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114TH CONGRESS
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H. R. 3578

[Report No. 114-372]

To amend the Homeland Security Act of 2002 to strengthen and make improvements to the Directorate of Science and Technology of the Department of Homeland Security, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 18, 2015

Mr. RATCLIFFE (for himself and Mr. RICHMOND) introduced the following bill;
which was referred to the Committee on Homeland Security

DECEMBER 8, 2015

Additional sponsor: Mr. MCCAUL

DECEMBER 8, 2015

Reported with an amendment, committed to the Committee of the Whole
House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in *italie*]

[For text of introduced bill, see copy of bill as introduced on September 18, 2015]

A BILL

To amend the Homeland Security Act of 2002 to strengthen and make improvements to the Directorate of Science and Technology of the Department of Homeland Security, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 *This Act may be cited as the “DHS Science and Tech-*
5 *nology Reform and Improvement Act of 2015”.*

6 **SEC. 2. SCIENCE AND TECHNOLOGY IN SUPPORT OF HOME-**
7 **LAND SECURITY.**

8 *(a) IN GENERAL.—Title III of the Homeland Security*
9 *Act of 2002 is amended—*

10 *(1) in section 301 (6 U.S.C. 181)—*

11 *(A) by striking “There” and inserting the*
12 *following:*

13 *“(a) IN GENERAL.—There”; and*

14 *(B) by adding at the end the following new*
15 *subsection:*

16 *“(b) MISSION.—The Directorate of Science and Tech-*
17 *nology shall be the primary research, development, testing,*
18 *and evaluation arm of the Department, responsible for co-*
19 *ordinating the research, development, testing, and evalua-*
20 *tion of the Department to strengthen the security and resil-*
21 *ency of the United States. The Directorate shall—*

22 *“(1) develop and deliver knowledge, analyses,*
23 *and innovative solutions that are responsive to home-*
24 *land security capability gaps identified by compo-*
25 *nents and offices of the Department, the first re-*

1 *sponder community, and the Homeland Security En-*
2 *terprise (as such term is defined in section 322) and*
3 *that can be integrated into operations of the Depart-*
4 *ment;*

5 *“(2) seek innovative, system-based solutions to*
6 *complex homeland security problems; and*

7 *“(3) build partnerships and leverage technology*
8 *solutions developed by other Federal agencies and lab-*
9 *oratories, State, local, and tribal governments, uni-*
10 *versities, and the private sector.”;*

11 *(2) in section 302 (6 U.S.C. 182)—*

12 *(A) in the matter preceding paragraph (1),*
13 *by striking “The Secretary, acting through the*
14 *Under Secretary for Science and Technology,*
15 *shall” and inserting the following:*

16 *“(a) IN GENERAL.—The Secretary, acting through the*
17 *Under Secretary for Science and Technology, shall carry*
18 *out the mission described in subsection (b) of section 301*
19 *and shall”;*

20 *(B) in subsection (a), as so designated by*
21 *subparagraph (A) of this paragraph—*

22 *(i) in paragraph (1), by inserting*
23 *“and serving as the senior scientific advisor*
24 *to the Secretary” before the semicolon at the*
25 *end;*

1 (ii) in paragraph (2)—

2 (I) by striking “national”;

3 (II) by striking “biological,,” and
4 inserting “biological,”; and

5 (III) by inserting “that may serve
6 as a basis of a national strategy” after
7 “terrorist threats”;

8 (iii) in paragraph (3), by striking “the
9 Under Secretary for Intelligence and Anal-
10 ysis and the Assistant Secretary for Infra-
11 structure Protection” and inserting “compo-
12 nents and offices of the Department”;

13 (iv) in paragraph (4), by striking “ex-
14 cept that such responsibility does not extend
15 to human health-related research and devel-
16 opment activities” and inserting the fol-
17 lowing: “including coordinating with rel-
18 evant components and offices of the Depart-
19 ment appropriate to—

20 “(A) identify and prioritize technical capa-
21 bility requirements and create solutions that in-
22 clude researchers, the private sector, and oper-
23 ational end users, and

24 “(B) develop capabilities to address issues
25 on research, development, testing, evaluation,

1 *technology, and standards for the first responder*
2 *community,*
3 *except that such responsibility does not extend to the*
4 *human health-related research and development ac-*
5 *tivities”.*

6 *(v) in paragraph (5)(A), by striking*
7 *“biological,,” and inserting “biological,;”*

8 *(vi) by amending paragraph (12) to*
9 *read as follows:*

10 *“(12) coordinating and integrating all research,*
11 *development, demonstration, testing, and evaluation*
12 *activities of the Department, including through a cen-*
13 *tralized Federal clearinghouse established pursuant to*
14 *paragraph (1) of section 313(b) for information relat-*
15 *ing to technologies that would further the mission of*
16 *the Department, and providing advice, as necessary,*
17 *regarding major acquisition programs;”.*

18 *(vii) in paragraph (13), by striking*
19 *“and” at the end;*

20 *(viii) in paragraph (14), by striking*
21 *the period at the end and inserting a semi-*
22 *colon; and*

23 *(ix) by adding at the end the following*
24 *new paragraphs:*

25 *“(15) establishing a process that—*

1 “(A) includes consideration by Directorate
2 leadership, senior component leadership, first re-
3 sponders, and outside expertise;

4 “(B) is strategic, transparent, and repeat-
5 able with a goal of continuous improvement;

6 “(C) through which research and develop-
7 ment projects undertaken by the Directorate are
8 assessed on a regular basis; and

9 “(D) includes consideration of metrics to
10 ensure research and development projects meet
11 Directorate and Department goals and inform
12 departmental budget and program planning;

13 “(16) developing and overseeing the administra-
14 tion of guidelines for periodic external review of de-
15 partmental research and development programs or ac-
16 tivities, including through—

17 “(A) consultation with experts, including
18 scientists and practitioners, regarding the re-
19 search and development activities conducted by
20 the Directorate of Science and Technology; and

21 “(B) biennial independent, external re-
22 view—

23 “(i) initially at the division level; or

1 “(ii) when divisions conduct multiple
2 programs focused on significantly different
3 subjects, at the program level;

