the Department of Defense, the following:

“(1) A summary of deficiencies in the infrastructure, by location, and the effect of the deficiencies on the ability of the Department—

“(A) to meet current and future military requirements identified in the National Defense Strategy;

“(B) to support science and technology development and acquisition programs; and

“(C) to recruit and train qualified personnel.

“(2) A summary of existing and emerging military research, development, test, and evaluation mission areas, by location, that require modernization investments in the infrastructure—

“(A) to improve operations in a manner that may benefit all users;

“(B) to enhance the overall capabilities of the research, development, test, and evaluation infrastructure, including facilities and resources;

“(C) to improve safety for personnel and facilities; and

“(D) to reduce the long-term cost of operation and maintenance.

“(3) Identification of specific infrastructure projects that are required to address the infrastructure deficiencies identified under paragraph (1) or to support the existing and emerging mission areas identified under paragraph (2).

“(4) For each project identified under paragraph (3)—

“(A) a description of the scope of work;

“(B) a cost estimate;

“(C) a summary of the plan for the project;

“(D) an explanation of the level of priority that will be given to the project; and

“(E) a schedule of required infrastructure investments.

“(5) A description of how the Department, including each military department concerned, will carry out the infrastructure projects identified in paragraph (3) using the range of authorities and methods available to the Department, including—

“(A) military construction authority under section 2802 of title 10, United States Code;

“(B) unspecified minor military construction authority under section 2805(a) of such title;

“(C) laboratory revitalization authority under section 2805(d) of such title;

“(D) the authority to carry out facility repair projects, including the conversion of existing facilities, under section 2811 of such title;

“(E) the authority provided under the Defense Laboratory Modernization Pilot Program under section 2803 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114-92; 10 U.S.C. 2358 note);

“(F) methods that leverage funding from entities outside the Department, including public-private partnerships, enhanced use leases and real property exchanges;

“(G) the authority to conduct commercial test and evaluation activities at a Major Range and Test Facility Installation, under section 2881 of title 10, United States Code; and

“(H) any other authorities and methods determined to be appropriate by the Secretary of Defense.

“(6) Identification of any regulatory or policy barriers to the effective and efficient implementation of the master plan.

“(c) CONSULTATION AND COORDINATION.—In developing and implementing the plan required under subsection (a), the Secretary of Defense shall—

“(1) consult with existing and anticipated customers and users of the capabilities of the Major Range and Test Facility Base and science and technology reinvention laboratories;

“(2) ensure consistency with the science and technology roadmaps and strategies of the Department of Defense and the Armed Forces; and

“(3) ensure consistency with the strategic plan for test and evaluation resources required by section 196(d) of title 10, United States Code.

“(d) SUBMITTAL TO CONGRESS.—Not later than January 1, 2021, the Secretary of Defense, in coordination with the Secretaries of the military departments, shall submit to the congressional defense committees [Com-

mittees on Armed Services and Appropriations of the Senate and the House of Representatives] the master plan developed under subsection (a).

“(e) RESEARCH, DEVELOPMENT, TEST, AND EVALUATION INFRASTRUCTURE DEFINED.—In this section, the term ‘research, development, test, and evaluation infrastructure’ means the infrastructure of—

“(1) the science and technology reinvention laboratories (as designated under section 1105 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84; 10 U.S.C. 2358 note));

“(2) the Major Range and Test Facility Base (as defined in section 2358a(f)(3) of title 10, United States Code); and

“(3) other facilities that support the research development, test, and evaluation activities of the Department.”

#### PROCEDURES FOR RAPID REACTION TO EMERGING TECHNOLOGY

Pub. L. 115–232, div. A, title II, §225, Aug. 13, 2018, 132 Stat. 1684, provided that:

“(a) REQUIREMENT TO ESTABLISH PROCEDURES.—Not later than 180 days after the date of the enactment of this Act [Aug. 13, 2018], the Under Secretary of Defense for Research and Engineering shall prescribe procedures for the designation and development of technologies that are—

“(1) urgently needed—

“(A) to react to a technological development of an adversary of the United States; or

“(B) to respond to a significant and urgent emerging technology; and

“(2) not receiving appropriate research funding or attention from the Department of Defense.

“(b) ELEMENTS.—The procedures prescribed under subsection (a) shall include the following:

“(1) A process for streamlined communications between the Under Secretary, the Joint Chiefs of Staff, the commanders of the combatant commands, the science and technology executives within each military department, and the science and technology community, including—

“(A) a process for the commanders of the combatant commands and the Joint Chiefs of Staff to communicate their needs to the science and technology community; and

“(B) a process for the science and technology community to propose technologies that meet the needs communicated by the combatant commands and the Joint Chiefs of Staff.

“(2) Procedures for the development of technologies proposed pursuant to paragraph (1)(B), including—

“(A) a process for demonstrating performance of the proposed technologies on a short timeline;

“(B) a process for developing a development strategy for a technology, including integration into future budget years; and

“(C) a process for making investment determinations based on information obtained pursuant to subparagraphs (A) and (B).

“(c) BRIEFING.—Not later than 180 days after the date of the enactment of this Act, the Under Secretary shall provide to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a briefing on the procedures required by subsection (a).”

#### HUMAN FACTORS MODELING AND SIMULATION ACTIVITIES

Pub. L. 115–232, div. A, title II, §227, Aug. 13, 2018, 132 Stat. 1687, provided that:

“(a) ACTIVITIES REQUIRED.—The Secretary of Defense shall develop and provide for the carrying out of human factors modeling and simulation activities designed to do the following:

“(1) Provide warfighters and civilians with personalized assessment, education, and training tools.

“(2) Identify and implement effective ways to interface and team warfighters with machines.

“(3) Result in the use of intelligent, adaptive augmentation to enhance decision making.

“(4) Result in the development of techniques, technologies, and practices to mitigate critical stressors that impede warfighter and civilian protection, sustainment, and performance.

“(b) PURPOSE.—The overall purpose of the activities shall be to accelerate research and development that enhances capabilities for human performance, human-systems integration, and training for the warfighter.

“(c) PARTICIPANTS IN ACTIVITIES.—Participants in the activities may include the following:

“(1) Elements of the Department of Defense engaged in science and technology activities.

“(2) Program Executive Offices of the Department.

“(3) Academia.

“(4) The private sector.

“(5) Such other participants as the Secretary considers appropriate.”

#### NATIONAL SECURITY INNOVATION ACTIVITIES

Pub. L. 115–232, div. A, title II, §230, Aug. 13, 2018, 132 Stat. 1689, as amended by Pub. L. 116–283, div. A, title II, §213(a), Jan. 1, 2021, 134 Stat. 3456, provided that:

“(a) ESTABLISHMENT.—The Under Secretary of Defense for Research and Engineering shall establish activities to develop interaction between the Department of Defense and the commercial technology industry and academia with regard to emerging hardware products and technologies with national security applications.

“(b) ELEMENTS.—The activities required by subsection (a) shall include the following:

“(1) Informing and encouraging private investment in specific hardware technologies of interest to future defense technology needs with unique national security applications.

“(2) Funding research and technology development in hardware-intensive capabilities that private industry has not sufficiently supported to meet rapidly emerging defense and national security needs.

“(3) Contributing to the development of policies, policy implementation, and actions to deter strategic acquisition of industrial and technical capabilities in the private sector by foreign entities that could potentially exclude companies from participating in the Department of Defense technology and industrial base.

“(4) Identifying promising emerging technology in industry and academia for the Department of Defense for potential support or research and development cooperation.

“(c) TRANSFER OF PERSONNEL AND RESOURCES.—

“(1) IN GENERAL.—Subject to paragraph (2), the Under Secretary may transfer such personnel, resources, and authorities that are under the control of the Under Secretary as the Under Secretary considers appropriate to carry out the activities established under subsection (a) from other elements of the Department under the control of the Under Secretary or upon approval of the Secretary of Defense.

“(2) CERTIFICATION.—The Under Secretary may only make a transfer of personnel, resources, or authorities under paragraph (1) upon certification by the Under Secretary that the activities established under paragraph (a) can attract sufficient private sector investment, has personnel with sufficient technical and management expertise, and has identified relevant technologies and systems for potential investment in order to carry out the activities established under subsection (a), independent of further government funding beyond this authorization.

“(d) ESTABLISHMENT OF NONPROFIT ENTITY.—The Under Secretary may establish or fund a nonprofit entity to carry out the program activities under subsection (a).

“(e) ADVISORY ASSISTANCE.—

“(1) IN GENERAL.—The Under Secretary shall establish a mechanism to seek advice from existing Federal advisory committees on matters relating to—

“(A) the implementation and prioritization of activities established under subsection (a); and

“(B) determining how such activities may be used to support the overall technology strategy of the Department of Defense.

“(2) EXISTING FEDERAL ADVISORY COMMITTEES DEFINED.—In this subsection, the term ‘existing Federal advisory committee’ means an advisory committee that—

“(A) is established pursuant to a provision of Federal law other than this section; and

“(B) has responsibilities relevant to the activities established under subsection (a), as determined by the Under Secretary.

“(f) PLAN.—

“(1) IN GENERAL.—Not later than one year after the date of the enactment of this Act [Aug. 13, 2018], the Under Secretary shall submit to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a detailed plan to carry out this section.

“(2) ELEMENTS.—The plan required by paragraph (1) shall include the following:

“(A) A description of the additional authorities needed to carry out the activities set forth in subsection (b).

“(B) Plans for transfers under subsection (c), including plans for private fund-matching and investment mechanisms, oversight, treatment of rights relating to technical data developed, and relevant dates and goals of such transfers.

“(C) Plans for attracting the participation of the commercial technology industry and academia and how those plans fit into the current Department of Defense research and engineering enterprise.

“(g) AUTHORITIES.—In carrying out this section, the Under Secretary may use the following authorities:

“(1) Section 1711 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) [10 U.S.C. 2505 note], relating to a pilot program on strengthening the defense industrial and innovation base.

“(2) Section 1599g of title 10 of the United States Code, relating to public-private talent exchanges.

“(3) Section 2368 of such title, relating to Centers for Science, Technology, and Engineering Partnerships.

“(4) Section 2374a of such title, relating to prizes for advanced technology achievements.

“(5) Section 2474 of such title, relating to Centers of Industrial and Technical Excellence.

“(6) Section 2521 of such title, relating to the Manufacturing Technology Program.

“(7) Subchapter VI of chapter 33 of title 5, United States Code, relating to assignments to and from States.

“(8) Chapter 47 of such title, relating to personnel research programs and demonstration projects.

“(9) Section 12 of the Stevenson-Wylder Technology Innovation Act of 1980 (15 U.S.C. 3710a) and section 6305 of title 31, United States Code, relating to cooperative research and development agreements.

“(10) Such other authorities as the Under Secretary considers appropriate.

“(h) NOTICE REQUIRED.—Not later than 15 days before the date on which the Under Secretary first exercises the authority granted under subsection (d) and not later than 15 days before the date on which the Under Secretary first obligates or expends any amount authorized under subsection (h), the Under Secretary shall notify the congressional defense committees of such exercise, obligation, or expenditure, as the case may be.”

#### DEFENSE QUANTUM INFORMATION SCIENCE AND TECHNOLOGY RESEARCH AND DEVELOPMENT PROGRAM

Pub. L. 115–232, div. A, title II, § 234, Aug. 13, 2018, 132 Stat. 1692, as amended by Pub. L. 116–92, div. A, title II, § 220, Dec. 20, 2019, 133 Stat. 1260; Pub. L. 116–283, div. A, title II, § 214, Jan. 1, 2021, 134 Stat. 3458, provided that:

“(a) ESTABLISHMENT.—The Secretary of Defense shall carry out a quantum information science and technology research and development program.

“(b) PURPOSES.—The purposes of the program required by subsection (a) are as follows:

“(1) To ensure global superiority of the United States in quantum information science necessary for meeting national security requirements.

“(2) To coordinate all quantum information science and technology research and development within the Department of Defense and to provide for interagency cooperation and collaboration on quantum information science and technology research and development between the Department of Defense and other departments and agencies of the United States and appropriate private sector and international entities that are involved in quantum information science and technology research and development.

“(3) To develop and manage a portfolio of fundamental and applied quantum information science and technology and engineering research initiatives that is stable, consistent, and balanced across scientific disciplines.

“(4) To accelerate the transition and deployment of technologies and concepts derived from quantum information science and technology research and development into the Armed Forces, and to establish policies, procedures, and standards for measuring the success of such efforts.

“(5) To collect, synthesize, and disseminate critical information on quantum information science and technology research and development.

“(6) To establish and support appropriate research, innovation, and industrial base, including facilities, workforce, and infrastructure, to support the needs of Department of Defense missions and systems related to quantum information science and technology.

“(c) ADMINISTRATION.—In carrying out the program required by subsection (a), the Secretary shall act through the Under Secretary of Defense for Research and Engineering, who shall supervise the planning, management, and coordination of the program. The Under Secretary, in consultation with the Secretaries of the military departments and the heads of participating Defense Agencies and other departments and agencies of the United States, shall—

“(1) prescribe a set of long-term challenges and a set of specific technical goals for the program, including—

“(A) optimization of analysis of national security data sets;

“(B) development of defense related quantum computing algorithms;

“(C) design of new materials and molecular functions;

“(D) secure communications and cryptography, including development of quantum communications protocols;

“(E) quantum sensing and metrology;

“(F) development of mathematics relating to quantum enhancements to sensing, communications, and computing; and

“(G) processing and manufacturing of low-cost, robust, and reliable quantum information science and technology-enabled devices and systems;

“(2) develop a coordinated and integrated research and investment plan for meeting the near-, mid-, and long-term challenges with definitive milestones while achieving the specific technical goals that builds upon the Department’s increased investment in quantum information science and technology research and development, commercial sector and global investments, and other United States Government investments in the quantum information sciences, including through consultation with—

“(A) the National Quantum Coordination Office;

“(B) the subcommittee on Quantum Information Science of the National Science and Technology Council;

“(C) other organizations and elements of the Department of Defense;

“(D) other Federal agencies; and

“(E) appropriate private sector organizations;

“(3) in consultation with the entities listed in paragraph (2), develop plans for—

“(A) the development of the quantum information science and technology workforce;

“(B) enhancing awareness of quantum information science and technology;

“(C) reducing the risk of cybersecurity threats posed by quantum information science technology; and

“(D) development of ethical guidelines for the use of quantum information science technology;

“(4) in consultation with the National Institute of Standards and Technology and other appropriate Federal entities, develop a quantum information science taxonomy and standards and requirements for quantum information technology;

“(5) support efforts to increase the technology readiness level of quantum information science technologies under development in the United States;

“(6) not later than 180 days after the date of the enactment of this Act [Aug. 13, 2018], develop and continuously update guidance, including classification and data management plans for defense-related quantum information science and technology activities, and policies for control of personnel participating on such activities to minimize the effects of loss of intellectual property in basic and applied quantum information science and information considered sensitive to the leadership of the United States in the field of quantum information science and technology; and

“(7) develop memoranda of agreement, joint funding agreements, and other cooperative arrangements necessary for carrying out the program under subsection (a).

