

116<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

# H. R. 4990

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## AN ACT

To direct the National Institute of Standards and Technology and the National Science Foundation to carry out research and other activities to promote the security and modernization of voting systems, 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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Election Technology  
3 Research Act of 2020”.

4 **SEC. 2. NATIONAL INSTITUTE OF STANDARDS AND TECH-**  
5 **NOLOGY.**

6 (a) VOTING SYSTEMS RESEARCH.—The Director of  
7 the National Institute of Standards and Technology, in  
8 collaboration with the National Science Foundation as ap-  
9 propriate, shall carry out a program of research on voting  
10 systems, including—

11 (1) the cybersecurity of different components of  
12 such systems;

13 (2) end-to-end verifiable systems;

14 (3) internet-enabled voting;

15 (4) the accessibility and usability of different  
16 components of such systems;

17 (5) voter privacy and data protection;

18 (6) methods for auditing elections;

19 (7) the interoperability of system technologies;

20 (8) means for providing voters with the ability  
21 to easily check whether a ballot sent by mail has  
22 been dispatched to the voter and whether the voter’s  
23 marked ballot has been received and accepted by the  
24 appropriate election official;

25 (9) the reliability of various approaches to voter  
26 authentication; and

1           (10) such other areas of research as the Direc-  
2           tor of the National Institute of Standards and Tech-  
3           nology determines to be appropriate and related to  
4           the security and integrity of elections for Federal of-  
5           fice.

6           (b) ELECTIONS SYSTEMS CENTER OF EXCEL-  
7           LENCE.—

8           (1) IN GENERAL.—The Director of the National  
9           Institute of Standards and Technology shall make  
10          an award to an institution of higher education or an  
11          eligible nonprofit organization (or a consortium  
12          thereof) to establish a Center of Excellence in Elec-  
13          tion Systems.

14          (2) COLLABORATIONS.—The Director shall en-  
15          sure that the Center of Excellence includes a col-  
16          laboration of institutions of higher education, non-  
17          profit organizations, private sector entities, and  
18          State and local election officials.

19          (3) PURPOSE.—The purpose of the Center of  
20          Excellence shall be to—

21                 (A) conduct measurement research and  
22                 statistical analyses to inform the development  
23                 of standards for technologies and processes that  
24                 contribute to more secure, fair, and accessible  
25                 elections;

1           (B) test and evaluate the security,  
2 usability, and accessibility of the technologies of  
3 voting systems, including the accessibility of  
4 poll book data by voters;

5           (C) research testing methods that could be  
6 used for the certification of voting system tech-  
7 nologies;

8           (D) educate and train students studying in  
9 science, technology, engineering, and mathe-  
10 matics fields to conduct measurement science  
11 and standards research relevant to such sys-  
12 tems; and

13           (E) foster collaboration among academic  
14 researchers, private sector vendors of election  
15 technology, and State and local election offi-  
16 cials.

17           (4) REQUIREMENTS.—

18           (A) IN GENERAL.—An institution of higher  
19 education or an eligible nonprofit organization  
20 (or a consortium thereof) seeking funding under  
21 this subsection shall submit an application to  
22 the Director at such time, in such manner, and  
23 containing such information as the Director  
24 may require.

1 (B) APPLICATIONS.—Each application  
2 under subparagraph (A) shall include a descrip-  
3 tion of—

4 (i) how the Center will work with  
5 other research institutions, industry part-  
6 ners, and State or local election officials to  
7 identify the measurement, testing, and  
8 standards needs of voting systems and to  
9 leverage the expertise of election practi-  
10 tioners; and

11 (ii) how the Center will promote active  
12 collaboration among researchers in mul-  
13 tiple disciplines involved in ensuring the se-  
14 curity and integrity of such systems.

15 (C) SELECTION AND DURATION.—Each  
16 Center established under this section is author-  
17 ized to carry out activities for a period of 5  
18 years, renewable for an additional 5 years at  
19 the discretion of the Director.

20 (e) AUTHORIZATION OF APPROPRIATIONS.—There  
21 are authorized to be appropriated to carry out this section  
22 \$12,000,000 for each of the fiscal years 2021 through  
23 2025.