4 “(17) partnering with components and offices of
5 the Department to develop and deliver knowledge,
6 analyses, and innovative solutions that are responsive
7 to identified homeland security capability gaps and
8 raise the science-based, analytic capability and ca-
9 pacity of appropriate individuals throughout the De-
10 partment by providing guidance on how to better
11 identify homeland security capability gaps that may
12 be addressed through a technological solution and by
13 partnering with such components and offices to—

14 “(A) support technological assessments of
15 major acquisition programs throughout the ac-
16 quisition lifecycle;

17 “(B) help define appropriate technological
18 requirements and perform feasibility analysis;

19 “(C) assist in evaluating new and emerging
20 technologies against capability gaps;

21 “(D) support evaluation of alternatives;

22 “(E) improve the use of technology Depart-
23 ment-wide; and

1 “(F) provide technical assistance in the de-
2 velopment of acquisition lifecycle cost for tech-
3 nologies;

4 “(18) acting as a coordinating office for tech-
5 nology development for the Department by helping
6 components and offices define technological require-
7 ments, and building partnerships with appropriate
8 entities (such as within the Department and with
9 other Federal agencies and laboratories, State, local,
10 and tribal governments, universities, and the private
11 sector) to help each such component and office attain
12 the technology solutions it needs; and

13 “(19) coordinating with organizations that pro-
14 vide venture capital to businesses, particularly small
15 businesses, as appropriate, to assist in the commer-
16 cialization of innovative homeland security tech-
17 nologies that are expected to be ready for commer-
18 cialization in the near term and within 36 months.”;
19 and

20 (C) by adding at the end the following new
21 subsection:

22 “(b) REVIEW OF RESPONSIBILITIES.—Not later than
23 180 days after the date of the enactment of this subsection,
24 the Under Secretary for Science and Technology shall sub-
25 mit to the appropriate congressional committees a report

1 *on the implementation of paragraphs (2) (including how*
2 *the policy and strategic plan under such paragraph may*
3 *serve as a basis for a national strategy referred to in such*
4 *paragraph), (11), (12), (13), (16), and (17) of subsection*
5 *(a).”;*

6 *(3) in section 303(1) (6 U.S.C. 183(1)), by strik-*
7 *ing subparagraph (F);*

8 *(4) in section 305 (6 U.S.C. 185)—*

9 *(A) by striking “The” and inserting the fol-*
10 *lowing:*

11 *“(a) ESTABLISHMENT.—The”; and*

12 *(B) by adding at the end the following new*
13 *subsection:*

14 *“(b) CONFLICTS OF INTEREST.—The Secretary shall*
15 *review and revise, as appropriate, the policies of the De-*
16 *partment relating to personnel conflicts of interest to ensure*
17 *that such policies specifically address employees of federally*
18 *funded research and development centers established pursu-*
19 *ant to subsection (a) who are in a position to make or mate-*
20 *rially influence research findings or agency decision mak-*
21 *ing.”;*

22 *(5) in section 306 (6 U.S.C. 186)—*

23 *(A) in subsection (c), by adding at the end*
24 *the following new sentence: “If such regulations*
25 *are issued, the Under Secretary shall report to*

1 *the appropriate congressional committees prior*
2 *to such issuance.”; and*

3 *(B) by amending subsection (d) to read as*
4 *follows:*

5 “(d) *PERSONNEL.—In hiring personnel for the Direc-*
6 *torate of Science and Technology, the Secretary shall have*
7 *the hiring and management authorities described in section*
8 *1101 of the Strom Thurmond National Defense Authoriza-*
9 *tion Act for Fiscal Year 1999 (5 U.S.C. 3104 note; Public*
10 *Law 105–261). The term of appointments for employees*
11 *under subsection (c)(1) of such section may not exceed five*
12 *years before the granting of any extension under subsection*
13 *(c)(2) of such section.”;*

14 *(6) in section 308 (6 U.S.C. 188)—*

15 *(A) in subsection (b)(2)—*

16 *(i) in subparagraph (B)—*

17 *(I) in clause (iv), by striking*
18 *“and nuclear countermeasures or detec-*
19 *tion” and inserting “nuclear, and ex-*
20 *plosives countermeasures or detection*
21 *(which may include research into re-*
22 *mote sensing and remote imaging)”;*
23 *and*

24 *(II) by adding after clause (xiv)*
25 *the following new clause:*

1 “(xv) *Cybersecurity.*”; and
2 (ii) by amending subparagraph (D) to
3 read as follows:

4 “(D) *ANNUAL REPORT TO CONGRESS.*—Not
5 later than one year after the date of the enact-
6 ment of this subparagraph and annually there-
7 after, the Secretary shall submit to Congress a
8 report on the implementation of this section.
9 Each such report shall—

10 “(i) indicate which center or centers
11 have been designated pursuant to this sec-
12 tion;

13 “(ii) describe how such designation or
14 designations enhance homeland security;

15 “(iii) provide information on any deci-
16 sions to revoke or modify such designation
17 or designations;

18 “(iv) describe research that has been
19 tasked and completed by each center that
20 has been designated during the preceding
21 year;

22 “(v) describe funding provided by the
23 Secretary for each center under clause (iv)
24 for that year; and

1 “(vi) describe plans for utilization of
2 each center or centers in the forthcoming
3 year.”; and

4 (B) by adding at the end the following new
5 subsection:

6 “(d) *TEST, EVALUATION, AND STANDARDS DIVI-*
7 *SION.—*

8 “(1) *ESTABLISHMENT.—There is established in*
9 *the Directorate of Science and Technology a Test,*
10 *Evaluation, and Standards Division.*

11 “(2) *DIRECTOR.—The Test, Evaluation, and*
12 *Standards Division shall be headed by a Director of*
13 *Test, Evaluation, and Standards, who shall be ap-*
14 *pointed by the Secretary and report to the Under Sec-*
15 *retary for Science and Technology.*

16 “(3) *RESPONSIBILITIES, AUTHORITIES, AND*
17 *FUNCTIONS.—The Director of Test, Evaluation, and*
18 *Standards—*

19 “(A) through the Under Secretary for
20 Science and Technology, serve as an adviser to
21 the Secretary and the Under Secretary of Man-
22 agement on all test and evaluation or standards
23 activities in the Department; and