“(d) **QUANTUM INFORMATION SCIENCE RESEARCH CENTERS.**—The Secretary of each military department may establish or designate a defense laboratory or establish activities to engage with appropriate public and private sector organizations, including academic organizations, to enhance and accelerate the research, development, and deployment of quantum information sciences and quantum information science-enabled technologies and systems. The Secretary of Defense shall ensure that not less than one such laboratory or center is established or designated.

“(e) **USE OF QUANTUM COMPUTING CAPABILITIES.**—The Secretary of each military department shall—

“(1) develop and annually update a list of technical problems and research challenges which are likely to be addressable by quantum computers available for use within in the next one to three years, with a priority for technical problems and challenges where quantum computing systems have performance advantages over traditional computing systems, in order to enhance the capabilities of such quantum computers and support the addressing of relevant technical problems and research challenges; and

“(2) establish programs and enter into agreements with appropriate medium and small businesses with functional quantum computing capabilities to provide such private sector capabilities to government, industry, and academic researchers working on relevant technical problems and research activities.

“(f) **REPORT.**—

“(1) **IN GENERAL.**—Not later than December 31, 2020, the Secretary shall submit to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a report on the program, in both classified and unclassified format.

“(2) **ELEMENTS.**—The report required by paragraph (1) shall include the following:

“(A) A description of the knowledge-base of the Department with respect to quantum information sciences, plans to defend against quantum based attacks, and any plans of the Secretary to enhance such knowledge-base.

“(B) A plan that describes how the Secretary intends to use quantum information sciences for mili-

tary applications and to meet other needs of the Department, including a discussion of likely impacts of quantum information science and technology on military capabilities.

“(C) An assessment of the efforts of foreign powers to use quantum information sciences for military applications and other purposes.

“(D) A description of the activities carried out in accordance with this section, including, for each such activity—

“(i) a roadmap for the activity;

“(ii) a summary of the funding provided for the activity; and

“(iii) an estimated timeline for the development and military deployment of quantum technologies supported through the activity.

“(E) A description of the efforts of the Department of Defense to update classification and cybersecurity practices relating to quantum technology, including—

“(i) security processes and requirements for engagement with allied countries; and

“(ii) a plan for security-cleared government and contractor workforce development.

“(F) Such other matters as the Secretary considers appropriate.”

**JOINT ARTIFICIAL INTELLIGENCE RESEARCH, DEVELOPMENT, AND TRANSITION ACTIVITIES**

Pub. L. 115-232, div. A, title II, § 238, Aug. 13, 2018, 132 Stat. 1695, as amended by Pub. L. 116-92, div. A, title II, § 221, Dec. 20, 2019, 133 Stat. 1261; Pub. L. 116-283, div. A, title II, § 232, Jan. 1, 2021, 134 Stat. 3480, provided that:

“(a) **ESTABLISHMENT.**—

“(1) **IN GENERAL.**—The Secretary of Defense shall establish a set of activities within the Department of Defense to coordinate the efforts of the Department to acquire, develop, mature, and transition artificial intelligence technologies into operational use.

“(2) **EMPHASIS.**—The set of activities established under paragraph (1) shall include—

“(A) acquisition and development of mature artificial intelligence technologies in support of defense missions;

“(B) applying artificial intelligence and machine learning solutions to operational problems by directly delivering artificial intelligence capabilities to the Armed Forces and other organizations and elements of the Department of Defense;

“(C) accelerating the development, testing, and fielding of new artificial intelligence and artificial intelligence-enabling capabilities; and

“(D) coordinating and deconflicting activities involving artificial intelligence and artificial intelligence-enabled capabilities within the Department.

“(b) **DESIGNATION.**—Not later than one year after the date of the enactment of this Act [Aug. 13, 2018], the Secretary shall designate a senior official of the Department with principal responsibility for the coordination of activities relating to the development and demonstration of artificial intelligence and machine learning for the Department.

“(c) **ORGANIZATION AND ROLES.**—

“(1) **ASSIGNMENT OF ROLES AND RESPONSIBILITIES.**—

“(A) **IN GENERAL.**—In addition to designating an official under subsection (b), the Secretary of Defense shall assign to appropriate officials within the Department of Defense roles and responsibilities relating to the research, development, prototyping, testing, procurement of, requirements for, and operational use of artificial intelligence technologies.

“(B) **APPROPRIATE OFFICIALS.**—The officials assigned roles and responsibilities under subparagraph (A) shall include—

“(i) the Under Secretary of Defense for Research and Engineering;

“(ii) the Under Secretary of Defense for Acquisition and Sustainment;

“(iii) the Director of the Joint Artificial Intelligence Center;

“(iv) one or more officials in each military department;

“(v) officials of appropriate Defense Agencies; and

“(vi) such other officials as the Secretary of Defense determines appropriate.

“(2) ROLE OF DIRECTOR OF THE JOINT ARTIFICIAL INTELLIGENCE CENTER.—

“(A) DIRECT REPORT TO DEPUTY SECRETARY OF DEFENSE.—During the covered period, the Director of the Joint Artificial Intelligence Center shall report directly to the Deputy Secretary of Defense without intervening authority.

“(B) CONTINUATION.—The Director of the Joint Artificial Intelligence Center shall continue to report to the Deputy Secretary of Defense as described in subparagraph (A) after the expiration of the covered period if, not later than 30 days before such period expires, the Deputy Secretary—

“(i) determines that the Director should continue to report to Deputy Secretary without intervening authority; and

“(ii) transmits notice of such determination to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives].

“(C) COVERED PERIOD DEFINED.—In this paragraph, the term ‘covered period’ means the period of two years beginning on the date of the enactment of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 [Pub. L. 116-283; approved Jan. 1, 2021].

“(d) DUTIES.—The duties of the official designated under subsection (b) shall include the following:

“(1) STRATEGIC PLAN.—Developing a detailed strategic plan to acquire, develop, mature, adopt, and transition artificial intelligence technologies into operational use. Such plan shall include the following:

“(A) A strategic roadmap for the identification and coordination of the development and fielding of artificial intelligence technologies and key enabling capabilities.

“(B) The continuous evaluation and adaptation of relevant artificial intelligence capabilities developed both inside the Department and in other organizations for military missions and business operations.

“(2) ACCELERATION OF ACQUISITION, DEVELOPMENT AND FIELDING OF ARTIFICIAL INTELLIGENCE.—The official designated under subsection (b) shall—

“(A) use the flexibility of regulations, personnel, acquisition, partnerships with industry and academia, or other relevant policies of the Department to accelerate the acquisition and fielding of artificial intelligence capabilities;

“(B) ensure engagement with defense and private industries, research universities, and unaffiliated, nonprofit research institutions;

“(C) provide technical advice and support to entities in the Department and the military departments to optimize the use of artificial intelligence and machine learning technologies to meet Department missions;

“(D) support the development of requirements for artificial intelligence capabilities that address the highest priority capability gaps of the Department and technical feasibility;

“(E) develop and support capabilities for technical analysis and assessment of threat capabilities based on artificial intelligence;

“(F) ensure that the Department has appropriate workforce and capabilities at laboratories, test ranges, and within the organic defense industrial base to support the artificial intelligence capabilities and requirements of the Department;

“(G) develop classification guidance for all artificial intelligence related activities of the Department;

“(H) develop standard data formats for the Department that—

“(i) aid in defining the relative maturity of datasets; and

“(ii) inform best practices for cost and schedule computation, data collection strategies aligned to mission outcomes, and dataset maintenance practices;

“(I) establish data and model usage agreements and collaborative partnership agreements for artificial intelligence product development with each organization and element of the Department, including each of the Armed Forces;

“(J) work with appropriate officials to develop appropriate ethical, legal, and other policies for the Department governing the development and use of artificial intelligence enabled systems and technologies in operational situations; and

“(K) ensure—

“(i) that artificial intelligence programs of each military department and of the Defense Agencies are consistent with the priorities identified under this section;

“(ii) appropriate coordination of artificial intelligence activities of the Department with inter-agency, industry, and international efforts relating to artificial intelligence, including relevant participation in standards setting bodies; and

“(iii) that appropriate entities in the Department are reviewing all open source publications from both the United States and outside the United States that contribute to, affect, or advance—

“(I) artificial intelligence research and development; or

“(II) the understanding of the Secretary concerning the investments by adversaries of the United States in artificial intelligence and the development by such adversaries of capabilities relating to artificial intelligence.

“(3) GOVERNANCE AND OVERSIGHT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING POLICY.—Regularly convening appropriate officials across the Department—

“(A) to integrate the functional activities of the organizations and elements of the Department with respect to artificial intelligence and machine learning;

“(B) to ensure there are efficient and effective artificial intelligence and machine learning capabilities throughout the Department; and

“(C) to develop and continuously improve research, innovation, policy, joint processes, and procedures to facilitate the development, acquisition, integration, advancement, oversight, and sustainment of artificial intelligence and machine learning throughout the Department.

“(e) ACCESS TO INFORMATION.—Not later than 180 days after the date of the enactment of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 [Jan. 1, 2021], the Secretary of Defense shall issue regulations to ensure that the official designated under subsection (b) has access to such information on programs and activities of the military departments and other Defense Agencies as the Secretary considers appropriate to carry out the duties set forth in subsection (d). At a minimum, such access shall ensure that the Director of the Joint Artificial Intelligence Center has the ability to discover, access, share, and appropriately reuse data and models of the Armed Forces and other organizations and elements of the Department of Defense, build and maintain artificial intelligence capabilities for the Department, and execute the duties assigned to the Director by the Secretary.

“(f) DELINEATION OF DEFINITION OF ARTIFICIAL INTELLIGENCE.—Not later than one year after the date of the enactment of this Act [Aug. 13, 2018], the Secretary shall delineate a definition of the term ‘artificial intelligence’ for use within the Department.

“(g) ARTIFICIAL INTELLIGENCE DEFINED.—In this section, the term ‘artificial intelligence’ includes the following:

“(1) Any artificial system that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets.

“(2) An artificial system developed in computer software, physical hardware, or other context that solves tasks requiring human-like perception, cognition, planning, learning, communication, or physical action.

“(3) An artificial system designed to think or act like a human, including cognitive architectures and neural networks.

“(4) A set of techniques, including machine learning, that is designed to approximate a cognitive task.

“(5) An artificial system designed to act rationally, including an intelligent software agent or embodied robot that achieves goals using perception, planning, reasoning, learning, communicating, decision making, and acting.

“(h) JOINT ARTIFICIAL INTELLIGENCE CENTER DEFINED.—In this section, term ‘Joint Artificial Intelligence Center’ means the Joint Artificial Intelligence Center of the Department of Defense established pursuant to the memorandum of the Secretary of Defense dated June 27, 2018, and titled ‘Establishment of the Joint Artificial Intelligence Center’, or any successor to such Center.”

INITIATIVE TO SUPPORT PROTECTION OF NATIONAL SECURITY ACADEMIC RESEARCHERS FROM UNDUE INFLUENCE AND OTHER SECURITY THREATS

Pub. L. 115–232, div. A, title XII, § 1286, Aug. 13, 2018, 132 Stat. 2078, as amended by Pub. L. 116–92, div. A, title XII, § 1281, Dec. 20, 2019, 133 Stat. 1704; Pub. L. 116–283, div. A, title X, § 1081(d)(6), title XII, § 1299C, Jan. 1, 2021, 134 Stat. 3874, 3999, provided that:

“(a) INITIATIVE REQUIRED.—The Secretary of Defense shall, in consultation with other appropriate government organizations, establish an initiative to work with institutions of higher education who perform defense research and engineering activities—

“(1) to support protection of intellectual property, controlled information, key personnel, and information about critical technologies relevant to national security;

“(2) to limit undue influence, including through foreign talent programs, by countries to exploit United States technology within the Department of Defense research, science and technology, and innovation enterprise; and

“(3) to support efforts toward development of domestic talent in relevant scientific and engineering fields.

“(b) INSTITUTIONS AND ORGANIZATIONS.—The initiative required by subsection (a) shall be developed and executed to the maximum extent practicable with academic research institutions and other educational and research organizations.

“(c) REQUIREMENTS.—The initiative required by subsection (a) shall include development of the following:

“(1) Information exchange forum and information repositories to enable awareness of security threats and influence operations being executed against the United States research, technology, and innovation enterprise.

“(2) Training developed and delivered in consultation with institutions of higher education and appropriate Government agencies, and other support to institutions of higher education, to promote security and limit undue influence on institutions of higher education and personnel, including Department of Defense financial support to carry out such activities, that—

“(A) emphasizes best practices for protection of sensitive national security information;

“(B) includes the dissemination of unclassified materials and resources for identifying and protecting against emerging threats to institutions of higher education, including specific counterintel-

ligence information and advice developed specifically for faculty and academic researchers based on actual identified threats; and

“(C) includes requirements for appropriate senior officials of institutions of higher education to receive from appropriate Government agencies updated and periodic briefings that describe the espionage risks to academic institutions and associated personnel posed by technical intelligence gathering activities of near-peer strategic competitors.

“(3) The capacity of Government agencies and institutions of higher education to assess whether individuals affiliated with Department of Defense programs have participated in or are currently participating in foreign talent programs or expert recruitment programs.

“(4) Opportunities to collaborate with defense researchers and research organizations in secure facilities to promote protection of critical information and strengthen defense against foreign intelligence services.

“(5) Regulations and procedures—

“(A) for Government agencies and academic organizations and personnel to support the goals of the initiative; and

“(B) that are consistent with policies that protect open and scientific exchange in fundamental research.

“(6) Policies to limit or prohibit funding provided by the Department of Defense for institutions or individual researchers who knowingly violate regulations developed under the initiative, including regulations relating to foreign talent programs.

“(7) Initiatives to support the transition of the results of institution of higher education research programs into defense capabilities.

“(8)(A) A list of academic institutions of the People’s Republic of China, the Russian Federation, and other countries that—

“(i) have a history of improper technology transfer, intellectual property theft, or cyber or human espionage;

“(ii) operate under the direction of the military forces or intelligence agency of the applicable country;

“(iii) are known—

“(I) to recruit foreign individuals for the purpose of transferring knowledge to advance military or intelligence efforts; or

“(II) to provide misleading information or otherwise attempt to conceal the connections of an individual or institution to a defense or an intelligence agency of the applicable country; or

“(iv) pose a serious risk of improper technology transfer of data, technology, or research that is not published or publicly available.

“(B) The list described in subparagraph (A) shall be developed and continuously updated in consultation with the Bureau of Industry and Security of the Department of Commerce, the Director of National Intelligence, United States institutions of higher education that conduct significant Department of Defense research or engineering activities, and other appropriate individuals and organizations.

