Suspend the Rules and Pass the Bill, H.R. 4990, with an Amendment
(The amendment strikes all after the enacting clause and inserts a
new text)

116TH CONGRESS
1ST SESSION

H. R. 4990

To direct the National Institute of Standards and Technology and the Na-
tional Science Foundation to carry out research and other activities
to promote the security and modernization of voting systems, and for
other purposes.

IN THE HOUSE OF REPRESENTATIVES

November 8, 2019

Ms. Sherrill (for herself, Mr. Gonzalez of Ohio, Ms. Johnson of Texas,
and Mr. Lucas) introduced the following bill; which was referred to the
Committee on Science, Space, and Technology, and in addition to the
Committee on House Administration, for a period to be subsequently de-
termined by the Speaker, in each case for consideration of such provisions
as fall within the jurisdiction of the committee concerned

A BILL

To direct the National Institute of Standards and Technology
and the National Science Foundation to carry out re-
search 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,
SECTION 1. SHORT TITLE.

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

SEC. 2. NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.

(a) Voting Systems Research.—The Director of the National Institute of Standards and Technology, in collaboration with the National Science Foundation as appropriate, shall carry out a program of research on voting systems, including—

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

(2) end-to-end verifiable systems;

(3) Internet-enabled voting;

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

(5) voter privacy and data protection;

(6) methods for auditing elections;

(7) the interoperability of system technologies;

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

(9) the reliability of various approaches to voter authentication; and
(10) such other areas of research as the Director of the National Institute of Standards and Technology determines to be appropriate and related to the security and integrity of elections for Federal office.

(b) **ELECTIONS SYSTEMS CENTER OF EXCELLENCE.**—

(1) **IN GENERAL.**—The Director of the National Institute of Standards and Technology shall make an award to an institution of higher education or an eligible nonprofit organization (or a consortium thereof) to establish a Center of Excellence in Election Systems.

(2) **COLLABORATIONS.**—The Director shall ensure that the Center of Excellence includes a collaboration of institutions of higher education, nonprofit organizations, private sector entities, and State and local election officials.

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

(A) conduct measurement research and statistical analyses to inform the development of standards for technologies and processes that contribute to more secure, fair, and accessible elections;
(B) test and evaluate the security, usability, and accessibility of the technologies of voting systems, including the accessibility of poll book data by voters;

(C) research testing methods that could be used for the certification of voting system technologies;

(D) educate and train students studying in science, technology, engineering, and mathematics fields to conduct measurement science and standards research relevant to such systems; and

(E) foster collaboration among academic researchers, private sector vendors of election technology, and State and local election officials.

(4) REQUIREMENTS.—

(A) IN GENERAL.—An institution of higher education or an eligible nonprofit organization (or a consortium thereof) seeking funding under this subsection shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require.
(B) APPLICATIONS.—Each application under subparagraph (A) shall include a description of—

(i) how the Center will work with other research institutions, industry partners, and State or local election officials to identify the measurement, testing, and standards needs of voting systems and to leverage the expertise of election practitioners; and

(ii) how the Center will promote active collaboration among researchers in multiple disciplines involved in ensuring the security and integrity of such systems.

(C) SELECTION AND DURATION.—Each Center established under this section is authorized to carry out activities for a period of 5 years, renewable for an additional 5 years at the discretion of the Director.

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section $12,000,000 for each of the fiscal years 2021 through 2025.
SEC. 3. NATIONAL SCIENCE FOUNDATION.

(a) RESEARCH GRANTS.—The Director of the National Science Foundation, in collaboration with the National Institute of Standards and Technology and other relevant agencies, as appropriate, shall award basic research grants to increase the understanding of cyber and other threats to voting systems and to inform the development of technologies, processes, and policies that contribute to more secure, fair, and accessible elections, including research on—

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

(2) end-to-end verifiable systems;

(3) the risks and benefits of Internet-enabled voting;

(4) the human-technology interface, including the usability, accessibility, and comprehensibility of ballot design, ballot marking devices, and other components of such systems;

(5) voter privacy and data protection;

(6) voter practices regarding the verification of ballots generated by ballot marking devices and the likelihood that voters, both with and without disabilities, will recognize errors or omissions with respect to such ballots; and
(7) such other topics as the Director determines to be appropriate and related to the integrity of elections.