24 “(B) shall—

1 “(i) establish and update as necessary
2 test and evaluation policies for the Depart-
3 ment, including policies to ensure that oper-
4 ational testing is done at facilities that al-
5 ready have relevant and appropriate safety
6 and material certifications to the extent
7 such facilities are available;

8 “(ii) oversee and ensure that adequate
9 test and evaluation activities are planned
10 and conducted by or on behalf of compo-
11 nents and offices of the Department with re-
12 spect to major acquisition programs of the
13 Department, as designated by the Secretary,
14 based on risk, acquisition level, novelty,
15 complexity, and size of any such acquisition
16 program, or as otherwise established in stat-
17 ute;

18 “(iii) review major acquisition pro-
19 gram test reports and test data to assess the
20 adequacy of test and evaluation activities
21 conducted by or on behalf of components
22 and offices of the Department, including
23 test and evaluation activities planned or
24 conducted pursuant to clause (ii); and

1 “(iv) review available test and evalua-
2 tion infrastructure to determine whether the
3 Department has adequate resources to carry
4 out its testing and evaluation responsibil-
5 ities, as established under this title.

6 “(4) *LIMITATION.*—*The Test, Evaluation, and*
7 *Standards Division is not required to carry out oper-*
8 *ational testing of major acquisition programs.*

9 “(5) *EVALUATION OF DEPARTMENT OF DEFENSE*
10 *TECHNOLOGIES.*—*The Director of Test, Evaluation,*
11 *and Standards may evaluate technologies currently in*
12 *use or being developed by the Department of Defense*
13 *to assess whether such technologies can be leveraged to*
14 *address homeland security capability gaps.”;*

15 (7) in section 309(a) (6 U.S.C. 189(a)), by add-
16 ing at the end the following new paragraph:

17 “(3) *TREATMENT OF CERTAIN FUNDS.*—*Notwith-*
18 *standing any other provision of law, any funds pro-*
19 *vided to a Department of Energy national laboratory*
20 *by the Department may not be treated as an assisted*
21 *acquisition.”;*

22 (8) in section 310 (6 U.S.C. 190), by adding at
23 the end the following new subsection:

24 “(e) *SUCCESSOR FACILITY.*—*Any successor facility to*
25 *the Plum Island Animal Disease Center, including the Na-*

1 *tional Bio and Agro-Defense Facility (NBAF) under con-*
 2 *struction as of the date of the enactment of this subsection,*
 3 *which is intended to the replace the Plum Island Animal*
 4 *Disease Center shall be subject to the requirements of this*
 5 *section in the same manner and to the same extent as the*
 6 *Plum Island Animal Disease Center under this section.”;*

7 (9) *in section 311 (6 U.S.C. 191)—*

8 (A) *in subsection (b)—*

9 (i) *in paragraph (1), in the first sen-*
 10 *tence—*

11 (I) *by striking “20 members” and*
 12 *inserting “not fewer than 15 members*
 13 *and not more than 30 members”;* and

14 (II) *by inserting “academia, na-*
 15 *tional labs, private industry, and”*
 16 *after “representatives of”;*

17 (ii) *by redesignating paragraph (2) as*
 18 *paragraph (3); and*

19 (iii) *by inserting after paragraph (1)*
 20 *the following new paragraph:*

21 “(2) *SUBCOMMITTEES.—The Advisory Com-*
 22 *mittee may establish subcommittees that focus on re-*
 23 *search and development challenges, as appropriate.”;*

24 (B) *in subsection (c)—*

1 (i) in paragraph (1), by inserting “on
2 a rotating basis” before the period at the
3 end;

4 (ii) by striking paragraph (2) and re-
5 designating paragraph (3) as paragraph
6 (2); and

7 (iii) in paragraph (2), as so redesign-
8 ated, by striking “be appointed” and in-
9 serting “serve”;

10 (C) in subsection (e), in the second sentence,
11 by striking “the call of”;

12 (D) in subsection (h)—

13 (i) in paragraph (1)—

14 (I) in the first sentence—

15 (aa) by striking “render”
16 and inserting “submit”; and

17 (bb) by striking “Congress”
18 and inserting “the appropriate
19 congressional committees”;

20 (II) in the second sentence, by in-
21 serting “, and incorporate the findings
22 and recommendations of the Advisory
23 Committee subcommittees,” before
24 “during”; and

25 (ii) in paragraph (2)—

1 (I) striking “render” and insert-
2 ing “submit”; and

3 (II) by striking “Congress” and
4 inserting “the appropriate congress-
5 sional committees”;

6 (E) in subsection (i), by inserting before the
7 period at the end the following: “, except that the
8 Advisory Committee shall file a charter with
9 Congress every two years in accordance with
10 subsection (b)(2) of such section 14”;

11 (F) in subsection (j), by striking “2008”
12 and inserting “2020”;

13 (10) in section 313 (6 U.S.C. 193)—

14 (A) by redesignating subsection (e) as sub-
15 section (d); and

16 (B) by inserting after subsection (b) the fol-
17 lowing new subsection:

18 “(c) *APPLICATION OF PROGRAM.*—*The Secretary, act-*
19 *ing through the Under Secretary for Science and Tech-*
20 *nology, shall use the program established under subsection*
21 *(a) to—*

22 “(1) *enhance the cooperation between components*
23 *and offices of the Department on projects that have*
24 *similar goals, timelines, or outcomes;*

1 “(2) ensure the coordination of technologies to
2 eliminate unnecessary duplication of research and de-
3 velopment;

4 “(3) ensure technologies are accessible for compo-
5 nent and office use on a Department website; and

6 “(4) carry out any additional purpose the Sec-
7 retary determines necessary.”;

8 (11) by adding after section 317 (6 U.S.C. 195c)
9 the following new sections:

10 **“SEC. 318. IDENTIFICATION AND PRIORITIZATION OF RE-**
11 **SEARCH AND DEVELOPMENT.**

12 “(a) *IN GENERAL.*—Not later than 180 days after the
13 date of the enactment of this section, the Under Secretary
14 for Science and Technology shall establish a process to de-
15 fine, identify, prioritize, fund, and task the basic and ap-
16 plied homeland security research and development activities
17 of the Directorate of Science and Technology to meet the
18 needs of the components and offices of the Department, the
19 first responder community, and the Homeland Security
20 Enterprise (as such term is defined in section 322).