“(9)(A) A list, developed and continuously updated in consultation with the National Academies of Science, Engineering, and Medicine and the appropriate Government agencies, of foreign talent programs that pose a threat to the national security interests of the United States, as determined by the Secretary.

“(B) In developing and updating such list, the Secretary shall consider—

“(i) the extent to which a foreign talent program—

“(I) poses a threat to research funded by the Department of Defense; and

“(II) engages in, or facilitates, cyber attacks, theft, espionage, attempts to gain ownership of or influence over companies, or otherwise interferes in the affairs of the United States; and

“(ii) any other factor the Secretary considers appropriate.

“(d) PROCEDURES FOR ENHANCED INFORMATION SHARING.—

“(1) COLLECTION OF INFORMATION.—

“(A) DEFENSE RESEARCH AND DEVELOPMENT ACTIVITIES.—Not later than October 1, 2020, for the purpose of maintaining appropriate security controls over research activities, technical information, and intellectual property, the Secretary, in conjunction with appropriate public and private entities, shall establish streamlined procedures to collect appropriate information relating to individuals, including United States citizens and foreign nationals, who participate in defense research and development activities.

“(B) FUNDAMENTAL RESEARCH PROGRAMS.—With respect to fundamental research programs, the academic liaison designated under subsection (g) shall establish policies and procedures to collect, consistent with the best practices of Government agencies that fund academic research, appropriate information relating to individuals who participate in fundamental research programs.

“(2) PROTECTION FROM RELEASE.—The procedures required by paragraph (1) shall include procedures to protect such information from release, consistent with applicable regulations.

“(3) REPORTING TO GOVERNMENT INFORMATION SYSTEMS AND REPOSITORIES.—The procedures required by paragraph (1) may include procedures developed, in coordination with appropriate public and private entities, to report such information to existing Government information systems and repositories.

“(e) ANNUAL REPORT.—

“(1) IN GENERAL.—Not later than April 30, 2020, and annually thereafter, the Secretary, acting through appropriate Government officials (including the Under Secretary for Research and Engineering), shall submit to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a report on the activities carried out under the initiative required by subsection (a).

“(2) CONTENTS.—The report required by paragraph (1) shall include the following:

“(A) A description of the activities conducted and the progress made under the initiative.

“(B) The findings of the Secretary with respect to the initiative.

“(C) Such recommendations as the Secretary may have for legislative or administrative action relating to the matters described in subsection (a), including actions related to foreign talent programs.

“(D) Identification and discussion of the gaps in legal authorities that need to be improved to enhance the security of research institutions of higher education performing defense research.

“(E) A description of the actions taken by such institutions to comply with such best practices and guidelines as may be established by under the initiative.

“(F) Identification of any incident relating to undue influence to security threats to academic research activities funded by the Department of Defense, including theft of property or intellectual property relating to a project funded by the Department at an institution of higher education.

“(3) FORM.—The report submitted under paragraph (1) shall be submitted in both unclassified and classified formats, as appropriate.

“(f) PUBLICATION OF UPDATED LISTS.—

“(1) SUBMITTAL TO CONGRESS.—Not later than January 1, 2021, and annually thereafter, the Secretary shall submit to the congressional defense committees the most recently updated lists described in paragraphs (8) and (9) of subsection (c).

“(2) FORM.—Each list submitted under paragraph (1) shall be submitted in unclassified form but may include a classified annex.

“(3) PUBLIC AVAILABILITY.—Each list submitted under paragraph (1) shall be published on a publicly accessible internet website of the Department of Defense in a searchable format.

“(4) INTERVENING SUBMITTAL AND PUBLICATION.—The Secretary may submit and publish an updated list described in paragraph (1) more frequently than required by that paragraph, as the Secretary considers necessary.

“(g) DESIGNATION OF ACADEMIC LIAISON.—

“(1) IN GENERAL.—Not later than 180 days after the date of the enactment of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 [Pub. L. 116-283; approved Jan. 1, 2021], the Secretary, acting through the Under Secretary of Defense for Research and Engineering, shall designate an academic liaison with principal responsibility for working with the academic and research communities to protect Department-sponsored academic research of concern from undue foreign influence and threats.

“(2) QUALIFICATION.—The Secretary shall designate an individual under paragraph (1) who is an official of the Office of the Under Secretary of Defense for Research and Engineering.

“(3) DUTIES.—The duties of the academic liaison designated under paragraph (1) shall be as follows:

“(A) To serve as the liaison of the Department with the academic and research communities.

“(B) To execute initiatives of the Department related to the protection of Department-sponsored academic research of concern from undue foreign influence and threats, including the initiative required by subsection (a).

“(C) To conduct outreach and education activities for the academic and research communities on undue foreign influence and threats to Department-sponsored academic research of concern.

“(D) To coordinate and align academic security policies with Department component agencies, the Office of Science and Technology Policy, the intelligence community, and appropriate Federal agencies.

“(E) To the extent practicable, to coordinate with the intelligence community to share, not less frequently than annually, with the academic and research communities unclassified information, including counterintelligence information, on threats from undue foreign influence.

“(F) Any other related responsibility, as determined by the Secretary in consultation with the Under Secretary of Defense for Research and Engineering.

“(h) INSTITUTION OF HIGHER EDUCATION DEFINED.—The term ‘institution of higher education’ has the meaning given such term in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).”

MECHANISMS FOR EXPEDITED ACCESS TO TECHNICAL TALENT AND EXPERTISE AT ACADEMIC INSTITUTIONS TO SUPPORT DEPARTMENT OF DEFENSE MISSIONS

Pub. L. 115-91, div. A, title II, §217, Dec. 12, 2017, 131 Stat. 1328, as amended by Pub. L. 115-232, div. A, title II, §§228, 236, Aug. 13, 2018, 132 Stat. 1687, 1694; Pub. L. 116-92, div. A, title II, §218, Dec. 20, 2019, 133 Stat. 1259; Pub. L. 116-283, div. A, title II, §244, Jan. 1, 2021, 134 Stat. 3488, provided that:

“(a) ARRANGEMENTS AUTHORIZED.—

“(1) IN GENERAL.—Not later than 180 days after the date of the enactment of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 [Pub. L. 116-283; approved Jan. 1, 2021], the Secretary of Defense shall direct the secretaries of the military departments to establish not fewer than four multi-institution task order contracts, consortia, cooperative agreements, or other arrangements to facilitate expedited access to university technical expertise, including faculty, staff, and students, in support of Department of Defense missions in the areas specified in subsection (e).

“(2) COORDINATION.—In carrying out paragraph (1), the Secretary of Defense may act through the Defense Advanced Research Projects Agency or any other organization or element of the Department of Defense the Secretary considers appropriate.

“(3) USE FOR TECHNICAL ANALYSES AND ENGINEERING SUPPORT.—The Secretary may use an arrangement under paragraph (1) to fund technical analyses and other engineering support as required to address acquisition, management, training, and operational challenges, including support for classified programs and activities.

“(b) LIMITATION.—An arrangement established under subsection (a)(1) may not be used to fund research programs that can be executed through other Department of Defense basic research activities.

“(c) CONSULTATION WITH OTHER DEPARTMENT OF DEFENSE ACTIVITIES.—An arrangement established under subsection (a)(1) shall, to the degree practicable, be made in consultation with other Department of Defense activities, including federally funded research and development centers (FFRDCs), university affiliated research centers (UARCs), and Defense laboratories and test centers, for purposes of providing technical expertise and reducing costs and duplicative efforts.

“(d) POLICIES AND PROCEDURES.—If the Secretary of Defense or a secretary of a military department establishes one or more arrangements under subsection (a)(1), the Secretary of Defense shall establish and implement policies and procedures to govern—

“(1) selection of participants in the arrangement or arrangements;

“(2) the awarding of task orders under the arrangement or arrangements;

“(3) maximum award size for tasks under the arrangement or arrangements;

“(4) the appropriate use of competitive awards and sole source awards under the arrangement or arrangements; and

“(5) technical areas under the arrangement or arrangements.

“(e) MISSION AREAS.—The areas specified in this subsection are as follows:

“(1) Cybersecurity.

“(2) Air and ground vehicles.

“(3) Shipbuilding.

“(4) Explosives detection and defeat.

“(5) Undersea warfare.

“(6) Trusted electronics.

“(7) Unmanned systems.

“(8) Directed energy.

“(9) Energy, power, and propulsion.

“(10) Management science and operations research.

“(11) Artificial intelligence.

“(12) Data analytics.

“(13) Business systems.

“(14) Technology transfer and transition.

“(15) Biological engineering and genetic enhancement.

“(16) High performance computing.

“(17) Materials science and engineering.

“(18) Quantum information sciences.

“(19) Special operations activities.

“(20) Modeling and simulation.

“(21) Autonomous systems.

“(22) Model based engineering.

“(23) Space.

“(24) Infrastructure resilience.

“(25) Photonics.

“(26) Autonomy.

“(27) Rapid prototyping.

“(28) Additive manufacturing.

“(29) Hypersonics.

“(30) 3D and virtual technology training platforms.

“(31) Such other areas as the Secretary considers appropriate.

“(f) REQUIREMENT TO ESTABLISH CONSORTIA.—

“(1) IN GENERAL.—In carrying out subsection (a)(1)—

“(A) the Secretary of Defense shall seek to establish at least one multi-institution consortium through the Office of the Secretary of Defense;

“(B) the Secretary of the Army shall seek to establish at least one multi-institution consortium through the Army;

“(C) the Secretary of the Navy shall seek to establish at least one multi-institution consortium through the Navy; and

“(D) the Secretary of the Air Force shall seek to establish at least one multi-institution consortium through the Air Force.

“(2) REPORT REQUIRED.—Not later than September 30, 2022, the Secretary of Defense shall submit to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a report on the status of the efforts to establish consortia under paragraph (1).

“(g) SUNSET.—No new arrangements may be entered into under subsection (a)(1) after September 30, 2026.

“(h) ARRANGEMENTS ESTABLISHED UNDER SUBSECTION (A)(1) DEFINED.—In this section, the term ‘arrangement established under subsection (a)(1)’ means a multi-institution task order contract, consortia, cooperative agreement, or other arrangement established under subsection (a)(1).”

#### LABORATORY QUALITY ENHANCEMENT PROGRAM

Pub. L. 114-328, div. A, title II, §211, Dec. 23, 2016, 130 Stat. 2046, as amended by Pub. L. 115-91, div. A, title II, §218(a), (b)(1), Dec. 12, 2017, 131 Stat. 1329, 1330, provided that:

“(a) IN GENERAL.—The Secretary of Defense, acting through the Under Secretary of Defense for Research and Engineering, shall carry out a program to be known as the ‘Laboratory Quality Enhancement Program’ under which the Secretary shall establish the panels described in subsection (b) and direct such panels—

“(1) to review and make recommendations to the Secretary with respect to—

“(A) existing policies and practices affecting the science and technology reinvention laboratories to improve the mission effectiveness of such laboratories;

“(B) new initiatives proposed by the science and technology reinvention laboratories; and

“(C) new interpretations of existing statutes and regulations that would enhance the ability of a director of a science and technology reinvention laboratory to manage the facility and discharge the mission of the laboratory;

“(2) to support implementation of current and future initiatives affecting the science and technology reinvention laboratories; and

“(3) to conduct assessments or data analysis on such other issues as the Secretary determines to be appropriate.

“(b) PANELS.—The panels described in this subsection are:

“(1) A panel on personnel, workforce development, and talent management.

“(2) A panel on facilities, equipment, and infrastructure.

“(3) A panel on research strategy, technology transfer, and industry and university partnerships.

“(4) A panel on governance and oversight processes.

“(c) COMPOSITION OF PANELS.—(1) Each panel described in paragraphs (1) through (3) of subsection (b) may be composed of subject matter and technical management experts from—

“(A) laboratories and research centers of the Army, Navy, and Air Force;

“(B) appropriate Defense Agencies;

“(C) the Office of the Under Secretary of Defense for Research and Engineering; and

“(D) such other entities as the Secretary determines to be appropriate.

“(2) The panel described in subsection (b)(4) shall be composed of—

“(A) the Director of the Army Research Laboratory;

“(B) the Director of the Air Force Research Laboratory;

“(C) the Director of the Naval Research Laboratory;

“(D) the Director of the Engineer Research and Development Center of the Army Corps of Engineers; and

“(E) such other members as the Secretary determines to be appropriate.

“(d) GOVERNANCE OF PANELS.—(1) The chairperson of each panel shall be selected by its members.

“(2) Each panel, in coordination with the Under Secretary of Defense for Research and Engineering, shall transmit to the Science and Technology Executive Committee of the Department of Defense such information or findings on topics requiring decision or approval as the panel considers appropriate.

“(3)(A) Each panel described in paragraph (1), (2), or (3) of subsection (b) shall submit to the panel described in paragraph (4) of such subsection (relating to governance and oversight processes) the following:

“(i) The findings of the panel with respect to the review conducted by the panel under subsection (a)(1)(C).

“(ii) The recommendations made by the panel under such subsection.

“(iii) Such comments, findings, and recommendations as the panel may have received by a science and technology reinvention laboratory with respect to—

“(I) the review conducted by the panel under such subsection; or

“(II) recommendations made by the panel under such subsection.

“(B)(i) The panel described in subsection (b)(4) shall review and refashion such recommendations as the panel may receive under subparagraph (A).

“(ii) In reviewing and refashioning recommendations under clause (i), the panel may, as the panel considers appropriate, consult with the science and technology executive of the affected service.

“(C) The panel described in subsection (b)(4) shall submit to the Under Secretary of Defense for Research and Engineering the recommendations made by the panel under subsection (a)(1)(C) and the recommendations refashioned by the panel under subparagraph (B) of this paragraph.

“(e) INTERPRETATION OF PROVISIONS OF LAW.—(1) The Under Secretary of Defense for Research and Engineering, acting under the guidance of the Secretary, shall issue regulations regarding the meaning, scope, implementation, and applicability of any provision of a statute relating to a science and technology reinvention laboratory.

“(2) In interpreting or defining under paragraph (1), the Under Secretary shall, to the degree practicable, emphasize providing the maximum operational flexibility to the directors of the science and technology reinvention laboratories to discharge the missions of their laboratories.

“(3) In interpreting or defining under paragraph (1), the Under Secretary shall, to the extent practicable, consult and coordinate with the secretaries of the military departments and such other agencies or entities as the Under Secretary considers relevant, on any proposed revision to regulations under paragraph (1).

“(4) In interpreting or defining under paragraph (1), the Under Secretary shall seek recommendations from the panel described in subsection (b)(4).

“(f) DISCHARGE OF CERTAIN AUTHORITIES TO CONDUCT PERSONNEL DEMONSTRATION PROJECTS.—[Amended section 342(b) of Pub. L. 103-337, set out as a note below.]