1 **SEC. 3. NATIONAL SCIENCE FOUNDATION.**

2 (a) RESEARCH GRANTS.—The Director of the Na-  
3 tional Science Foundation, in collaboration with the Na-  
4 tional Institute of Standards and Technology and other  
5 relevant agencies, as appropriate, shall award basic re-  
6 search grants to increase the understanding of cyber and  
7 other threats to voting systems and to inform the develop-  
8 ment of technologies, processes, and policies that con-  
9 tribute to more secure, fair, and accessible elections, in-  
10 cluding research on—

11 (1) the cybersecurity of different components of  
12 such systems;

13 (2) end-to-end verifiable systems;

14 (3) the risks and benefits of internet-enabled  
15 voting;

16 (4) the human-technology interface, including  
17 the usability, accessibility, and comprehensibility of  
18 ballot design, ballot marking devices, and other com-  
19 ponents of such systems;

20 (5) voter privacy and data protection;

21 (6) voter practices regarding the verification of  
22 ballots generated by ballot marking devices and the  
23 likelihood that voters, both with and without disabil-  
24 ities, will recognize errors or omissions with respect  
25 to such ballots; and

1           (7) such other topics as the Director determines  
2           to be appropriate and related to the integrity of elec-  
3           tions.

4           (b) ELECTIONS SYSTEMS RESEARCH CENTER.—

5           (1) IN GENERAL.—The Director of the National  
6           Science Foundation, in consultation with the Direc-  
7           tor of the National Institute of Standards and Tech-  
8           nology and the Secretary of Homeland Security, as  
9           appropriate, shall award grants to institutions of  
10          higher education or eligible nonprofit organizations  
11          (or consortia thereof) to establish at least one multi-  
12          disciplinary center for elections systems research and  
13          education.

14          (2) CONSORTIA.—A consortia receiving an  
15          award under this subsection may include institutions  
16          of higher education, nonprofit organizations, private  
17          sector entities, and State and local election officials.

18          (3) PURPOSE.—The purpose of a center estab-  
19          lished with a grant awarded under this subsection  
20          shall be to—

21                  (A) conduct basic research to advance un-  
22                  derstanding of cyber and other threats to elec-  
23                  tion systems and the conduct of secure, fair,  
24                  and accessible elections;

1 (B) conduct research that may inform the  
2 development of technologies, processes, and  
3 policies that contribute to more secure, fair,  
4 and accessible elections;

5 (C) educate and train students studying in  
6 science, technology, engineering, and mathe-  
7 matics fields to conduct research relevant to  
8 election systems;

9 (D) design curricula that address the  
10 growing organizational management and infor-  
11 mation technology needs of the election commu-  
12 nity; and

13 (E) foster collaboration among academic  
14 researchers, private sector vendors of election  
15 technology, and State and local election offi-  
16 cials.

17 (4) REQUIREMENTS.—

18 (A) IN GENERAL.—An institution of higher  
19 education or an eligible nonprofit organization  
20 (or a consortium thereof) seeking funding under  
21 this subsection shall submit an application to  
22 the Director of the National Science Founda-  
23 tion at such time, in such manner, and con-  
24 taining such information as the Director may  
25 require.



1 (B) APPLICATIONS.—Each application  
2 under subparagraph (A) shall include a descrip-  
3 tion of—

4 (i) how the center established with a  
5 grant awarded under this subsection will  
6 work with other research institutions, in-  
7 dustry partners, and State and local elec-  
8 tion officials to identify research needs and  
9 leverage the expertise of election practi-  
10 tioners; and

11 (ii) how the center will promote active  
12 collaboration among researchers in mul-  
13 tiple disciplines involved in elections sys-  
14 tems security, including computer science,  
15 data science, and social and behavioral  
16 sciences.

17 (5) SELECTION AND DURATION.—Each center  
18 established with a grant awarded under this section  
19 is authorized to carry out activities for a period of  
20 5 years, renewable for an additional 5 years at the  
21 discretion of the Director.

22 (c) AUTHORIZATION OF APPROPRIATIONS.—There  
23 are authorized to be appropriated to carry out this section  
24 \$10,000,000 for each of the fiscal years 2021 through  
25 2025.

1 **SEC. 4. OTHER ACTIVITIES OF NATIONAL INSTITUTE OF**  
2 **STANDARDS AND TECHNOLOGY TO PROMOTE**  
3 **SECURITY AND MODERNIZATION OF VOTING**  
4 **SYSTEMS.**

5 (a) COMMON DATA FORMAT.—The National Insti-  
6 tute of Standards and Technology shall establish and  
7 make publicly available common data format specifications  
8 for auditing, voter registration, and other elements of vot-  
9 ing systems, and provide the specifications to the Tech-  
10 nical Guidelines Development Committee of the Election  
11 Assistance Commission under section 221(e) of the Help  
12 America Vote Act of 2002 (52 U.S.C. 20961(e)).