21 “(b) *PROCESS.*—The process established under sub-
22 section (a) shall—

23 “(1) be responsive to near-, mid-, and long-term
24 needs, including unanticipated needs to address
25 emerging threats;

1 “(2) utilize gap analysis and risk assessment
2 tools where available and applicable;

3 “(3) include protocols to assess—

4 “(A) off-the-shelf technology to determine if
5 an identified homeland security capability gap
6 can be addressed through the acquisition process
7 instead of commencing research and development
8 of technology to address such capability gap; and

9 “(B) communication and collaboration for
10 research and development activities pursued by
11 other executive agencies, to determine if tech-
12 nology can be leveraged to identify and address
13 homeland security capability gaps and avoid un-
14 necessary duplication of efforts;

15 “(4) provide for documented and validated re-
16 search and development requirements;

17 “(5) strengthen first responder participation to
18 identify and prioritize homeland security techno-
19 logical gaps, including by—

20 “(A) soliciting feedback from appropriate
21 national associations and advisory groups rep-
22 resenting the first responder community and
23 first responders within the components and of-
24 fices of the Department; and

1 “(B) establishing and promoting a publicly
2 accessible portal to allow the first responder com-
3 munity to help the Directorate of Science and
4 Technology develop homeland security research
5 and development goals;

6 “(6) institute a mechanism to publicize the De-
7 partment’s homeland security technology priorities for
8 the purpose of informing Federal, State, and local
9 governments, first responders, and the private sector;

10 “(7) establish considerations to be used by the
11 Directorate in selecting appropriate research entities,
12 including the national laboratories, federally funded
13 research and development centers, university-based
14 centers, and the private sector, to carry out research
15 and development requirements;

16 “(8) incorporate feedback derived as a result of
17 the mechanism established in section 323, ensuring
18 the Directorate is utilizing regular communication
19 with components and offices of the Department; and

20 “(9) include any other criteria or measures the
21 Under Secretary for Science and Technology considers
22 necessary for the identification and prioritization of
23 research requirements.

1 **“SEC. 319. DEVELOPMENT OF DIRECTORATE STRATEGY AND**
2 **RESEARCH AND DEVELOPMENT PLAN.**

3 “(a) *STRATEGY.*—

4 “(1) *IN GENERAL.*—Not later than one year after
5 the date of the enactment of this section, the Under
6 Secretary for Science and Technology shall develop
7 and submit to the appropriate congressional commit-
8 tees a strategy to guide the activities of the Direc-
9 torate of Science and Technology. Such strategy shall
10 be updated at least once every five years and shall
11 identify priorities and objectives for the development
12 of science and technology solutions and capabilities
13 addressing homeland security operational needs. Such
14 strategy shall include the coordination of such prior-
15 ities and activities within the Department. Such
16 strategy shall take into account the priorities and
17 needs of stakeholders in the Homeland Security En-
18 terprise (as such term is defined in section 322). In
19 developing such strategy, efforts shall be made to sup-
20 port collaboration and avoid unnecessary duplication
21 across the Federal Government. Such strategy shall be
22 risk-based and aligned with other strategic guidance
23 provided by—

24 “(A) *the National Strategy for Homeland*
25 *Security;*

1 “(B) *the Quadrennial Homeland Security*
2 *Review; and*

3 “(C) *any other relevant strategic planning*
4 *documents, as determined by the Under Sec-*
5 *retary.*

6 “(2) *CONTENTS.—The strategy required under*
7 *paragraph (1) shall be prepared in accordance with*
8 *applicable Federal requirements and guidelines, and*
9 *shall include the following:*

10 “(A) *An identification of the long-term stra-*
11 *tegic goals, objectives, and metrics of the Direc-*
12 *torate.*

13 “(B) *A technology transition strategy for*
14 *the programs of the Directorate.*

15 “(C) *Short- and long-term strategic goals,*
16 *and objectives for increasing the number of des-*
17 *ignations and certificates issued under subtitle G*
18 *of title VIII, including cybersecurity technologies*
19 *that could significantly reduce, or mitigate the*
20 *effects of, cybersecurity risks (as such term is de-*
21 *finied in subsection (a)(1) of the second section*
22 *226, relating to the national cybersecurity and*
23 *communications integration center), without*
24 *compromising the quality of the evaluation of*

1 *applications for such designations and certifi-*
2 *cates.*

3 “(b) *FIVE-YEAR RESEARCH AND DEVELOPMENT*
4 *PLAN.—*

5 “(1) *IN GENERAL.—The Under Secretary for*
6 *Science and Technology shall develop, and update at*
7 *least once every five years, a five-year research and*
8 *development plan for the activities of the Directorate*
9 *of Science and Technology. The Under Secretary shall*
10 *develop the first such plan by the date that is not*
11 *later than one year after the date of the enactment of*
12 *this section.*

13 “(2) *CONTENTS.—Each five-year research and*
14 *development plan developed and revised under sub-*
15 *section (a) shall—*

16 “(A) *define the Directorate of Science and*
17 *Technology’s research, development, testing, and*
18 *evaluation activities, priorities, performance*
19 *metrics, and key milestones and deliverables for,*
20 *as the case may be, the five-fiscal-year period*
21 *from 2016 through 2020, and for each five-fiscal-*
22 *year period thereafter;*

23 “(B) *describe, for the activities of the strat-*
24 *egy developed under subsection (a), the planned*
25 *annual funding levels for the period covered by*

1 *each such five-year research and development*
2 *plan;*

3 “(C) *indicate joint investments with other*
4 *Federal partners where applicable, and enhanced*
5 *coordination with organizations as specified in*
6 *paragraph (19) of section 302, as appropriate;*

7 “(D) *analyze how the research programs of*
8 *the Directorate support achievement of the stra-*
9 *tegic goals and objectives identified in the strat-*
10 *egy required under subsection (a);*

11 “(E) *describe how the activities and pro-*
12 *grams of the Directorate meet the requirements*
13 *or homeland security capability gaps identified*
14 *by customers within and outside of the Depart-*
15 *ment, including the first responder community;*
16 *and*

17 “(F) *describe the policies of the Directorate*
18 *regarding the management, organization, and*
19 *personnel of the Directorate.*

20 “(3) *SCOPE.—The Under Secretary for Science*
21 *and Technology shall ensure that each five-year re-*
22 *search and development plan developed and revised*
23 *under subsection (a)—*

24 “(A) *reflects input from a wide range of*
25 *stakeholders; and*

1 “(B) takes into account how research and
2 development by other Federal, State, private sec-
3 tor, and nonprofit institutions contributes to the
4 achievement of the priorities identified in each
5 plan, and avoids unnecessary duplication with
6 such efforts.