“(g) SCIENCE AND TECHNOLOGY REINVENTION LABORATORY DEFINED.—In this section, the term ‘science and technology reinvention laboratory’ means a science and technology reinvention laboratory designated under section 1105 of the National Defense Authoriza-

tion Act for Fiscal Year 2010 (Public Law 111-84; 10 U.S.C. 2358 note [set out below]), as amended.”

PILOT PROGRAM FOR THE ENHANCEMENT OF THE RESEARCH, DEVELOPMENT, TEST, AND EVALUATION CENTERS OF THE DEPARTMENT OF DEFENSE

Pub. L. 114-328, div. A, title II, §233, Dec. 23, 2016, 130 Stat. 2061, as amended by Pub. L. 115-91, div. A, title II, §235, title X, §1081(d)(2), Dec. 12, 2017, 131 Stat. 1341, 1600; Pub. L. 116-92, div. A, title XVII, §1731(d), Dec. 20, 2019, 133 Stat. 1816; Pub. L. 116-283, div. A, title II, §216(a), (b), Jan. 1, 2021, 134 Stat. 3460, provided that:

“(a) PILOT PROGRAM REQUIRED.—

“(1) IN GENERAL.—The Secretary of Defense and the Secretaries of the military departments shall jointly carry out a pilot program to demonstrate methods for the more effective development of technology and management of functions at eligible centers.

“(2) ELIGIBLE CENTERS.—For purposes of the pilot program, the eligible centers are—

“(A) the science and technology reinvention laboratories, as specified in section 1105(a) of the National Defense Authorization Act for Fiscal Year 2010 [Pub. L. 111-84] (10 U.S.C. 2358 note [set out below]);

“(B) the test and evaluation centers which are activities specified as part of the Major Range and Test Facility Base in Department of Defense Directive 3200.11; and

“(C) the Defense Advanced Research Projects Agency.

“(b) SELECTION.—

“(1) IN GENERAL.—The Secretaries described in subsection (a) shall ensure that participation in the pilot program includes—

“(A) the Defense Advanced Research Projects Agency; and

“(B) in accordance with paragraph (2)—

“(i) five additional eligible centers described in subparagraph (A) of subsection (a)(2) from each of the military departments; and

“(ii) five additional eligible centers described in subparagraph (B) of such subsection from each of the military departments.

“(2) SELECTION PROCEDURES.—(A) The head of an eligible center described in subparagraph (A) or (B) of subsection (a)(2) seeking to participate in the pilot program shall submit to the appropriate reviewer an application therefor at such time, in such manner, and containing such information as the appropriate reviewer shall specify.

“(B) Not later than 120 days after the date of such submittal, each appropriate reviewer shall—

“(i) evaluate each application received under subparagraph (A); and

“(ii) approve or disapprove of the application.

“(C) If the head of an eligible center submits an application under subparagraph (A) in accordance with the requirements specified by the appropriate reviewer for purposes of such subparagraph and the appropriate reviewer neither approves nor disapproves such application pursuant to subparagraph (B)(ii) on or before the date that is 120 days after the date of such submittal, such eligible center shall be considered a participant in the pilot program.

“(D) For purposes of this paragraph, the appropriate reviewer is—

“(i) in the case of an eligible center described in subparagraph (A) of subsection (a)(2), the Laboratory Quality Enhancement Program; and

“(ii) in the case of an eligible center described in subparagraph (B) of such subsection, the Director of the Test Resource Management Center.

“(c) PARTICIPATION IN PROGRAM.—

“(1) IN GENERAL.—Subject to paragraph (2), the head of each eligible center selected under subsection (b)(1) shall submit to the Assistant Secretary concerned a proposal on, and implement, alternative and innovative methods of effective management and operations of eligible centers, rapid project delivery, support, ex-

perimentation, prototyping, and partnership with universities and private sector entities to—

“(A) generate greater value and efficiencies in research and development activities;

“(B) enable more efficient and effective operations of supporting activities, such as—

“(i) facility management, construction, and repair;

“(ii) business operations;

“(iii) personnel management policies and practices; and

“(iv) intramural and public outreach; and

“(C) enable more rapid deployment of warfighter capabilities.

“(2) IMPLEMENTATION.—(A) The head of an eligible center described in subparagraph (A) or (B) of subsection (a)(2) shall implement each method proposed under paragraph (1) unless such method is disapproved in writing by the Assistant Secretary concerned within 60 days of receiving a proposal from an eligible center selected under subsection (b)(1) by such Assistant Secretary.

“(B) The Director of the Defense Advanced Research Projects Agency shall implement each method proposed under paragraph (1) unless such method is disapproved in writing by the Chief Management Officer within 60 days of receiving a proposal from the Director.

“(C) In this paragraph, the term ‘Assistant Secretary concerned’ means—

“(i) the Assistant Secretary of the Air Force for Acquisition [now Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics], with respect to matters concerning the Air Force;

“(ii) the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, with respect to matters concerning the Army; and

“(iii) the Assistant Secretary of the Navy for Research, Development, and Acquisition, with respect to matters concerning the Navy.

“(d) WAIVER AUTHORITY FOR DEMONSTRATION AND IMPLEMENTATION.—Until the termination of the pilot program under subsection (e), the head of an eligible center selected under subsection (b)(1) may waive any regulation, restriction, requirement, guidance, policy, procedure, or departmental instruction that would affect the implementation of a method proposed under subsection (c)(1), unless such implementation would be prohibited by a provision of a Federal statute or common law.

“(e) TERMINATION.—The pilot program shall terminate on September 30, 2027.

“(f) REPORT.—

“(1) IN GENERAL.—Not later than one year after the date of the enactment of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 [Pub. L. 116-283; approved Jan. 1, 2021], the Secretary of Defense shall submit to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a report on the status of the pilot program.

“(2) CONTENTS.—The report required by paragraph (1) shall include the following:

“(A) Identification of the eligible centers participating in the pilot program.

“(B) Identification of the eligible centers whose applications to participate in the pilot program were disapproved under subsection (b), including justifications for such disapprovals.

“(C) A description of the methods implemented pursuant to subsection (c).

“(D) A description of the methods that were proposed pursuant to paragraph (1) of subsection (c) but disapproved under paragraph (2) of such subsection.

“(E) An assessment of how methods implemented pursuant to subsection (c) have contributed to the objectives identified in subparagraphs (A), (B), and (C) of paragraph (1) of such subsection.

“(F) With respect to any military department not participating in the pilot program, an explanation for such nonparticipation, including identification of—

“(i) any issues that may be preventing such participation; and

“(ii) any offices or other elements of the Department of Defense that may be responsible for the delay in participation.”

[Pub. L. 116-283, div. A, title II, §216(b), Jan. 1, 2021, 134 Stat. 3460, provided in part that the amendment made to section 233(c)(2)(C)(ii) of Pub. L. 114-328, set out above, by section 216(b) of Pub. L. 116-283 is effective as of Dec. 23, 2016, and as if included in such section 233(c)(2)(C)(ii) as enacted.]

[Pub. L. 116-92, §1731(d), and Pub. L. 116-283, §216(b), made identical amendments to section 233(c)(2)(C)(ii) of Pub. L. 114-328, set out above, by substituting ‘Assistant Secretary of the Army for Acquisition, Logistics, and Technology’ for ‘Assistant Secretary of the Army for Acquisition, Technology, and Logistics’, both effective as of Dec. 23, 2016, and as if included in such section as enacted. However, the substitution reflects execution of the amendment made by Pub. L. 116-283 and not by Pub. L. 116-92, as the latter directed amendment of the ‘National Defense Authorization Act for Fiscal Year 2018’, and Pub. L. 114-328 is known as the ‘National Defense Authorization Act for Fiscal Year 2017’.]

#### PILOT PROGRAM ON ENHANCED INTERACTION BETWEEN THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY AND THE SERVICE ACADEMIES

Pub. L. 114-328, div. A, title II, §236, Dec. 23, 2016, 130 Stat. 2066, authorized pilot program to enhance interaction between Defense Advanced Research Projects Agency and service academies to promote technology transition, education, and training in science, technology, engineering, and mathematics fields that are relevant to the Department of Defense and terminated authority for program on Sept. 30, 2020.

#### MISSION INTEGRATION MANAGEMENT

Pub. L. 114-328, div. A, title VIII, §855, Dec. 23, 2016, 130 Stat. 2297, directed the Secretary of Defense to establish mission integration management activities for certain mission areas that involve multiple Armed Forces and multiple programs and to submit to the congressional defense committees, at the same time the fiscal year 2018 budget is submitted to Congress, a strategy for mission integration management.

#### PILOT PROGRAM ON ENHANCED PAY AUTHORITY FOR CERTAIN RESEARCH AND TECHNOLOGY POSITIONS IN THE SCIENCE AND TECHNOLOGY REINVENTION LABORATORIES OF THE DEPARTMENT OF DEFENSE

Pub. L. 114-328, div. A, title XI, §1124, Dec. 23, 2016, 130 Stat. 2456, which established a pilot program relating to attracting and retaining high quality acquisition and technology experts in positions responsible for managing and performing complex, high-cost research and technology development efforts in the science and technology reinvention laboratories of the Department of Defense, was repealed by Pub. L. 116-283, div. A, title XI, §1115(c)(1), Jan. 1, 2021, 134 Stat. 3896. See section 2358c of this title.

[Pub. L. 116-283, div. A, title XI, §1115(c)(2), Jan. 1, 2021, 134 Stat. 3896, provided that: ‘The repeal in paragraph (1) [repealing section 1124 of Pub. L. 114-328, formerly set out above] shall not be interpreted to prohibit the payment of basic pay at rates fixed under such section 1124 before the date of the enactment of this Act [Jan. 1, 2021] for positions having terms that continue after that date.’]

#### PLAN FOR ADVANCED WEAPONS TECHNOLOGY WAR GAMES

Pub. L. 114-92, div. A, title II, §240, Nov. 25, 2015, 129 Stat. 784, directed the Secretary of Defense to develop,

in coordination with the Chairman of the Joint Chiefs of Staff, a plan for integrating advanced weapons and offset technologies into exercises carried out by the military to improve the development and experimentation of various concepts for employment by the Armed Forces and to submit to the Committees on Armed Services of the House of Representatives and the Senate, not later than one year after Nov. 25, 2015, a report on the plan and its implementation.

INFORMATION OPERATIONS AND ENGAGEMENT  
TECHNOLOGY DEMONSTRATIONS

Pub. L. 114-92, div. A, title X, §1056, Nov. 25, 2015, 129 Stat. 984, provided that:

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

“(1) military information support operations are a critical component of the efforts of the Department of Defense to provide commanders with capabilities to shape the operational environment;

“(2) military information support operations are integral to armed conflict and therefore the Secretary of Defense has broad latitude to conduct military information support operations;

“(3) the Secretary of Defense should develop creative and agile concepts, technologies, and strategies across all available media to most effectively reach target audiences, to counter and degrade the ability of adversaries and potential adversaries to persuade, inspire, and recruit inside areas of hostilities or in other areas in direct support of the objectives of commanders; and

“(4) the Secretary of Defense should request additional funds in future budgets to carry out military information support operations to support the broader efforts of the Government to counter violent extremism.

“(b) TECHNOLOGY DEMONSTRATIONS REQUIRED.—To support the ability of the Department of Defense to provide innovative operational concepts and technologies to shape the informational environment, the Secretary of Defense shall carry out a series of technology demonstrations, subject to the availability of funds for such purpose or to a prior approval reprogramming, to assess innovative new technologies for information operations and information engagement to support the operational and strategic requirements of the commanders of the geographic and functional combatant commands, including the urgent and emergent operational needs and the operational and theater campaign plans of such combatant commanders to further the national security objectives and strategic communications requirements of the United States.

“(c) PLAN.—By not later than 180 days after the date of the enactment of this Act [Nov. 25, 2015], the Secretary of Defense shall provide to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] a plan describing how the Department of Defense will execute the technology demonstrations required under subsection (b). Such plan shall include each of the following elements:

“(1) A general timeline for conducting the technology demonstrations.

“(2) Clearly defined goals and endstate objectives for the demonstrations, including traceability of such goals to the tactical, operational, or strategic requirements of the combatant commanders.

“(3) A process for measuring the performance and effectiveness of the demonstrations.

“(4) A coordination structure to include participation between the technology development and the operational communities, including potentially joint, interagency, intergovernmental, and multinational partners.

“(5) The identification of potential technologies to support the tactical, operational, or strategic needs of the combatant commanders.

“(6) An explanation of how such technologies will support and coordinate with elements of joint, inter-

agency, intergovernmental, and multinational partners.

“(d) CONGRESSIONAL NOTICE.—Upon initiating a technology demonstration under subsection (b), the Secretary of Defense shall submit to the congressional defense committees written notice of the demonstration that includes a detailed description of the demonstration, including its purpose, cost, engagement medium, targeted audience, and any other details the Secretary of Defense believes will assist the committees in evaluating the demonstration.

“(e) TERMINATION.—The authority to carry out a technology demonstration under this section shall terminate on September 30, 2022.

“(f) RULE OF CONSTRUCTION.—Nothing in this section shall be construed to limit or alter any authority under which the Department of Defense supports information operations activities within the Department.”

PILOT PROGRAM ON DYNAMIC SHAPING OF THE WORKFORCE TO IMPROVE THE TECHNICAL SKILLS AND EXPERTISE AT CERTAIN DEPARTMENT OF DEFENSE LABORATORIES

Pub. L. 114-92, div. A, title XI, §1109, Nov. 25, 2015, 129 Stat. 1028, as amended by Pub. L. 115-232, div. A, title XI, §1112(b), Aug. 13, 2018, 132 Stat. 2012, provided that:

“(a) PILOT PROGRAM REQUIRED.—The Secretary of Defense shall establish a pilot program to utilize the authorities specified in subsection (b) at the Department of Defense laboratories specified in subsection (c) to provide the directors of such laboratories the authority to dynamically shape the mix of technical skills and expertise in the workforces of such laboratories in order to achieve one or more of the following:

“(1) To meet organizational and Department-designated missions in the most cost-effective and efficient manner.

“(2) To upgrade and enhance the scientific quality of the workforces of such laboratories.

“(3) To shape such workforces to better respond to such missions.

“(4) To reduce the average unit cost of such workforces.

“(b) WORKFORCE SHAPING AUTHORITIES.—The authorities that shall be available for use by the director of a Department of Defense laboratory under the pilot program are the following:

“(1) FLEXIBLE LENGTH AND RENEWABLE TERM TECHNICAL APPOINTMENTS.—

“(A) IN GENERAL.—Subject to the provisions of this paragraph, authority otherwise available to the director by law (and within the available budgetary resources of the laboratory) to make appointments as follows:

“(i) Appointment of qualified scientific and technical personnel who are not current Department of Defense civilian employees into any scientific or technical position in the laboratory for a period of more than one year but not more than six years.

“(ii) Appointment of qualified scientific and technical personnel who are Department civilian employees in term appointments into any scientific or technical position in the laboratory for a period of more than one year but not more than six years.