13 (b) ELECTIONS SYSTEMS CERTIFICATIONS.—The  
14 National Institute of Standards and Technology shall  
15 work in collaboration with the Election Assistance Com-  
16 mission to update the process under which voting systems  
17 are certified pursuant to the Help America Vote Act of  
18 2002 so that State and local election officials will be better  
19 able to carry out updates and otherwise modernize such  
20 systems.

21 (c) TECHNICAL ASSISTANCE.—The Director of the  
22 National Institute of Standards and Technology shall—  
23 (1) provide technical assistance to State and  
24 local election officials on the implementation of cy-  
25 bersecurity standards, privacy standards, risk as-  
26 sessments, risk-limiting audits, and technologies

1 which are incorporated in the voluntary voting sys-  
2 tem guidelines issued under the Help America Vote  
3 Act of 2002; and

4 (2) in collaboration with the Department of  
5 Homeland Security and the Election Assistance  
6 Commission, as appropriate, conduct outreach to  
7 State and local election officials in order to dissemi-  
8 nate best practices for the implementation of such  
9 voluntary voting system guidelines.

10 **SEC. 5. GAO REPORT.**

11 Not later than 18 months after the date of enactment  
12 of this Act, the Comptroller General shall submit a report  
13 to Congress that—

14 (1) addresses the extent to which efforts by the  
15 National Institute of Standards and Technology  
16 (NIST) to assist the Technical Guidelines Develop-  
17 ment Committee of the Election Assistance Commis-  
18 sion in the development of voluntary voting systems  
19 guidelines have resulted in market-ready standard-  
20 ized voting equipment and software, and addresses  
21 the resources made available to NIST to carry out  
22 these activities;

23 (2) addresses efforts by NIST to monitor and  
24 review the performance of laboratories accredited by  
25 the Elections Assistance Commission and to make

1 recommendations for continuing accreditation, in-  
2 creased voting technology reliability, and the number  
3 of accredited private laboratories, and addresses re-  
4 sources made available to NIST to carry out these  
5 activities; and

6 (3) addresses the extent to which the annual  
7 list of suggestions required to be submitted by NIST  
8 to the Election Assistance Commission for research  
9 issues for grants and pilot programs under section  
10 271(d) of the Help America Vote Act of 2002 (52  
11 U.S.C. 21041) and the evaluation of grants and pro-  
12 grams by NIST has improved voting technology and  
13 been successful in encouraging the implementation  
14 of new technologies in voting systems and equip-  
15 ment.

16 **SEC. 6. AMENDMENTS TO THE HELP AMERICA VOTE ACT**  
17 **OF 2002.**

18 Section 301(b) of the Help America Vote Act of 2002  
19 (52 U.S.C. 21081(b)) is amended—

20 (1) in the matter preceding paragraph (1), by  
21 striking “this section” and inserting “this Act”;

22 (2) by striking “and” at the end of paragraph  
23 (1);

24 (3) by redesignating paragraph (2) as para-  
25 graph (6); and

1           (4) by inserting after paragraph (1) the fol-  
2           lowing new paragraphs:

3           “(2) any other paper or electronic technologies  
4           or processes for collecting, storing, or transmitting  
5           personal information of voters for use in the admin-  
6           istration of elections for Federal office, including  
7           electronic poll books with respect to an election;

8           “(3) voter registration databases and systems,  
9           including online interfaces;

10           “(4) systems for carrying out post-election au-  
11           diting;

12           “(5) chain-of-custody procedures; and”.

13 **SEC. 7. DEFINITIONS.**

14           In this Act—

15           (1) the term “voting system” has the meaning  
16           given such term in section 301(b) of the Help Amer-  
17           ica Vote Act of 2002 (52 U.S.C. 21081(b)), as  
18           amended by section 6; and

19           (2) the term “State” means each of the several  
20           States, the District of Columbia, the Commonwealth  
21           of Puerto Rico, Guam, American Samoa, the United

1 States Virgin Islands, and the Commonwealth of the  
2 Northern Mariana Islands.

Passed the House of Representatives September 16,  
2020.

Attest:

*Clerk.*



116<sup>TH</sup> CONGRESS  
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