7 “(4) REPORTS.—At the time the President sub-
8 mits each annual budget request under section
9 1105(a) of title 31, United States Code, the Under
10 Secretary for Science and Technology shall submit to
11 the appropriate congressional committees a report on
12 the status and results to date of implementation of the
13 current five-year research and development plan, in-
14 cluding—

15 “(A) a summary of the research and devel-
16 opment activities for the previous fiscal year in
17 each topic area, including such activities to ad-
18 dress homeland security risks, including threats,
19 vulnerabilities, and consequences, and a sum-
20 mary of the coordination activities undertaken
21 by the Directorate of Science and Technology for
22 components and offices of the Department, to-
23 gether with the results of the process specified in
24 paragraph (15) of section 302;

1 “(B) clear links between the Directorate’s
2 budget and each topic area or program, includ-
3 ing those topic areas or programs to address
4 homeland security risks, including threats,
5 vulnerabilities, and consequences, specifying
6 which topic areas or programs fall under which
7 budget lines, and clear links between Directorate
8 coordination work and priorities and annual ex-
9 penditures for such work and priorities, includ-
10 ing joint investments with other Federal part-
11 ners, where applicable;

12 “(C) an assessment of progress of the re-
13 search and development activities based on the
14 performance metrics and milestones set forth in
15 such plan; and

16 “(D) any changes to such plan.

17 **“SEC. 320. MONITORING OF PROGRESS.**

18 “(a) *IN GENERAL.*—The Under Secretary for Science
19 and Technology shall establish and utilize a system to track
20 the progress of the research, development, testing, and eval-
21 uation activities undertaken by the Directorate of Science
22 and Technology, and shall provide to the appropriate con-
23 gressional committees and customers of such activities, at
24 a minimum on a biannual basis, regular updates on such
25 progress.

1 “(b) *REQUIREMENTS.*—*In order to provide the*
2 *progress updates required under subsection (a), the Under*
3 *Secretary for Science and Technology shall develop a system*
4 *that—*

5 “(1) *monitors progress toward project milestones*
6 *identified by the Under Secretary;*

7 “(2) *maps progress toward deliverables identified*
8 *in each five-year research and development plan re-*
9 *quired under section 319(b);*

10 “(3) *generates up-to-date reports to customers*
11 *that transparently disclose the status and progress of*
12 *research, development, testing, and evaluation efforts*
13 *of the Directorate of Science and Technology; and*

14 “(4) *allows the Under Secretary to report the*
15 *number of products and services developed by the Di-*
16 *rectorate that have been transitioned into acquisition*
17 *programs and resulted in successfully fielded tech-*
18 *nologies.*

19 “(c) *EVALUATION METHODS.*—

20 “(1) *EXTERNAL INPUT, CONSULTATION, AND RE-*
21 *VIEW.*—*The Under Secretary for Science and Tech-*
22 *nology shall implement procedures to engage outside*
23 *experts to assist in the evaluation of the progress of*
24 *research, development, testing, and evaluation activi-*

1 *ties of the Directorate of Science and Technology, in-*
2 *cluding through—*

3 *“(A) consultation with experts, including*
4 *scientists and practitioners, to gather inde-*
5 *pendent expert peer opinion and advice on a*
6 *project or on specific issues or analyses con-*
7 *ducted by the Directorate; and*

8 *“(B) periodic, independent, external review*
9 *to assess the quality and relevance of the Direc-*
10 *torate’s programs and projects.*

11 *“(2) COMPONENT FEEDBACK.—The Under Sec-*
12 *retary for Science and Technology shall establish a*
13 *formal process to collect feedback from customers of*
14 *the Directorate of Science and Technology on the per-*
15 *formance of the Directorate that includes—*

16 *“(A) appropriate methodologies through*
17 *which the Directorate can assess the quality and*
18 *usefulness of technology and services delivered by*
19 *the Directorate;*

20 *“(B) development of metrics for measuring*
21 *the usefulness of any technology or service pro-*
22 *vided by the Directorate; and*

23 *“(C) standards for high-quality customer*
24 *service.*

1 **“SEC. 321. HOMELAND SECURITY SCIENCE AND TECH-**
2 **NOLOGY FELLOWS PROGRAM.**

3 “(a) *ESTABLISHMENT.*—*The Secretary, acting through*
4 *the Under Secretary for Science and Technology and the*
5 *Under Secretary for Management, shall establish a fellows*
6 *program, to be known as the Homeland Security Science*
7 *and Technology Fellows Program (in this section referred*
8 *to as the ‘Program’), under which the Under Secretary for*
9 *Science and Technology, in coordination with the Office of*
10 *University Programs of the Department, shall facilitate the*
11 *placement of fellows in relevant scientific or technological*
12 *fields for up to two years in components and offices of the*
13 *Department with a need for scientific and technological ex-*
14 *pertise.*

15 “(b) *UTILIZATION OF FELLOWS.*—

16 “(1) *IN GENERAL.*—*Under the Program, the De-*
17 *partment may employ fellows—*

18 “(A) *for the use of the Directorate of Science*
19 *and Technology; or*

20 “(B) *for the use of a component or office of*
21 *the Department outside the Directorate, under a*
22 *memorandum of agreement with the head of such*
23 *a component or office under which such compo-*
24 *nent or office will reimburse the Directorate for*
25 *the costs of such employment.*

1 “(2) *RESPONSIBILITIES.*—*Under an agreement*
2 *referred to in subparagraph (B) of paragraph (1)—*

3 “(A) *the Under Secretary for Science and*
4 *Technology and the Under Secretary for Manage-*
5 *ment shall—*