“(B) BENEFITS.—Personnel appointed under this paragraph shall be provided with benefits comparable to those provided to similar employees at the laboratory concerned, including professional development opportunities, eligibility for all laboratory awards programs, and designation as ‘status applicants’ for the purposes of eligibility for positions in the Federal service.

“(C) EXTENSION OF APPOINTMENTS.—The appointment of any individual under this paragraph may be extended without limit in up to six year increments at any time during any term of service under such conditions as the director concerned shall establish for purposes of this paragraph.

“(D) CONSTRUCTION WITH CERTAIN LIMITATION.—For purposes of determining the workforce size of a laboratory in connection with compliance with section 955 of the National Defense Authorization Act for Fiscal Year 2013 (Public Law 112-239; 126 Stat. 1896; 10 U.S.C. 129a note), any individual serving in an appointment under this paragraph shall be treated as a fractional employee of the laboratory, which fraction is—

“(i) the current term of appointment of the individual under this paragraph; divided by

“(ii) the average length of tenure of a career employee at the laboratory, as calculated at the end of the last fiscal year ending before the date of the most recent appointment or extension of the individual under this paragraph.

“(2) REEMPLOYMENT OF ANNUITANTS.—Authorities to authorize the director of any science and technology reinvention laboratory (in this section referred to as ‘STRL’) to reemploy annuitants in accordance with section 9902(g) of title 5, United States Code, except that as a condition for reemployment the director may authorize the deduction from the pay of any annuitant so reemployed of an amount up to the amount of the annuity otherwise payable to such annuitant allocable to the period of actual employment of such annuitant, which amount shall be determined in a manner specified by the director for purposes of this paragraph to ensure the most cost effective execution of designated missions by the laboratory while retaining critical technical skills.

“(3) EARLY RETIREMENT INCENTIVES.—Authorities to authorize the director of any STRL to authorize voluntary early retirement of employees in accordance with section 8336 of title 5, United States Code, without regard to section 8336(d)(2)(D) or 3522 of such title, and with employees so separated voluntarily from service.

“(4) SEPARATION INCENTIVE PAY.—Authorities to authorize the director of any STRL to pay voluntary separation pay to employees in accordance with section 8414(b)(1)(B) of title 5, United States Code, without regard to clause (iv) or (v) of such section or section 3522 of such title, and with—

“(A) employees so separated voluntarily from service under regulations prescribed by the Secretary of Defense for purposes of the pilot program; and

“(B) payments to employees so separated authorized under section 3523 of such title without regard to—

“(i) the plan otherwise required by section 3522 of such title; and

“(ii) paragraph (1) or (3) of section 3523(b) of such title.

“(c) LABORATORIES.—The Department of Defense laboratories specified in this subsection are the laboratories specified in section 1105(a) of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84; 123 Stat. 2486; 10 U.S.C. 2358 note).

“(d) EXPIRATION.—

“(1) IN GENERAL.—The authority in this section shall expire on December 31, 2023.

“(2) CONTINUATION OF AUTHORITIES EXERCISED BEFORE TERMINATION.—The expiration in paragraph (1) shall not be construed to effect the continuation after the date specified in paragraph (1) of any term of employment or other benefit authorized under this section before that date in accordance with the terms of such authorization.”

#### DEFENSE LABORATORY MODERNIZATION PILOT PROGRAM

Pub. L. 114-92, div. B, title XXVIII, § 2803, Nov. 25, 2015, 129 Stat. 1169, as amended by Pub. L. 114-328, div. B, title XXVIII, § 2806, Dec. 23, 2016, 130 Stat. 2715; Pub. L. 115-232, div. B, title XXVIII, § 2808(a)-(c), Aug. 13, 2018, 132 Stat. 2265, 2266, provided that:

“(a) AUTHORITY TO USE RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FUNDS.—Using amounts appropriated or otherwise made available to the Department

of Defense for research, development, test, and evaluation, the Secretary of Defense may fund a military construction project described in subsection (d) at any of the following:

“(1) A Department of Defense Science and Technology Reinvention Laboratory (as designated by section 1105(a) of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84; 10 U.S.C. 2358 note)[)].

“(2) A Department of Defense Federally Funded Research and Development Center that functions primarily as a research laboratory.

“(3) A Department of Defense facility in support of a technology development program that is consistent with the fielding of offset technologies as described in section 218 of this Act [set out as a note under section 2501 of this title].

“(4) A Department of Defense research, development, test, and evaluation facility that is not designated as a Science and Technology Reinvention Laboratory, but nonetheless is involved with developmental test and evaluation.

“(b) CONDITION ON AND SCOPE OF PROJECT AUTHORITY.—Subject to the condition that a military construction project under subsection (a) be authorized in a Military Construction Authorization Act, the authority to carry out the military construction project includes authority for—

“(1) surveys, site preparation, and advanced planning and design;

“(2) acquisition, conversion, rehabilitation, and installation of facilities;

“(3) acquisition and installation of equipment and appurtenances integral to the project; acquisition and installation of supporting facilities (including utilities) and appurtenances incident to the project; and

“(4) planning, supervision, administration, and overhead expenses incident to the project.

“(c) CONGRESSIONAL NOTIFICATION REQUIREMENTS.—

“(1) SUBMISSION OF PROJECT REQUESTS.—The Secretary of Defense shall include military construction projects proposed to be carried out under subsection (a) in the budget justification documents for the Department of Defense submitted to Congress in connection with the budget for a fiscal year submitted under 1105 of title 31, United States Code.

“(2) NOTIFICATION OF IMPLEMENTATION.—Not less than 14 days prior to the first obligation of funds described in subsection (a) for a military construction project to be carried out under subsection (a), the Secretary of Defense shall submit a notification to the congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives] providing an updated construction description, cost, and schedule for the project and any other matters regarding the project as the Secretary considers appropriate.

“(d) AUTHORIZED PROJECTS DESCRIBED.—The authority provided by subsection (a) to fund military construction projects using amounts appropriated or otherwise made available for research, development, test, and evaluation is limited to military construction projects that the Secretary of Defense, in the budget justification documents exhibits submitted pursuant to subsection (c)(1), determines—

“(1) will support research and development activities at laboratories described in subsection (a);

“(2) will establish facilities that will have significant potential for use by entities outside the Department of Defense, including universities, industrial partners, and other Federal agencies;

“(3) are endorsed for funding by more than one military department or Defense Agency; and

“(4) cannot be fully funded within the thresholds specified in section 2805 of title 10, United States Code.

“(e) FUNDING LIMITATION.—The maximum amount of funds appropriated or otherwise made available for research, development, test, and evaluation that may be

obligated in any fiscal year for military construction projects under subsection (a) is \$150,000,000.

“(f) ADDITIONAL AUTHORITY TO USE FUNDS FOR RELATED ARCHITECTURAL AND ENGINEERING SERVICES AND CONTRACT DESIGN.—

“(1) AUTHORITY.—In addition to the authority provided to the Secretary of Defense under subsection (a) to use amounts appropriated or otherwise made available for research, development, test, and evaluation for a military construction project referred to in such subsection, the Secretary of the military department concerned may use amounts appropriated or otherwise made available for research, development, test, and evaluation to obtain architectural and engineering services and to carry out construction design in connection with such a project.

“(2) NOTICE REQUIREMENT.—In the case of architectural and engineering services and construction design to be undertaken under this subsection for which the estimated cost exceeds \$1,000,000, the Secretary concerned shall notify the appropriate committees of Congress of the scope of the proposed project and the estimated cost of such services before the initial obligation of funds for such services. The Secretary may then obligate funds for such services only after the end of the 14-day period beginning on the date on which the notification is received by the committees in an electronic medium pursuant to section 480 of this title [sic; probably means section 480 of title 10, United States Code].

“(g) TERMINATION OF AUTHORITY.—The authority provided by this section to fund military construction projects using funds appropriated or otherwise made available for research, development, test, and evaluation shall terminate on October 1, 2025.”

[Pub. L. 115-232, div. B, title XXVIII, §2808(d), Aug. 13, 2018, 132 Stat. 2266, provided that: “The amendments made by this section [amending section 2803 of Pub. L. 114-92, set out above] shall take effect as if included in the enactment of section 2803 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114-92; 129 Stat. 1169; 10 U.S.C. 2358 note).”]

PILOT PROGRAM ON ASSIGNMENT TO DEFENSE ADVANCED RESEARCH PROJECTS AGENCY OF PRIVATE SECTOR PERSONNEL WITH CRITICAL RESEARCH AND DEVELOPMENT EXPERTISE

Pub. L. 113-291, div. A, title II, §232, Dec. 19, 2014, 128 Stat. 3332, as amended by Pub. L. 115-91, div. A, title X, §1051(t)(1), Dec. 12, 2017, 131 Stat. 1566, provided that:

“(a) PILOT PROGRAM AUTHORIZED.—In accordance with the provisions of this section, the Director of the Defense Advanced Research Projects Agency may carry out a pilot program to assess the feasibility and advisability of temporarily assigning covered individuals with significant technical expertise in research and development areas of critical importance to defense missions to the Defense Advanced Research Projects Agency to lead research or development projects of the Agency.

“(b) ASSIGNMENT OF COVERED INDIVIDUALS.—

“(1) NUMBER OF INDIVIDUALS ASSIGNED.—Under the pilot program, the Director may assign covered individuals to the Agency as described in subsection (a), but may not have more than five covered individuals so assigned at any given time.

“(2) PERIOD OF ASSIGNMENT.—

“(A) Except as provided in subparagraph (B), the Director may, under the pilot program, assign a covered individual described in subsection (a) to lead research and development projects of the Agency for a period of not more than two years.

“(B) The Director may extend the assignment of a covered individual for one additional period of not more than two years as the Director considers appropriate.

“(3) APPLICATION OF CERTAIN PROVISIONS OF LAW.—

“(A) Except as otherwise provided in this section, the Director shall carry out the pilot program in accordance with the provisions of subchapter VI of

chapter 33 of title 5, United States Code, except that, for purposes of the pilot program, the term ‘other organization’, as used in such subchapter, shall be deemed to include a covered entity.

“(B) A covered individual employed by a covered entity who is assigned to the Agency under the pilot program is deemed to be an employee of the Department of Defense for purposes of the following provisions of law:

“(i) Chapter 73 of title 5, United States Code.

“(ii) Sections 201, 203, 205, 207, 208, 209, 603, 606, 607, 643, 654, 1905, and 1913 of title 18, United States Code.

“(iii) Sections 1343, 1344, and 1349(b) of title 31, United States Code.

“(iv) Chapter 171 of title 28, United States Code (commonly known as the ‘Federal Tort Claims Act’), and any other Federal tort liability statute.

“(v) The Ethics in Government Act of 1978 (5 U.S.C. App.).

“(vi) Section 1043 of the Internal Revenue Code of 1986 [26 U.S.C. 1043].

“(vii) Chapter 21 of title 41, United States Code.

“(4) PAY AND SUPERVISION.—A covered individual employed by a covered entity who is assigned to the Agency under the pilot program—

“(A) may continue to receive pay and benefits from such covered entity with or without reimbursement by the Agency;

“(B) is not entitled to pay from the Agency; and

“(C) shall be subject to supervision by the Director in all duties performed for the Agency under the pilot program.

“(c) CONFLICTS OF INTEREST.—

“(1) PRACTICES AND PROCEDURES REQUIRED.—The Director shall develop practices and procedures to manage conflicts of interest and the appearance of conflicts of interest that could arise through assignments under the pilot program.

“(2) ELEMENTS.—The practices and procedures required by paragraph (1) shall include, at a minimum, the requirement that each covered individual assigned to the Agency under the pilot program shall sign an agreement that provides for the following:

“(A) The nondisclosure of any trade secrets or other nonpublic or proprietary information which is of commercial value to the covered entity from which such covered individual is assigned.

“(B) The assignment of rights to intellectual property developed in the course of any research or development project under the pilot program—

“(i) to the Agency and its contracting partners in accordance with applicable provisions of law regarding intellectual property rights; and

“(ii) not to the covered individual or the covered entity from which such covered individual is assigned.

“(C) Such additional measures as the Director considers necessary to carry out the program in accordance with Federal law.

“(d) PROHIBITION ON CHARGES BY COVERED ENTITIES.—A covered entity may not charge the Federal Government, as direct or indirect costs under a Federal contract, the costs of pay or benefits paid by the covered entity to a covered individual assigned to the Agency under the pilot program.

“(e) TERMINATION OF AUTHORITY.—The authority provided in this section shall expire on September 30, 2025, except that any covered individual assigned to the Agency under the pilot program shall continue in such assignment until the terms of such assignment have been satisfied.

“(f) DEFINITIONS.—In this section:

“(1) The term ‘covered individual’ means any individual who is employed by a covered entity.

“(2) The term ‘covered entity’ means any non-Federal, nongovernmental entity that, as of the date on which a covered individual employed by the entity is assigned to the Agency under the pilot program, is a

nontraditional defense contractor (as defined in section 2302 of title 10, United States Code).”

TEMPORARY AUTHORITIES FOR CERTAIN POSITIONS AT DEPARTMENT OF DEFENSE RESEARCH AND ENGINEERING FACILITIES

Pub. L. 113-66, div. A, title XI, §1107, Dec. 26, 2013, 127 Stat. 887, as amended by Pub. L. 113-291, div. A, title XI, §1105, Dec. 19, 2014, 128 Stat. 3526; Pub. L. 114-92, div. A, title XI, §1104, Nov. 25, 2015, 129 Stat. 1023, authorized director of any Science and Technology Reinvention Laboratory, until Dec. 31, 2019, to appoint qualified candidates possessing a bachelor's degree or enrolled in undergraduate or graduate scientific, technical, engineering or mathematical programs or to appoint qualified veteran candidates to certain laboratory positions, prior to repeal by Pub. L. 114-328, div. A, title XI, §1122(b), Dec. 23, 2016, 130 Stat. 2455. See section 2358a of this title.

REGIONAL ADVANCED TECHNOLOGY CLUSTERS

Pub. L. 112-239, div. A, title II, §252, Jan. 2, 2013, 126 Stat. 1688, authorized the Secretary of Defense to use the research and engineering network of the Department of Defense to support regional advanced technology clusters established by the Secretary of Commerce to encourage the development of innovative advanced technologies to address national security and homeland defense challenges and directed the Under Secretary of Defense for Acquisition, Technology, and Logistics to submit a report to Congress, not later than 180 days after Jan. 2, 2013, on the participation of the Department of Defense in the regional advanced technology clusters.

ADVANCED ROTORCRAFT FLIGHT RESEARCH AND DEVELOPMENT

Pub. L. 112-81, div. A, title II, §222, Dec. 31, 2011, 125 Stat. 1336, as amended by Pub. L. 114-328, div. A, title VIII, §833(b)(2)(C)(iii), Dec. 23, 2016, 130 Stat. 2284; Pub. L. 115-91, div. A, title X, §1081(d)(6)(B), Dec. 12, 2017, 131 Stat. 1600, authorized the Secretary of the Army to conduct a program for flight research and demonstration of advanced rotorcraft technology and directed the Secretary to use competitive procedures in accordance with section 2304 of this title in awarding contracts under the program.