(b) **ELECTIONS SYSTEMS RESEARCH CENTER.**—

(1) **IN GENERAL.**—The Director of the National Science Foundation, in consultation with the Director of the National Institute of Standards and Technology and the Secretary of Homeland Security, as appropriate, shall award grants to institutions of higher education or eligible nonprofit organizations (or consortia thereof) to establish at least 1 multidisciplinary center for elections systems research and education.

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

(3) **PURPOSE.**—The purpose of a center established with a grant awarded under this subsection shall be to—

(A) conduct basic research to advance understanding of cyber and other threats to election systems and the conduct of secure, fair, and accessible elections;
(B) conduct research that may inform the development of technologies, processes, and policies that contribute to more secure, fair, and accessible elections;

(C) educate and train students studying in science, technology, engineering, and mathematics fields to conduct research relevant to election systems;

(D) design curricula that address the growing organizational management and information technology needs of the election community; and

(E) foster collaboration among academic researchers, private sector vendors of election technology, and State and local election officials.

(4) REQUIREMENTS.—

(A) IN GENERAL.—An institution of higher education or an eligible nonprofit organization (or a consortium thereof) seeking funding under this subsection shall submit an application to the Director of the National Science Foundation at such time, in such manner, and containing such information as the Director may require.
(B) APPLICATIONS.—Each application under subparagraph (A) shall include a description of—

(i) how the center established with a grant awarded under this subsection will work with other research institutions, industry partners, and State and local election officials to identify research needs and leverage the expertise of election practitioners; and

(ii) how the center will promote active collaboration among researchers in multiple disciplines involved in elections systems security, including computer science, data science, and social and behavioral sciences.

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

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section $10,000,000 for each of the fiscal years 2021 through 2025.
SEC. 4. OTHER ACTIVITIES OF NATIONAL INSTITUTE OF
STANDARDS AND TECHNOLOGY TO PROMOTE
SECURITY AND MODERNIZATION OF VOTING
SYSTEMS.

(a) COMMON DATA FORMAT.—The National Institute of Standards and Technology shall establish and make publicly available common data format specifications for auditing, voter registration, and other elements of voting systems, and provide the specifications to the Technical Guidelines Development Committee of the Election Assistance Commission under section 221(e) of the Help America Vote Act of 2002 (52 U.S.C. 20961(e)).

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

(c) TECHNICAL ASSISTANCE.—The Director of the National Institute of Standards and Technology shall—

(1) provide technical assistance to State and local election officials on the implementation of cybersecurity standards, privacy standards, risk assessments, risk-limiting audits, and technologies
which are incorporated in the voluntary voting system guidelines issued under the Help America Vote Act of 2002; and

(2) in collaboration with the Department of Homeland Security and the Election Assistance Commission, as appropriate, conduct outreach to State and local election officials in order to disseminate best practices for the implementation of such voluntary voting system guidelines.

SEC. 5. GAO REPORT.

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

(1) addresses the extent to which efforts by the National Institute of Standards and Technology (NIST) to assist the Technical Guidelines Development Committee of the Election Assistance Commission in the development of voluntary voting systems guidelines have resulted in market-ready standardized voting equipment and software, and addresses the resources made available to NIST to carry out these activities;

(2) addresses efforts by NIST to monitor and review the performance of laboratories accredited by the Elections Assistance Commission and to make
recommendations for continuing accreditation, increased voting technology reliability, and the number of accredited private laboratories, and addresses resources made available to NIST to carry out these activities; and

(3) addresses the extent to which the annual list of suggestions required to be submitted by NIST to the Election Assistance Commission for research issues for grants and pilot programs under section 271(d) of the Help America Vote Act of 2002 (52 U.S.C. 21041) and the evaluation of grants and programs by NIST has improved voting technology and been successful in encouraging the implementation of new technologies in voting systems and equipment.


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

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

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

(3) by redesignating paragraph (2) as paragraph (6); and
(4) by inserting after paragraph (1) the follow- 
ing new paragraphs:

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

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

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

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

SEC. 7. DEFINITIONS.

In this Act—

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

(2) the term “State” means each of the several 
States, the District of Columbia, the Commonwealth 
of Puerto Rico, Guam, American Samoa, the United 
States Virgin Islands, and the Commonwealth of the 
Northern Mariana Islands.