6 “(i) *solicit and accept applications*
7 *from individuals who are currently enrolled*
8 *in or who are graduates of postgraduate*
9 *programs in scientific and engineering*
10 *fields related to the promotion of securing*
11 *the homeland or critical infrastructure sec-*
12 *tors;*

13 “(ii) *screen applicants and interview*
14 *them as appropriate to ensure that such ap-*
15 *plicants possess the appropriate level of sci-*
16 *entific and engineering expertise and quali-*
17 *fications;*

18 “(iii) *provide a list of qualified appli-*
19 *cants to the heads of components and offices*
20 *of the Department seeking to utilize quali-*
21 *fied fellows;*

22 “(iv) *subject to the availability of ap-*
23 *propriations, pay financial compensation to*
24 *such fellows;*

1 “(v) coordinate with the Chief Security
2 Officer to facilitate and expedite provision
3 of security and suitability clearances to
4 such fellows, as appropriate; and

5 “(vi) otherwise administer all aspects
6 of the employment of such fellows with the
7 Department; and

8 “(B) the head of the component or office of
9 the Department utilizing a fellow shall—

10 “(i) select such fellow from the list of
11 qualified applicants provided by the Under
12 Secretary;

13 “(ii) reimburse the Under Secretary
14 for the costs of employing such fellow, in-
15 cluding administrative costs; and

16 “(iii) be responsible for the day-to-day
17 management of such fellow.

18 “(c) *APPLICATIONS FROM NONPROFIT ORGANIZA-*
19 *TIONS.—The Under Secretary for Science and Technology*
20 *may accept an application under subsection (b)(2)(A) that*
21 *is submitted by a nonprofit organization on behalf of indi-*
22 *viduals whom such nonprofit organization has determined*
23 *may be qualified applicants under the Program.*

1 **“SEC. 322. CYBERSECURITY RESEARCH AND DEVELOPMENT.**

2 “(a) *IN GENERAL.*—*The Under Secretary for Science*
3 *and Technology shall support research, development, test-*
4 *ing, evaluation, and transition of cybersecurity technology,*
5 *including fundamental research to improve the sharing of*
6 *information, analytics, and methodologies related to cyber-*
7 *security risks and incidents, consistent with current law.*

8 “(b) *ACTIVITIES.*—*The research and development sup-*
9 *ported under subsection (a) shall serve the components of*
10 *the Department and shall—*

11 “(1) *advance the development and accelerate the*
12 *deployment of more secure information systems;*

13 “(2) *improve and create technologies for detect-*
14 *ing attacks or intrusions, including real-time contin-*
15 *uous diagnostics and real-time analytic technologies;*

16 “(3) *improve and create mitigation and recovery*
17 *methodologies, including techniques and policies for*
18 *real-time containment of attacks, and development of*
19 *resilient networks and information systems;*

20 “(4) *support, in coordination with private sec-*
21 *tor, the review of source code that underpins critical*
22 *infrastructure information systems;*

23 “(5) *develop and support infrastructure and*
24 *tools to support cybersecurity research and develop-*
25 *ment efforts, including modeling, testbeds, and data*
26 *sets for assessment of new cybersecurity technologies;*

1 “(6) assist the development and support of tech-
2 nologies to reduce vulnerabilities in industrial control
3 systems; and

4 “(7) develop and support cyber forensics and at-
5 tack attribution.

6 “(c) COORDINATION.—In carrying out this section, the
7 Under Secretary for Science and Technology shall coordi-
8 nate activities with—

9 “(1) the Under Secretary appointed pursuant to
10 section 103(a)(1)(H);

11 “(2) the heads of other relevant Federal depart-
12 ments and agencies, including the National Science
13 Foundation, the Defense Advanced Research Projects
14 Agency, the Information Assurance Directorate of the
15 National Security Agency, the National Institute of
16 Standards and Technology, the Department of Com-
17 merce, the Networking and Information Technology
18 Research and Development Program Office, Sector
19 Specific Agencies for critical infrastructure, and other
20 appropriate working groups established by the Presi-
21 dent to identify unmet needs and cooperatively sup-
22 port activities, as appropriate; and

23 “(3) industry and academia.

24 “(d) TRANSITION TO PRACTICE.—The Under Secretary
25 for Science and Technology shall support projects through

1 *the full life cycle of such projects, including research, devel-*
2 *opment, testing, evaluation, pilots, and transitions. The*
3 *Under Secretary shall identify mature technologies that ad-*
4 *dress existing imminent cybersecurity gaps in public or pri-*
5 *vate information systems and networks of information sys-*
6 *tems, identify and support necessary improvements identi-*
7 *fied during pilot programs and testing and evaluation ac-*
8 *tivities, and introduce new cybersecurity technologies*
9 *throughout the Homeland Security Enterprise through*
10 *partnerships and commercialization. The Under Secretary*
11 *shall target federally funded cybersecurity research that*
12 *demonstrates a high probability of successful transition to*
13 *the commercial market within two years and that is ex-*
14 *pected to have notable impact on the cybersecurity of the*
15 *information systems or networks of information systems of*
16 *the United States.*

17 “(e) *DEFINITIONS.—In this section:*

18 “(1) *CYBERSECURITY RISK.—The term ‘cyberse-*
19 *curity risk’ has the meaning given such term in the*
20 *second section 226, relating to the national cybersecur-*
21 *ity and communications integration center.*

22 “(2) *HOMELAND SECURITY ENTERPRISE.—The*
23 *term ‘Homeland Security Enterprise’ means relevant*
24 *governmental and nongovernmental entities involved*
25 *in homeland security, including Federal, State, local,*

1 *and tribal government officials, private sector rep-*
2 *resentatives, academics, and other policy experts.*

3 “(3) *INCIDENT.*—*The term ‘incident’ has the*
4 *meaning given such term in the second section 226,*
5 *relating to the national cybersecurity and commu-*
6 *nications integration center.*

7 “(4) *INFORMATION SYSTEM.*—*The term ‘informa-*
8 *tion system’ has the meaning given that term in sec-*
9 *tion 3502(8) of title 44, United States Code.*