PROGRAM FOR RESEARCH, DEVELOPMENT, AND DEPLOYMENT OF ADVANCED GROUND VEHICLES, GROUND VEHICLE SYSTEMS, AND COMPONENTS

Pub. L. 111-383, div. A, title II, §214, Jan. 7, 2011, 124 Stat. 4164, provided for a program for research and development on, and deployment of, advanced technology ground vehicles, ground vehicle systems, and components within the Department of Defense.

PILOT PROGRAM TO INCLUDE TECHNOLOGY PROTECTION FEATURES DURING RESEARCH AND DEVELOPMENT OF DEFENSE SYSTEMS

Pub. L. 111-383, div. A, title II, §243, Jan. 7, 2011, 124 Stat. 4178, as amended by Pub. L. 112-81, div. A, title II, §252, Dec. 31, 2011, 125 Stat. 1347; Pub. L. 113-66, div. A, title II, §264, Dec. 26, 2013, 127 Stat. 726; Pub. L. 113-291, div. A, title II, §231, Dec. 19, 2014, 128 Stat. 3332; Pub. L. 115-91, div. A, title X, §1051(p)(2), Dec. 12, 2017, 131 Stat. 1564, which related to a pilot program to develop and incorporate technology protection features during the research and development phase of a system, was repealed by Pub. L. 115-232, div. A, title II, §223(c), Aug. 13, 2018, 132 Stat. 1683. See section 2357 of this title.

PROGRAM TO ASSESS THE UTILITY OF NON-LETHAL WEAPONS

Pub. L. 111-383, div. A, title X, §1078, Jan. 7, 2011, 124 Stat. 4380, directed the Secretary of Defense to carry out a program to demonstrate and assess the utility and effectiveness of non-lethal weapons, including non-

lethal weapons designed for counter-personal and counter-material missions, to provide escalation of force options in counter-insurgency operations and directed the Secretary of Defense to submit a report to the congressional defense committees no later than Oct. 1, 2011.

MECHANISMS TO PROVIDE FUNDS FOR DEFENSE LABORATORIES FOR RESEARCH AND DEVELOPMENT OF TECHNOLOGIES FOR MILITARY MISSIONS

Pub. L. 110-417, [div. A], title II, §219, Oct. 14, 2008, 122 Stat. 4389, as amended by Pub. L. 111-84, div. B, title XXVIII, §2801(c), Oct. 28, 2009, 123 Stat. 2660; Pub. L. 112-81, div. A, title II, §253, Dec. 31, 2011, 125 Stat. 1347; Pub. L. 113-66, div. A, title II, §262(a), (b), Dec. 26, 2013, 127 Stat. 725, 726; Pub. L. 114-328, div. A, title II, §212, Dec. 23, 2016, 130 Stat. 2047, which related to funding mechanisms, availability of funds for infrastructure projects, and annual reports, was repealed by Pub. L. 115-91, div. A, title II, §220(c)(1), Dec. 12, 2017, 131 Stat. 1333.

SCIENCE AND TECHNOLOGY INVESTMENT STRATEGY TO DEFEAT OR COUNTER IMPROVISED EXPLOSIVE DEVICES

Pub. L. 110-417, [div. A], title XV, §1504, Oct. 14, 2008, 122 Stat. 4650, as amended by Pub. L. 112-81, div. A, title X, §1062(b), Dec. 31, 2011, 125 Stat. 1585; Pub. L. 112-239, div. A, title X, §1076(c)(2)(D), Jan. 2, 2013, 126 Stat. 1950, directed the Director of the Joint Improvised Explosive Device Defeat Organization to develop, jointly with the Assistant Secretary of Defense for Research and Engineering, a comprehensive science and technology investment strategy for countering the threat of improvised explosive devices.

HYPERSONICS DEVELOPMENT

Pub. L. 109-364, div. A, title II, §218, Oct. 17, 2006, 120 Stat. 2126, as amended by Pub. L. 112-81, div. A, title II, §241, Dec. 31, 2011, 125 Stat. 1343; Pub. L. 114-92, div. A, title X, §1079(f), Nov. 25, 2015, 129 Stat. 999; Pub. L. 115-91, div. A, title II, §214(b), Dec. 12, 2017, 131 Stat. 1325; Pub. L. 116-92, div. A, title II, §216, Dec. 20, 2019, 133 Stat. 1257; Pub. L. 116-283, div. A, title II, §217(e), Jan. 1, 2021, 134 Stat. 3462, provided that:

“(a) ESTABLISHMENT OF JOINT HYPERSONICS TRANSITION OFFICE.—The Secretary of Defense shall establish within the Office of the Secretary of Defense a Joint Hypersonics Transition Office (in this section referred to as the ‘Office’). The Office shall carry out the program and activities described in subsections (b) and (c) and shall have such other responsibilities relating to hypersonics as the Secretary shall specify[.]

“(b) UNIVERSITY EXPERTISE.—

“(1) ARRANGEMENT WITH INSTITUTIONS OF HIGHER EDUCATION.—Using the authority specified in section 217 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91; 10 U.S.C. 2358 note) or another similar authority, the Office shall seek to enter into an arrangement with one or more institutions of higher education (as defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001)) under which such institutions may provide the Office with foundational and applied hypersonic research, development, and workforce support in areas that the Office determines to be relevant for the Department of Defense.

“(2) AVAILABILITY OF INFORMATION.—The Office shall ensure that the results of any research and reports produced pursuant to an arrangement under paragraph (1) are made available to the Federal Government, the private sector, academia, and international partners consistent with appropriate security classification guidance.

“(c) RESPONSIBILITIES.—The Office shall do the following:

“(1) Expedite testing, evaluation, and acquisition of hypersonic technologies to meet the stated needs of the warfighter, including flight testing, ground-based-testing, and underwater launch testing.

“(2) Ensure prototyping demonstration programs on hypersonic systems integrate advanced technologies to speed the maturation and deployment of future hypersonic systems.

“(3) Ensure that any demonstration program on hypersonic systems is carried out only if determined to be consistent with the roadmap for the relevant critical technology area supportive of the National Defense Strategy, as developed by the senior official with responsibility for such area under section 217 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 [Pub. L. 116-283; 10 U.S.C. 4001 note].

“(4) Develop strategies and roadmaps for hypersonic technologies to enable the transition of such technologies to future operational capabilities for the warfighter.

“(5) Develop and implement a strategy for enhancing the current and future hypersonics workforce.

“(6) Coordinate with relevant stakeholders and agencies to support the technological advantage of the United States in developing hypersonic systems.”

#### COLLABORATIVE PROGRAM FOR RESEARCH AND DEVELOPMENT OF VACUUM ELECTRONICS TECHNOLOGIES

Pub. L. 108-375, div. A, title II, §212, Oct. 28, 2004, 118 Stat. 1832, as amended by Pub. L. 112-239, div. A, title X, §1076(c)(2)(A)(iii), Jan. 2, 2013, 126 Stat. 1950, directed the Secretary of Defense to establish a program for research and development in advanced vacuum electronics to meet the requirements of Department of Defense systems, to be carried out collaboratively by the Assistant Secretary of Defense for Research and Engineering, the Secretary of the Navy, the Secretary of the Air Force, the Secretary of the Army, and other appropriate elements of the Department of Defense, and directed the Assistant Secretary of Defense for Research and Engineering to submit to the congressional defense committees, no later than Jan. 31, 2005, a report on the implementation of the program.

#### DEPARTMENT OF DEFENSE PROGRAM TO EXPAND HIGH-SPEED, HIGH-BANDWIDTH CAPABILITIES FOR NETWORK-CENTRIC OPERATIONS

Pub. L. 108-136, div. A, title II, §234, Nov. 24, 2003, 117 Stat. 1423, directed the Secretary of Defense to carry out a program of research and development to promote the development of high-speed, high-bandwidth communications capabilities for support of network-centric operations by the Armed Forces and to submit to the congressional defense committees, together with the budget justification materials submitted to Congress for fiscal year 2006, a report on the program.

#### RESEARCH AND DEVELOPMENT OF DEFENSE BIOMEDICAL COUNTERMEASURES

Pub. L. 108-136, div. A, title XVI, §1601, Nov. 24, 2003, 117 Stat. 1680, as amended by Pub. L. 112-81, div. A, title X, §1062(g)(3), Dec. 31, 2011, 125 Stat. 1585; Pub. L. 113-291, div. A, title X, §1071(b)(5)(B), Dec. 19, 2014, 128 Stat. 3507; Pub. L. 114-92, div. A, title VIII, §815(d), Nov. 25, 2015, 129 Stat. 896, provided that:

“(a) IN GENERAL.—The Secretary of Defense (in this section referred to as the ‘Secretary’) shall carry out a program to accelerate the research, development and procurement of biomedical countermeasures, including but not limited to therapeutics and vaccines, for the protection of the Armed Forces from attack by one or more biological, chemical, radiological, or nuclear agents.

“(b) INTERAGENCY COOPERATION.—(1) In carrying out the program under subsection (a), the Secretary may enter into interagency agreements and other collaborative undertakings with other Federal agencies.

“(2) The Secretary, through regular, structured, and close consultation with the Secretary of Health and Human Services and the Secretary of Homeland Security, shall ensure that the activities of the Department of Defense in carrying out the program are coordinated

with, complement, and do not unnecessarily duplicate activities of the Department of Health and Human Services or the Department of Homeland Security.

“(c) EXPEDITED PROCUREMENT AUTHORITY.—(1) For any procurement of property or services for use (as determined by the Secretary) in performing, administering, or supporting biomedical countermeasures research and development, the Secretary may, when appropriate, use streamlined acquisition procedures and other expedited procurement procedures authorized in—

“(A) section 1903 of title 41, United States Code; and

“(B) sections 2371 and 2371b of title 10, United States Code.

“(2) Notwithstanding paragraph (1) and the provisions of law referred to in such paragraph, each of the following provisions shall apply to the procurements described in this subsection to the same extent that such provisions would apply to such procurements in the absence of paragraph (1):

“(A) Chapter 37 of title 40, United States Code (relating to contract work hours and safety standards).

“(B) Section 8703(a) of title 41, United States Code.

“(C) Section 2313 of title 10, United States Code (relating to the examination of contractor records).

“(3) The Secretary shall institute appropriate internal controls for use of the authority under paragraph (1), including requirements for documenting the justification for each use of such authority.

“(d) DEPARTMENT OF DEFENSE FACILITIES AUTHORITY.—(1) If the Secretary determines that it is necessary to acquire, lease, construct, or improve laboratories, research facilities, and other real property of the Department of Defense in order to carry out the program under this section, the Secretary may do so using the procedures set forth in paragraphs (2), (3), (4), and (5).

“(2) The Secretary shall use existing construction authorities provided by subchapter I of chapter 169 of title 10, United States Code, to the maximum extent possible.

“(3)(A) If the Secretary determines that use of authorities in paragraph (2) would prevent the Department from meeting a specific facility requirement for the program, the Secretary shall submit to the congressional defense committees [Committees on Armed Services and Appropriations of Senate and House of Representatives] advance notification, which shall include the following:

“(i) Certification by the Secretary that use of existing construction authorities would prevent the Department from meeting the specific facility requirement.

“(ii) A detailed explanation of the reasons why existing authorities cannot be used.

“(iii) A justification of the facility requirement.

“(iv) Construction project data and estimated cost.

“(v) Identification of the source or sources of the funds proposed to be expended.

“(B) The facility project may be carried out only after the end of the 21-day period beginning on the date the notification is received by the congressional defense committees.

“(4) If the Secretary determines: (A) that the facility is vital to national security or to the protection of health, safety, or the quality of the environment; and (B) the requirement for the facility is so urgent that the advance notification in paragraph (3) and the subsequent 21-day deferral of the facility project would threaten the life, health, or safety of personnel, or would otherwise jeopardize national security, the Secretary may obligate funds for the facility and notify the congressional defense committees within seven days after the date on which appropriated funds are obligated with the information required in paragraph (3).

“(5) Nothing in this section shall be construed to authorize the Secretary to acquire, construct, lease, or improve a facility having general utility beyond the specific purposes of the program.

“(6) In this subsection, the term ‘facility’ has the meaning given the term in section 2801(c) of title 10, United States Code.

“(e) **AUTHORITY FOR PERSONAL SERVICES CONTRACTS.**—(1) Subject to paragraph (2), the authority provided by section 1091 of title 10, United States Code, for personal services contracts to carry out health care responsibilities in medical treatment facilities of the Department of Defense shall also be available, subject to the same terms and conditions, for personal services contracts to carry out research and development activities under this section. The number of individuals whose personal services are obtained under this subsection may not exceed 30 at any time.

“(2) The authority provided by such section 1091 may not be used for a personal services contract unless the contracting officer for the contract ensures that—

“(A) the services to be procured are urgent or unique; and

“(B) it would not be practicable for the Department of Defense to obtain such services by other measures.

“(f) **STREAMLINED PERSONNEL AUTHORITY.**—(1) The Secretary may appoint highly qualified experts, including scientific and technical personnel, to carry out research and development under this section in accordance with the authorities provided in section 342 of the National Defense Authorization Act for Fiscal Year 1995 (Public Law 103-337; 108 Stat. 2721), [former] section 1101 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (Public Law 105-261 [5 U.S.C. 3104 note]), and section 1101 of this Act [enacting chapter 99 of Title 5, Government Organization and Employees, and provisions set out as a note under section 9901 of Title 5].

“(2) The Secretary may use the authority under paragraph (1) only upon a determination by the Secretary that use of such authority is necessary to accelerate the research and development under the program.

“(3) The Secretary shall institute appropriate internal controls for each use of the authority under paragraph (1).”

Pub. L. 107-107, div. A, title X, §1044(a), Dec. 28, 2001, 115 Stat. 1219, directed the Secretary of Defense to carry out a program to aggressively accelerate the research, development, testing, and licensure of new medical countermeasures for defense against biological warfare agents, including for the prevention and treatment of anthrax.

#### VEHICLE FUEL CELL PROGRAM

Pub. L. 107-314, div. A, title II, §245, Dec. 2, 2002, 116 Stat. 2500, directed the Secretary of Defense to carry out a program for the development of vehicle fuel cell technology in cooperation with companies selected by the Secretary and appropriated \$10,000,000 for the program from funds authorized for Department of Defense research, development, test, and evaluation for fiscal year 2003.

#### DEFENSE NANOTECHNOLOGY RESEARCH AND DEVELOPMENT PROGRAM

Pub. L. 107-314, div. A, title II, §246, Dec. 2, 2002, 116 Stat. 2500, as amended by Pub. L. 110-181, div. A, title II, §240, Jan. 28, 2008, 122 Stat. 48; Pub. L. 111-84, div. A, title II, §242, Oct. 28, 2009, 123 Stat. 2237; Pub. L. 112-239, div. A, title X, §1076(c)(2)(A)(iv), Jan. 2, 2013, 126 Stat. 1950, provided that:

“(a) **ESTABLISHMENT.**—The Secretary of Defense shall carry out a defense nanotechnology research and development program.

“(b) **PURPOSES.**—The purposes of the program are as follows:

“(1) To ensure United States global superiority in nanotechnology necessary for meeting national security requirements.

“(2) To coordinate all nanoscale research and development within the Department of Defense, and to provide for interagency cooperation and collaboration on nanoscale research and development between the Department of Defense and other departments and agencies of the United States that are involved in the National Nanotechnology Initiative and with the

National Nanotechnology Coordination Office under section 3 of the 21st Century Nanotechnology Research and Development Act (15 U.S.C. 7502).

“(3) To develop and manage a portfolio of nanotechnology research and development initiatives that is stable, consistent, and balanced across scientific disciplines.

“(4) To accelerate the transition and deployment of technologies and concepts derived from nanoscale research and development into the Armed Forces, and to establish policies, procedures, and standards for measuring the success of such efforts.

“(5) To collect, synthesize, and disseminate critical information on nanoscale research and development.

“(c) **ADMINISTRATION.**—In carrying out the program, the Secretary shall act through the Under Secretary of Defense for Acquisition, Technology, and Logistics, who shall supervise the planning, management, and coordination of the program. The Under Secretary, in consultation with the Secretaries of the military departments and the heads of participating Defense Agencies and other departments and agencies of the United States, shall—

“(1) prescribe a set of long-term challenges and a set of specific technical goals for the program;

“(2) develop a coordinated and integrated research and investment plan for meeting the long-term challenges and achieving the specific technical goals that builds upon investments by the Department and other departments and agencies participating in the National Nanotechnology Initiative in nanotechnology research and development;

“(3) develop memoranda of agreement, joint funding agreements, and other cooperative arrangements necessary for meeting the long-term challenges and achieving the specific technical goals; and

“(4) oversee Department of Defense participation in interagency coordination of the program with other departments and agencies participating in the National Nanotechnology Initiative.

“(d) **STRATEGIC PLAN.**—The Under Secretary shall develop and maintain a strategic plan for defense nanotechnology research and development that—

“(1) is integrated with the strategic plan for the National Nanotechnology Initiative and the strategic plans of the Assistant Secretary of Defense for Research and Engineering, the military departments, and the Defense Agencies; and

“(2) includes a clear strategy for transitioning the research into products needed by the Department.

“(e) **REPORTS.**—The Under Secretary of Defense for Acquisition, Technology, and Logistics shall submit to the National Science and Technology Council information on the program that covers the information described in paragraphs (1) through (5) of section 2(d) of the 21st Century Nanotechnology Research and Development Act (15 U.S.C. 7501(d)) to be included in the annual report submitted by the Council under that section.”

#### REPORT ON WEAPONS AND CAPABILITIES TO DEFEAT HARDENED AND DEEPLY BURIED TARGETS

Pub. L. 107-314, div. A, title X, §1032, Dec. 2, 2002, 116 Stat. 2643, as amended by Pub. L. 108-136, div. C, title XXXI, §3135, Nov. 24, 2003, 117 Stat. 1752, as amended by Pub. L. 110-181, div. A, title X, §1041, Jan. 28, 2008, 122 Stat. 310; Pub. L. 111-383, div. A, title X, §1075(j), Jan. 7, 2011, 124 Stat. 4378, which required biennial reports on the development of weapons and capabilities to defeat hardened and deeply buried targets, was repealed by Pub. L. 115-232, div. A, title VIII, §812(b)(28), Aug. 13, 2018, 132 Stat. 1849.

#### PILOT PROGRAMS FOR REVITALIZING LABORATORIES AND TEST AND EVALUATION CENTERS OF DEPARTMENT OF DEFENSE

Pub. L. 107-314, div. A, title II, §241, Dec. 2, 2002, 116 Stat. 2492, which authorized the Secretary of Defense to carry out an additional pilot program to demonstrate

improved efficiency in the performance of research, development, test, and evaluation functions of the Department of Defense, was repealed by Pub. L. 115-232, div. A, title VIII, §812(b)(29), Aug. 13, 2018, 132 Stat. 1849.

Pub. L. 106-65, div. A, title II, §245, Oct. 5, 1999, 113 Stat. 552, as amended by Pub. L. 107-314, div. A, title II, §241(d)(2), Dec. 2, 2002, 116 Stat. 2493, authorized the Secretary of Defense to carry out a pilot program for up to five years beginning not later than Mar. 1, 2000, to demonstrate improved efficiency in the performance of research, development, test, and evaluation functions of the Department of Defense, and directed the Secretary to submit to Congress a report on the implementation of the program not later than Mar. 1, 2000, and a final report promptly after the expiration of the period for participation in the program.

Pub. L. 105-261, div. A, title II, §246, Oct. 17, 1998, 112 Stat. 1955, as amended by Pub. L. 107-314, div. A, title II, §241(d)(1), Dec. 2, 2002, 116 Stat. 2493, authorized the Secretary of Defense to carry out a pilot program for up to six years beginning not later than Mar. 1, 1999, to demonstrate improved cooperative relationships with universities and other private sector entities for the performance of research and development functions, and directed the Secretary to submit a report on the implementation of the program to Congress not later than Mar. 1, 1999, and a final report on participation in the program promptly after the expiration of the period for participation.

#### DEFENSE ESTABLISHED PROGRAM TO STIMULATE COMPETITIVE RESEARCH

Pub. L. 105-18, title I, §307, June 12, 1997, 111 Stat. 169, as amended by Pub. L. 115-91, div. A, title II, §219(e)(3), Dec. 12, 2017, 131 Stat. 1331, provided that: "For the purposes of implementing the 1997 Defense Established Program to Stimulate Competitive Research (DEPSCoR), the term 'State' means a State of the United States, the District of Columbia, Puerto Rico, Guam and the Virgin Islands of the United States, American Samoa and the Commonwealth of the Northern Mariana Islands."

Pub. L. 103-337, div. A, title II, §257, Oct. 5, 1994, 108 Stat. 2705, as amended by Pub. L. 104-106, div. A, title II, §273, Feb. 10, 1996, 110 Stat. 239; Pub. L. 104-201, div. A, title II, §264, Sept. 23, 1996, 110 Stat. 2465; Pub. L. 105-85, div. A, title II, §243, Nov. 18, 1997, 111 Stat. 1667; Pub. L. 106-65, div. A, title IX, §911(a)(1), Oct. 5, 1999, 113 Stat. 717; Pub. L. 107-314, div. A, title II, §247, Dec. 2, 2002, 116 Stat. 2502; Pub. L. 110-181, div. A, title II, §239, Jan. 28, 2008, 122 Stat. 48; Pub. L. 112-239, div. A, title X, §1076(c)(2)(A)(v), Jan. 2, 2013, 126 Stat. 1950; Pub. L. 115-91, div. A, title II, §219(a)-(e)(1), Dec. 12, 2017, 131 Stat. 1330, 1331, provided that:

"(a) PROGRAM REQUIRED.—The Secretary of Defense, acting through the Assistant Secretary of Defense for Research and Engineering, shall carry out a Defense Established Program to Stimulate Competitive Research (DEPSCoR) as part of the university research programs of the Department of Defense.

"(b) PROGRAM OBJECTIVES.—The objectives of the program are as follows:

"(1) To increase the number of university researchers in eligible States capable of performing science and engineering research responsive to the needs of the Department of Defense.

"(2) To enhance the capabilities of institutions of higher education in eligible States to develop, plan, and execute science and engineering research that is relevant to the mission of the Department of Defense and competitive under the peer-review systems used for awarding Federal research assistance.

"(3) To increase the probability of long-term growth in the competitively awarded financial assistance that institutions of higher education in eligible States receive from the Federal Government for science and engineering research.

"(c) PROGRAM ACTIVITIES.—In order to achieve the program objectives, the following activities are authorized under the program:

"(1) Competitive award of grants for research and instrumentation to support such research.

"(2) Competitive award of financial assistance for graduate students.

"(3) To provide assistance to science and engineering researchers at institutions of higher education in eligible States through collaboration between Department of Defense laboratories and such researchers.

"(4) Any other activities that are determined necessary to further the achievement of the objectives of the program.

"(d) ELIGIBLE STATES.—(1) The Under Secretary of Defense for Acquisition, Technology, and Logistics shall designate which States are eligible States for the purposes of this section.

"(2) The Under Secretary of Defense for Acquisition, Technology, and Logistics shall designate a State as an eligible State if, as determined by the Under Secretary—

"(A) the average annual amount of all Department of Defense obligations for science and engineering research and development that were in effect with institutions of higher education in the State for the three fiscal years preceding the fiscal year for which the designation is effective or for the last three fiscal years for which statistics are available is less than the amount determined by multiplying 60 percent times the amount equal to  $\frac{1}{100}$  of the total average annual amount of all Department of Defense obligations for science and engineering research and development that were in effect with institutions of higher education in the United States for such three preceding or last fiscal years, as the case may be; and

"(B) the State has demonstrated a commitment to developing research bases in the State and to improving science and engineering research and education programs in areas relevant to the mission of the Department of Defense at institutions of higher education in the State.

"(3) The Under Secretary shall not remove a designation of a State under paragraph (2) because the State exceeds the funding levels specified under subparagraph (A) of such paragraph unless the State has exceeded such funding levels for at least two consecutive years.

"(e) COORDINATION WITH SIMILAR FEDERAL PROGRAMS.—(1) The Secretary may consult with the Director of the National Science Foundation and the Director of the Office of Science and Technology Policy in the planning, development, and execution of the program and may coordinate the program with the Established Program to Stimulate Competitive Research conducted by the National Science Foundation and with similar programs sponsored by other departments and agencies of the Federal Government.

"(2) All solicitations under the Defense Established Program to Stimulate Competitive Research may be made to, and all awards may be made through, the State committees established for purposes of the Established Program to Stimulate Competitive Research conducted by the National Science Foundation.

"(3) A State committee referred to in paragraph (2) shall ensure that activities carried out in the State of that committee under the Defense Established Program to Stimulate Competitive Research are relevant to the mission of the Department of Defense and coordinated with the activities carried out in the State under other similar initiatives of the Federal Government to stimulate competitive research.

"(f) STATE DEFINED.—In this section, the term 'State' means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, American Samoa, and the Commonwealth of the Northern Mariana Islands."

#### DEFENSE LABORATORIES PERSONNEL DEMONSTRATION PROJECTS

Pub. L. 111-84, div. A, title XI, §1105, Oct. 28, 2009, 123 Stat. 2486, as amended by Pub. L. 113-291, div. A, title XI, §1103, Dec. 19, 2014, 128 Stat. 3525; Pub. L. 115-91, div.

A, title XI, §1104, Dec. 12, 2017, 131 Stat. 1629, provided that:

“(a) DESIGNATION OF LABORATORIES.—Each of the following is hereby designated as a Department of Defense science and technology reinvention laboratory (as described in section 342(b) of the National Defense Authorization Act for Fiscal Year 1995 (Public Law 103-337; 108 Stat. 2721) [set out below], as amended by section 1114 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001):

“(1) The Aviation and Missile Research Development and Engineering Center.

“(2) The Army Research Laboratory.

“(3) The Medical Research and Materiel Command.

“(4) The Engineer Research and Development Command.

“(5) The Communications-Electronics Command.

“(6) The Soldier and Biological Chemical Command.

“(7) The Naval Sea Systems Command Centers.

“(8) The Naval Research Laboratory.

“(9) The Office of Naval Research.

“(10) The Air Force Research Laboratory.

“(11) The Tank and Automotive Research Development and Engineering Center.

“(12) The Armament Research Development and Engineering Center.

“(13) The Naval Air Warfare Center, Weapons Division.

“(14) The Naval Air Warfare Center, Aircraft Division.

“(15) The Space and Naval Warfare Systems Center, Pacific.

“(16) The Space and Naval Warfare Systems Center, Atlantic.

“(17) The laboratories within the Army Research Development and Engineering Command.

“(18) The Army Research Institute for the Behavioral and Social Sciences.

“(19) The Space and Missile Defense Command Technical Center.

“(20) The Naval Medical Research Center.

“(21) The Joint Warfighting Analysis Center.

“(22) The Naval Facilities Engineering and Expeditionary Warfare Center.

“(b) CONVERSION PROCEDURES.—The Secretary of Defense shall implement procedures to convert the civilian personnel of each Department of Defense science and technology reinvention laboratory, as so designated by subsection (a), from the personnel system which applies as of the date of the enactment of this Act [Oct. 28, 2009] to the personnel system under an appropriate demonstration project (as referred to in such section 342(b)). Any conversion under this subsection—

“(1) shall not adversely affect any employee with respect to pay or any other term or condition of employment;

“(2) shall be consistent with section 4703(f) of title 5, United States Code;

“(3) shall be completed within 18 months after the date of the enactment of this Act; and

“(4) shall not apply to prevailing rate employees (as defined by section 5342(a)(2) of title 5, United States Code) or senior executives (as defined by section 3132(a)(3) of such title).

“(c) LIMITATION.—The science and technology reinvention laboratories, as so designated by subsection (a), may not implement any personnel system, other than a personnel system under an appropriate demonstration project (as referred to in such section 342(b) [set out below]), without prior congressional authorization.”

Pub. L. 110-181, div. A, title XI, §1107, Jan. 28, 2008, 122 Stat. 357, as amended by Pub. L. 110-417, [div. A], title XI, §1109, Oct. 14, 2008, 122 Stat. 4618; Pub. L. 111-84, div. A, title X, §1073(d), Oct. 28, 2009, 123 Stat. 2475; Pub. L. 111-383, div. A, title XI, §1101(b), Jan. 7, 2011, 124 Stat. 4382; Pub. L. 112-81, div. A, title X, §1066(b)(2), Dec. 31, 2011, 125 Stat. 1588, provided that:

“(a) REQUIREMENT.—The Secretary of Defense shall take all necessary actions to fully implement and use

the authorities provided to the Secretary under section 342(b) of the National Defense Authorization Act for Fiscal Year 1995 (Public Law 103-337; 108 Stat. 2721) [set out below], as amended by section 1114 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (as enacted into law by Public Law 106-398; 114 Stat. 1654A-315), to carry out personnel management demonstration projects at Department of Defense laboratories designated by section 1105(a) of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84; 123 Stat. 2486; 10 U.S.C. 2358 note) as Department of Defense science and technology reinvention laboratories.

“(b) PROCESS FOR FULL IMPLEMENTATION.—The Secretary of Defense shall also implement a process and implementation plan to fully utilize the authorities described in subsection (a) to enhance the performance of the missions of the laboratories.