10 **“SEC. 323. INTEGRATED PRODUCT TEAMS.**

11 “(a) *IN GENERAL.*—*The Secretary shall establish inte-*
12 *grated product teams to serve as a central mechanism for*
13 *the Department to identify, coordinate, and align research*
14 *and development efforts with departmental missions. Each*
15 *team shall be managed by the Under Secretary for Science*
16 *and Technology and the relevant senior leadership of oper-*
17 *ational components, and shall be responsible for the fol-*
18 *lowing:*

19 “(1) *Identifying and prioritizing homeland secu-*
20 *urity capability gaps within a specific mission area*
21 *and technological solutions to address such gaps.*

22 “(2) *Identifying ongoing departmental research*
23 *and development activities and component acquisi-*
24 *tions of technologies that are outside of departmental*

1 *research and development activities to address a spe-*
2 *cific mission area.*

3 *“(3) Assessing the appropriateness of a tech-*
4 *nology to address a specific mission area.*

5 *“(4) Identifying unnecessary redundancy in de-*
6 *partmental research and development activities with-*
7 *in a specific mission area.*

8 *“(5) Informing the Secretary and the annual*
9 *budget process regarding whether certain technological*
10 *solutions are able to address homeland security capa-*
11 *bility gaps within a specific mission area.*

12 *“(b) CONGRESSIONAL OVERSIGHT.—Not later than*
13 *two years after the date of enactment of this section, the*
14 *Secretary shall provide to the appropriate congressional*
15 *committees information on the impact and effectiveness of*
16 *the mechanism described in subsection (a) on research and*
17 *development efforts, component relationships, and how the*
18 *process has informed the research and development budget*
19 *and enhanced decision making, including acquisition deci-*
20 *sion making, at the Department. The Secretary shall seek*
21 *feedback from the Under Secretary for Science and Tech-*
22 *nology, Under Secretary for Management, and the senior*
23 *leadership of operational components regarding the impact*
24 *and effectiveness of such mechanism and include such feed-*
25 *back in the information provided under this subsection.*

1 **“SEC. 324. HOMELAND SECURITY-STEM SUMMER INTERN-**
2 **SHIP PROGRAM.**

3 “(a) *IN GENERAL.*—*The Under Secretary for Science*
4 *and Technology shall establish a Homeland Security-STEM*
5 *internship program (in this section referred to as the ‘pro-*
6 *gram’)* to carry out the objectives of this subtitle.

7 “(b) *PROGRAM.*—*The program shall provide students*
8 *with exposure to Department mission-relevant research*
9 *areas to encourage such students to pursue STEM careers*
10 *in homeland security related fields. Internships offered*
11 *under the program shall be for up to ten weeks during the*
12 *summer.*

13 “(c) *ELIGIBILITY.*—*The Under Secretary for Science*
14 *and Technology shall develop criteria for participation in*
15 *the program, including the following:*

16 “(1) *At the time of application, an intern*
17 *shall—*

18 “(A) *have successfully completed not less*
19 *than one academic year of study at an institu-*
20 *tion of higher education in a STEM field;*

21 “(B) *be enrolled in a course of study in a*
22 *STEM field at an institution of higher edu-*
23 *cation; and*

24 “(C) *plan to continue such course of study*
25 *or pursue an additional course of study in a*

1 *STEM field at an institution of higher education*
2 *in the academic year following the internship.*

3 “(2) *An intern shall be pursuing career goals*
4 *aligned with the Department’s mission, goals, and ob-*
5 *jectives.*

6 “(3) *Any other criteria the Under Secretary de-*
7 *termines appropriate.*

8 “(d) *COOPERATION.—The program shall be adminis-*
9 *tered in cooperation with the university-based centers for*
10 *homeland security under section 308. Interns in the pro-*
11 *gram shall be provided hands-on research experience and*
12 *enrichment activities focused on Department research areas.*

13 “(e) *ACADEMIC REQUIREMENTS; OPERATION.—The*
14 *Under Secretary for Science and Technology shall deter-*
15 *mine the academic requirements, other selection criteria,*
16 *and standards for successful completion of each internship*
17 *period in the program. The Under Secretary shall be re-*
18 *sponsible for the design, implementation, and operation of*
19 *the program.*

20 “(f) *RESEARCH MENTORS.—The Under Secretary for*
21 *Science and Technology shall ensure that each intern in the*
22 *program is assigned a research mentor to act as counselor*
23 *and advisor and provide career-focused advice.*

24 “(g) *OUTREACH TO CERTAIN UNDER-REPRESENTED*
25 *STUDENTS.—The Under Secretary for Science and Tech-*

1 *nology shall conduct outreach to students who are members*
 2 *of groups under-represented in STEM careers to encourage*
 3 *their participation in the program.*

4 “(h) *INSTITUTION OF HIGHER EDUCATION DE-*
 5 *FINED.—In this section, the term ‘institution of higher edu-*
 6 *cation’ has the meaning given the term in section 102 of*
 7 *the Higher Education Act of 1965 (20 U.S.C. 1002), except*
 8 *that the term does not include institutions described in sub-*
 9 *paragraph (C) of such section 102(a)(1).”.*

10 (b) *EFFECTIVE DATE.—The amendments made by sub-*
 11 *section (a) shall take effect on the date that is 30 days after*
 12 *the date of the enactment of this section.*

13 (c) *CLERICAL AMENDMENT.—The table of contents in*
 14 *section 1(b) of the Homeland Security Act of 2002 is*
 15 *amended by inserting after the item relating to section 317*
 16 *the following new items:*

“Sec. 318. *Identification and prioritization of research and development.*

“Sec. 319. *Development of Directorate strategy and research and development*
plan.