“(c) OTHER LABORATORIES.—Any flexibility available to any demonstration laboratory shall be available for use at any other laboratory designated by section 1105(a) of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84; 123 Stat. 2486) as a Department of Defense science and technology reinvention laboratory.

“(d) SUBMISSION OF LIST AND DESCRIPTION.—Not later than March 1 of each year, the Secretary of Defense shall submit to Congress a report containing a list and description of the demonstration project notices, amendments, and changes requested by the laboratories during the preceding calendar year. The list shall include all approved and disapproved notices, amendments, and changes, and the reasons for disapproval or delay in approval.

“(e) STATUS REPORTS.—

“(1) IN GENERAL.—The Secretary shall include in each report under subsection (d) the information described in paragraph (2).

“(2) INFORMATION REQUIRED.—Each report under subsection (d) shall describe the following:

“(A) The actions taken by the Secretary of Defense under subsection (a) during the year covered by the report.

“(B) The progress made by the Secretary of Defense during such year in developing and implementing the plan required by subsection (b), including the anticipated date for completion of such plan and a list and description of any issues relating to the development or implementation of such plan.

“(C) With respect to any applications by any Department of Defense laboratories seeking to be designated as a demonstration laboratory or to otherwise obtain any of the personnel flexibilities available to a demonstration laboratory—

“(i) the number of applications that were received, pending, or acted on during such year;

“(ii) the status or disposition of any applications under clause (i), including, in the case of any application on which a final decision was rendered, the laboratory involved, what the laboratory had requested, the decision reached, and the reasons for the decision; and

“(iii) in the case of any applications under clause (i) on which a final decision was not rendered, the date by which a final decision is anticipated.

“(3) DEFINITION.—For purposes of this subsection, the term ‘demonstration laboratory’ means a laboratory designated by the Secretary of Defense under the provisions of section 342(b) of the National Defense Authorization Act for Fiscal Year 1995 [Pub. L. 103-337, set out below] (as cited in subsection (a)).”

[For termination, effective Dec. 31, 2021, of annual reporting provisions in section 1107(d) of Pub. L. 110-181, set out above, see section 1061 of Pub. L. 114-328, set out as a note under section 111 of this title.]

Pub. L. 103-337, div. A, title III, §342(b), Oct. 5, 1994, 108 Stat. 2721, as amended by Pub. L. 106-65, div. A, title XI, §1109, Oct. 5, 1999, 113 Stat. 779; Pub. L. 106-398, §1 [[div. A], title XI, §1114], Oct. 30, 2000, 114 Stat. 1654,

1654A-315; Pub. L. 114-328, div. A, title II, §211(f), formerly §211(e), Dec. 23, 2016, 130 Stat. 2047, redesignated §211(f), Pub. L. 115-91, div. A, title II, §218(a)(3), Dec. 12, 2017, 131 Stat. 1330; Pub. L. 115-91, div. A, title II, §218(b)(2), Dec. 12, 2017, 131 Stat. 1330, provided that:

“(1) The Secretary of Defense may carry out personnel demonstration projects at Department of Defense laboratories designated by the Secretary as Department of Defense science and technology reinvention laboratories.

“(2)(A) Each personnel demonstration project carried out under the authority of paragraph (1) shall be generally similar in nature to the China Lake demonstration project.

“(B) For purposes of subparagraph (A), the China Lake demonstration project is the demonstration project that is authorized by section 6 of the Civil Service Miscellaneous Amendments Act of 1983 [Pub. L. 98-224, 98 Stat. 49] to be continued at the Naval Weapons Center, China Lake, California, and at the Naval Ocean Systems Center, San Diego, California.

“(3) If the Secretary carries out a demonstration project at a laboratory pursuant to paragraph (1), section 4703 of title 5, United States Code, shall apply to the demonstration project, except that—

“(A) subsection (d) of such section 4703 shall not apply to the demonstration project;

“(B) the authority of the Secretary to carry out the demonstration project is that which is provided in paragraph (1) rather than the authority which is provided in such section 4703; and

“(C) the Secretary shall exercise the authorities granted to the Office of Personnel Management under such section 4703 through the Under Secretary of Defense for Research and Engineering (who shall place an emphasis in the exercise of such authorities on enhancing efficient operations of the laboratory and who may, in exercising such authorities, request administrative support from science and technology reinvention laboratories to review, research, and adjudicate personnel demonstration project proposals).

“(4) The employees of a laboratory covered by a personnel demonstration project carried out under this section [enacting this note] shall be exempt from, and may not be counted for the purposes of, any constraint or limitation in a statute or regulation in terms of supervisory ratios or maximum number of employees in any specific category or categories of employment that may otherwise be applicable to the employees. The employees shall be managed by the director of the laboratory subject to the supervision of the Under Secretary of Defense for Acquisition, Technology, and Logistics.

“(5) The limitations in section 5373 of title 5, United States Code, do not apply to the authority of the Secretary under this section to prescribe salary schedules and other related benefits.”

#### INCLUSION OF WOMEN AND MINORITIES IN CLINICAL RESEARCH PROJECTS

Pub. L. 103-160, div. A, title II, §252, Nov. 30, 1993, 107 Stat. 1607, provided that:

“(a) GENERAL RULE.—In conducting or supporting clinical research, the Secretary of Defense shall ensure that—

“(1) women who are members of the Armed Forces are included as subjects in each project of such research; and

“(2) members of minority groups who are members of the Armed Forces are included as subjects of such research.

“(b) WAIVER AUTHORITY.—The requirement in subsection (a) regarding women and members of minority groups who are members of the Armed Forces may be waived by the Secretary of Defense with respect to a project of clinical research if the Secretary determines that the inclusion, as subjects in the project, of women and members of minority groups, respectively—

“(1) is inappropriate with respect to the health of the subjects;

“(2) is inappropriate with respect to the purpose of the research; or

“(3) is inappropriate under such other circumstances as the Secretary of Defense may designate.

“(c) REQUIREMENT FOR ANALYSIS OF RESEARCH.—In the case of a project of clinical research in which women or members of minority groups will under subsection (a) be included as subjects of the research, the Secretary of Defense shall ensure that the project is designed and carried out so as to provide for a valid analysis of whether the variables being tested in the research affect women or members of minority groups, as the case may be, differently than other persons who are subjects of the research.”

#### UNIVERSITY RESEARCH INITIATIVE SUPPORT PROGRAM

Pub. L. 103-160, div. A, title VIII, §802, Nov. 30, 1993, 107 Stat. 1701, as amended by Pub. L. 104-106, div. A, title II, §275, Feb. 10, 1996, 110 Stat. 241; Pub. L. 104-201, div. A, title II, §263, Sept. 23, 1996, 110 Stat. 2465; Pub. L. 112-239, div. A, title X, §1076(c)(2)(E), Jan. 2, 2013, 126 Stat. 1950, provided that:

“(a) ESTABLISHMENT.—The Secretary of Defense, through the Assistant Secretary of Defense for Research and Engineering, may establish a University Research Initiative Support Program.

“(b) PURPOSE.—Under the program, the Assistant Secretary may award grants and contracts to eligible institutions of higher education to support the conduct of research and development relevant to requirements of the Department of Defense.

“(c) ELIGIBILITY.—An institution of higher education is eligible for a grant or contract under the program if the institution has received less than a total of \$2,000,000 in grants and contracts from the Department of Defense in the two most recent fiscal years for which complete statistics are available when proposals are requested for such grant or contract.

“(d) COMPETITION REQUIRED.—The Assistant Secretary shall use competitive procedures in awarding grants and contracts under the program.

“(e) SELECTION PROCESS.—In awarding grants and contracts under the program, the Assistant Secretary shall use a merit-based selection process that is consistent with the provisions of section 2361(a) of title 10, United States Code.

“(f) REGULATIONS.—The Assistant Secretary shall prescribe regulations for carrying out the program.

“(g) FUNDING.—Of the amounts authorized to be appropriated under section 201 [107 Stat. 1583], \$20,000,000 shall be available for the University Research Initiative Support Program.”

#### INDEPENDENT RESEARCH AND DEVELOPMENT; BID AND PROPOSAL COSTS; NEGOTIATION OF ADVANCE AGREEMENTS WITH CONTRACTORS; ANNUAL REPORT TO CONGRESS

Pub. L. 91-441, title II, §203, Oct. 7, 1970, 84 Stat. 906, as amended by Pub. L. 96-342, title II, §208, Sept. 8, 1980, 94 Stat. 1081, provided that no funds authorized to be appropriated to Department of Defense by this or any other Act were to be used to finance independent research and development or bid and proposal costs unless such work had, in opinion of Secretary of Defense, potential relationship to military functions or operations, and advance agreements regarding payment for such work had been negotiated, prior to repeal by Pub. L. 101-510, div. A, title VIII, §824(b), Nov. 5, 1990, 104 Stat. 1604.

#### RELATIONSHIP OF RESEARCH PROJECTS OR STUDIES TO MILITARY FUNCTION OR OPERATION

Pub. L. 91-441, title II, §204, Oct. 7, 1970, 84 Stat. 908, which provided that no funds authorized to be appropriated to the Department of Defense by this or any other Act may be used to finance any research project or study unless such project or study has, in the opinion of the Secretary of Defense, a potential relationship to a military function or operation, was repealed

and restated in subsec. (b) of this section by Pub. L. 100-370, §1(g)(3)(C), (5), July 19, 1988, 102 Stat. 847.

HERBICIDES AND DEFOLIATION PROGRAM; COMPREHENSIVE STUDY AND INVESTIGATION; REPORT BY JANUARY 31, 1972; TRANSMITTAL TO PRESIDENT AND CONGRESS BY MARCH 1, 1972

Pub. L. 91-441, title V, §506(c), Oct. 7, 1970, 84 Stat. 913, directed Secretary of Defense to enter into appropriate arrangements with National Academy of Sciences to conduct a comprehensive study and investigation to determine (A) ecological and physiological dangers inherent in use of herbicides, and (B) ecological and physiological effects of defoliation program carried out by Department of Defense in South Vietnam, with a report on the study to be transmitted to President and Congress by Mar. 1, 1972.

CAMPUSES BARRING MILITARY RECRUITERS; CESSATION OF PAYMENTS; NOTIFICATION OF SECRETARY OF DEFENSE

Pub. L. 92-436, title VI, §606, Sept. 29, 1972, 86 Stat. 740, provided that:

“(a) No part of the funds appropriated pursuant to this or any other Act for the Department of Defense or any of the Armed Forces may be used at any institution of higher learning if the Secretary of Defense or his designee determines that recruiting personnel of any of the Armed Forces of the United States are being barred by the policy of such institution from the premises of the institution: except in a case where the Secretary of the service concerned certifies to the Congress in writing that a specific course of instruction is not available at any other institution of higher learning and furnishes to the Congress the reasons why such course of instruction is of vital importance to the security of the United States.

“(b) The prohibition made by subsection (a) of this section as it applies to research and development funds shall not apply if the Secretary of Defense or his designee determines that the expenditure is a continuation or a renewal of a previous program with such institution which is likely to make a significant contribution to the defense effort.

“(c) The Secretaries of the military departments shall furnish to the Secretary of Defense or his designee within 60 days after the date of enactment of this Act [Sept. 29, 1972] and each January 31 and June 30 thereafter the names of any institution of higher learning which the Secretaries determine on such dates are affected by the prohibitions contained in this section.”

Similar provisions were contained in the following prior authorization acts:

Pub. L. 92-156, title V, §502, Nov. 17, 1971, 85 Stat. 427.  
Pub. L. 91-441, title V, §510, Oct. 7, 1970, 84 Stat. 914.

FEDERAL CONTRACT RESEARCH CENTERS; OFFICERS' COMPENSATION; NOTIFICATION TO CONGRESS

Pub. L. 91-121, title IV, §407, Nov. 19, 1969, 83 Stat. 208, related to restrictions on use of appropriations for compensation of officers and employees of Federal contract research centers, and notice requirements respecting such payments, prior to repeal by Pub. L. 96-107, title VIII, §819(c), Nov. 9, 1979, 93 Stat. 819. See section 2359 of this title.

**§ 2358a. Authorities for certain positions at science and technology reinvention laboratories**

(a) AUTHORITY TO MAKE DIRECT APPOINTMENTS.—

(1) CANDIDATES FOR SCIENTIFIC AND ENGINEERING POSITIONS AT SCIENCE AND TECHNOLOGY REINVENTION LABORATORIES.—The director of any Science and Technology Reinvention Laboratory (hereinafter in this section referred to as an “STRL”) may appoint qualified candidates

possessing a bachelor's degree to positions described in paragraph (1) of subsection (b) as an employee in a laboratory described in that paragraph without regard to the provisions of subchapter I of chapter 33 of title 5 (other than sections 3303 and 3328 of such title).

(2) VETERAN CANDIDATES FOR SIMILAR POSITIONS AT RESEARCH AND ENGINEERING FACILITIES.—The director of any STRL may appoint qualified veteran candidates to positions described in paragraph (2) of subsection (b) as an employee at a laboratory, agency, or organization specified in that paragraph without regard to the provisions of subchapter I of chapter 33 of title 5.

(3) STUDENTS ENROLLED IN SCIENTIFIC AND ENGINEERING PROGRAMS.—The director of any STRL may appoint qualified candidates enrolled in a program of undergraduate or graduate instruction leading to a bachelor's or an advanced degree in a scientific, technical, engineering or mathematical course of study at an institution of higher education (as that term is defined in sections 101 and 102 of the Higher Education Act of 1965 (20 U.S.C. 1001, 1002)) to positions described in paragraph (3) of subsection (b) as an employee in a laboratory described in that paragraph without regard to the provisions of subchapter I of chapter 33 of title 5 (other than sections 3303 and 3328 of such title).

(4) NONCOMPETITIVE CONVERSION OF APPOINTMENTS.—With respect to any student appointed by the director of an STRL under paragraph (3) to a temporary or term appointment, upon graduation from the applicable institution of higher education (as defined in such paragraph), the director may non-competitively convert such student to another temporary appointment or to a term or permanent appointment within the STRL without regard to the provisions of subchapter I of chapter 33 of title 5 (other than sections 3303 and 3328 of such title), provided the student meets all eligibility and Office of Personnel Management qualification requirements for the position.

(b) COVERED POSITIONS.—

(1) CANDIDATES FOR SCIENTIFIC AND ENGINEERING POSITIONS.—The positions described in this paragraph are scientific and engineering positions that may be temporary, term, or permanent in any laboratory designated by section 1105(a) of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84; 10 U.S.C. 2358 note) as a Department of Defense science and technology reinvention laboratory.

(2) QUALIFIED VETERAN CANDIDATES.—The positions described in this paragraph are scientific, technical, engineering, and mathematics positions, including technicians, in the following:

(A) Any laboratory referred to in paragraph (1).

(B) Any other Department of Defense research and engineering agency or organization designated by the Secretary for purposes of subsection (a)(2).

(3) CANDIDATES ENROLLED IN SCIENTIFIC AND ENGINEERING PROGRAMS.—The positions de-