“Sec. 320. *Monitoring of progress.*

“Sec. 321. *Homeland Security Science and Technology Fellows Program.*

“Sec. 322. *Cybersecurity research and development.*

“Sec. 323. *Integrated product teams.*

“Sec. 324. *Homeland Security-STEM summer internship program.”.*

17 (d) *RESEARCH AND DEVELOPMENT PROJECTS.—Sec-*
 18 *tion 831 of the Homeland Security Act of 2002 (6 U.S.C.*
 19 *391) is amended—*

20 (1) *in subsection (a)—*

1 (A) in the matter preceding paragraph (1),
2 by striking “2015” and inserting “2020”;

3 (B) in paragraph (1), by striking the last
4 sentence; and

5 (C) by adding at the end the following new
6 paragraph:

7 “(3) *PRIOR APPROVAL.*—*In any case in which a*
8 *component or office of the Department seeks to utilize*
9 *the authority under this section, such office or compo-*
10 *nent shall first receive prior approval from the Sec-*
11 *retary by providing to the Secretary a proposal that*
12 *includes the rationale for the use of such authority,*
13 *the funds to be spent on the use of such authority, and*
14 *the expected outcome for each project that is the sub-*
15 *ject of the use of such authority. In such a case, the*
16 *authority for evaluating the proposal may not be dele-*
17 *gated by the Secretary to anyone other than the*
18 *Under Secretary for Management.”;*

19 (2) in subsection (c)—

20 (A) in paragraph (1), in the matter pre-
21 ceding subparagraph (A), by striking “2015”
22 and inserting “2020”; and

23 (B) by amending paragraph (2) to read as
24 follows:

1 “(2) *REPORT.*—*The Secretary shall annually*
2 *submit to the appropriate congressional committees a*
3 *report detailing the projects for which the authority*
4 *granted by subsection (a) was used, the rationale for*
5 *such use, the funds spent using such authority, the ex-*
6 *tent of cost-sharing for such projects among Federal*
7 *and non-federal sources, the extent to which use of*
8 *such authority has addressed a homeland security ca-*
9 *pability gap identified by the Department, the total*
10 *amount of payments, if any, that were received by the*
11 *Federal Government as a result of the use of such au-*
12 *thority during the period covered by each such report,*
13 *the outcome of each project for which such authority*
14 *was used, and the results of any audits of such*
15 *projects.”; and*

16 (3) *by adding at the end the following new sub-*
17 *sections:*

18 “(e) *TRAINING.*—*The Secretary shall develop a train-*
19 *ing program for acquisitions staff in the use of other trans-*
20 *action authority to help ensure the appropriate use of such*
21 *authority.*

22 “(f) *OTHER TRANSACTION AUTHORITY DEFINED.*—*In*
23 *this section, the term ‘other transaction authority’ means*
24 *authority under subsection (a).”.*

1 (e) *AMENDMENT TO DEFINITION.*—Paragraph (2) of
2 subsection (a) of the second section 226 of the Homeland
3 Security Act of 2002 (6 U.S.C. 148; relating to the national
4 cybersecurity and communications integration center) is
5 amended to read as follows:

6 “(2) *INCIDENT.*—The term ‘incident’ means an
7 occurrence that actually or imminently jeopardizes,
8 without lawful authority, the integrity, confiden-
9 tiality, or availability of information on an informa-
10 tion system, or actually or imminently jeopardizes,
11 without lawful authority, an information system.”.

12 (f) *GAO STUDY OF UNIVERSITY-BASED CENTERS.*—

13 (1) *IN GENERAL.*—Not later than 120 days after
14 the date of the enactment of this Act, the Comptroller
15 General of the United States shall initiate a study to
16 assess the university-based centers for homeland secu-
17 rity program authorized by section 308(b)(2) of the
18 Homeland Security Act of 2002 (6 U.S.C. 188(b)(2)),
19 and provide recommendations to the Committee on
20 Homeland Security and the Committee on Science,
21 Space, and Technology of the House of Representa-
22 tives and the Committee on Homeland Security and
23 Governmental Affairs of the Senate for appropriate
24 improvements.

1 (2) *SUBJECT MATTERS.*—*The study required*
2 *under subsection (a) shall include the following:*

3 (A) *A review of the Department of Home-*
4 *land Security’s efforts to identify key areas of*
5 *study needed to support the homeland security*
6 *mission, and criteria that the Department uti-*
7 *lized to determine such key areas for which the*
8 *Department should maintain, establish, or elimi-*
9 *nate university-based centers.*

10 (B) *A review of the method by which uni-*
11 *versity-based centers, federally funded research*
12 *and development centers, and Department of En-*
13 *ergy national laboratories receive tasking from*
14 *the Department of Homeland Security, including*
15 *a review of how university-based research is*
16 *identified, prioritized, and funded.*

17 (C) *A review of selection criteria for desig-*
18 *nating university-based centers and a weighting*
19 *of such criteria.*

20 (D) *An examination of best practices from*
21 *other departments’ and agencies’ efforts to orga-*
22 *nize and use university-based research to support*
23 *their missions.*

24 (E) *A review of the Department of Home-*
25 *land Security’s criteria and metrics to measure*

1 *demonstrable progress achieved by university-*
2 *based centers in fulfilling Department taskings,*
3 *and mechanisms for delivering and dissemi-*
4 *nating the research results of designated univer-*
5 *sity-based centers within the Department and to*
6 *other Federal, State, and local agencies.*

7 *(F) An examination of the means by which*
8 *academic institutions that are not designated or*
9 *associated with the designated university-based*
10 *centers can optimally contribute to the research*
11 *mission of the Directorate of Science and Tech-*
12 *nology of the Department of Homeland Security.*

13 *(G) An assessment of the interrelationship*
14 *between the different university-based centers*
15 *and the degree to which outreach and collabora-*
16 *tion among a diverse array of academic institu-*
17 *tions is encouraged by the Department of Home-*
18 *land Security, particularly with historically*
19 *Black colleges and universities and minority-*
20 *serving institutions.*

21 *(H) A review of any other essential elements*
22 *of the programs determined in the conduct of the*
23 *study.*

24 *(g) PRIZE AUTHORITY.—The Under Secretary for*
25 *Science and Technology of the Department of Homeland Se-*

1 *curity shall utilize, as appropriate, prize authority granted*
2 *pursuant to current law.*

3 *(h) PROHIBITION ON NEW FUNDING.—No funds are*
4 *authorized to be appropriated to carry out this section and*
5 *the amendments made by this section. Such section and*
6 *amendments shall be carried out using amounts otherwise*
7 *appropriated or made available for such purposes.*

Union Calendar No. 284

114TH CONGRESS
1ST Session

H. R. 3578

[Report No. 114-372]

A BILL

To amend the Homeland Security Act of 2002 to strengthen and make improvements to the Directorate of Science and Technology of the Department of Homeland Security, and for other purposes.

DECEMBER 8, 2015

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed