Improve the Forecasting of Tomorrow (PROSWIFT) Act would break down barriers between the nation's researchers and forecasters, coordinate the efforts of key federal agencies, and establish an integrated strategy across the federal government to address space weather research and observational needs.

This legislation, appropriately, has strong bipartisan support. Sens. Gary Peters (D–Mich.) and Cory Gardner (R–Colo.) co-sponsored the Senate bill. In the House of Representatives, Rep. Ed Perlmutter (D–Colo.) is working with eight co-sponsors on both sides of the aisle to advance the measure.

With just months remaining on the calendar of the current Congress, the House must provide the final passage of this important legislation.

CONGRESS NEEDS TO PROVIDE FLEXIBLE FUNDING TO STATES TO DEPLOY

Our solar forecasting capabilities at present are comparable to terrestrial weather prediction before the Second World War when communities had little warning of incoming storms. Since then, government agencies, private companies, and university researchers have collaborated on landmark advances in weather prediction, which have saved countless lives, fostered economic growth, and supported military operations.

We have now arrived at a pivotal moment in forecasting solar storms. At a time when society is more dependent than ever on advanced e-based technologies, the PROSWIFT Act lays out a clear road map for bringing together expertise in government, the private sector, and academia to forecast these damaging events. If Congress and the administration successfully enact the legislation, this predictive capability will provide a critical safeguard for America's economic competitiveness and national security, and for the business and school technologies that we have all come to rely upon.

Mr. PERLMUTTER. Madam Speaker, just reading quickly from the op-ed as to why we are doing this:

''Significant space weather events occur every decade or so with far-reaching and destructive consequences. A powerful solar storm in 1989 cut off power to millions of Canadians, and major storms in 2003 affected more than half of the Earth-orbiting spacecraft. Just 3 years ago, solar flares caused radio blackouts for hours during critical emergency response efforts to approaching hurricanes in the Caribbean and nearby regions.

''A solar superstorm poses even greater risks. The so-called Carrington Event in 1859, which ignited fires in telegraph offices, would have catastrophic impacts on today's society, potentially resulting in widespread damage to power grids, communication networks, and other technologies.''

Madam Speaker, I reserve the balance of my time.

Mr. LUCAS. Madam Speaker, I am prepared to close, and I yield myself such time as I may consume.

Madam Speaker, I, again, would like to thank the sponsors of this legislation for their hard work on this important topic.

I encourage all my colleagues to support this bill, and I yield back the balance of my time.

Mr. PERLMUTTER. Madam Speaker, I yield myself the balance of my time.

Madam Speaker, I thank my colleagues on both sides of the aisle for supporting this legislation and for both sides of the Capitol. We have been working on it for a long time. There has been a lot of serious interest in this piece of legislation because of the potential for damage that a space weather event can have.

As I said before, we have worked together on the Committee on Science, Space and Technology and the Senate Committee on Commerce, Science, and Transportation to advance this bill for almost 5 years.

Each iteration of the bill brought new perspectives and new ideas, and we worked across two administrations. We put all that work together into the bill before us today, and I, again, thank the Members and staff who helped make this possible.

Madam Speaker, I encourage all my colleagues to vote ''aye'' on this space weather bill, and I yield back the balance of my time.

Ms. JOHNSON of Texas. Madam Speaker, I rise in strong support of S. 881 ''The Promoting Research and Observations of Space Weather to Improve the Forecasting of Tomorrow, or PROSWIFT, Act.''

Space weather is something the American public may not yet have an awareness of, but it has the potential to impact society across the world—every single day.

Geomagnetic storms or solar flares can cause disturbances in both space and the near-Earth environment.

These effects can reach the Earth's surface and pose significant risks to humans operating in space, some aircraft flights, space communications, GPS-based services, the electric grid, pipelines, and other space-based and ground-based infrastructure.

In short, space weather events can have major societal, national security, economic, and health impacts.

That is why I was an original co-sponsor of Mr. PERLMUTTER's H.R. 5260, ''The PROSWIFT Act,'' which is the basis of the text of the Senate-passed space weather bill we are voting on today. H.R. 5260 was widely supported by the space weather community, including academia, industry, and not-for-profit entities.

I want to commend my colleague on the House Science Committee, Mr. PERLMUTTER, for tirelessly pushing to make this legislation a reality for over five years.

He and his dedicated staff worked closely with my Committee staff, with the staff of the Committee's Ranking Member, as well as staff of our colleagues in the Senate, to bring this legislation to the floor today.

Unlike previous attempts to move this legislation, I am proud that the bill being voted on today came out of regular order in the House Science Committee.

This bill took into consideration feedback from major stakeholders in the space weather community and was strengthened during our markup process to include a commercial space weather pilot program. It was further strengthened following negotiations with our colleagues in the Senate.

I am pleased that this bill represents both bicameral and bipartisan agreement on this important issue.

I have supported the overall agenda to advance the space weather enterprise and ensure capabilities for space weather observation and forecasting for many years and Congresses before this. I am looking forward to finally passing this legislation today, and have it enacted after years of hard work.

Being able to better understand and predict space weather events is vitally important to protecting our society, our economy, and our critical national infrastructure. I urge my colleagues to support this bipartisan and good governance bill.

The SPEAKER pro tempore. The question is on the motion offered by the gentleman from Colorado (Mr. PERLMUTTER) that the House suspend the rules and pass the bill, S. 881.

The question was taken; and (two-thirds being in the affirmative) the rules were suspended and the bill was passed.

A motion to reconsider was laid on the table.

RURAL STEM EDUCATION ACT

Ms. JOHNSON of Texas. Madam Speaker, I move to suspend the rules and pass the bill (H.R. 4979) to direct the Director of the National Science Foundation to support STEM education and workforce development research focused on rural areas, and for other purposes, as amended.

The Clerk read the title of the bill.

The text of the bill is as follows:

H.R. 4979

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Rural STEM Education Act''.

SEC. 2. FINDINGS.

Congress finds the following:

(1) The supply of STEM workers is not keeping pace with the rapidly evolving needs of the public and private sector, resulting in a deficit often referred to as a STEM skills shortage.

(2) According to the Bureau of Labor Statistics, the United States will need one million additional STEM professionals than it is on track to produce in the coming decade.

(3) Many STEM occupations offer higher wages, more opportunities for advancement, and a higher degree of job security than non-STEM jobs.

(4) The 60,000,000 individuals in the United States who live in rural settings are significantly under-represented in STEM.

(5) According to the National Center for Education Statistics, nine million students in the United States—nearly 20 percent of the total K–12 population—attend rural schools, and for reasons ranging from teacher quality to shortages of resources, these students often have fewer opportunities for high-quality STEM learning than their peers in the Nation's urban and suburban schools.

(6) Rural areas represent one of the most promising, yet underutilized, opportunities for STEM education to impact workforce development and regional innovation, including agriculture.

(7) The study of agriculture, food, and natural resources involves biology, engineering, physics, chemistry, math, geology, computer science, and other scientific fields.

(8) Employment in computer and information technology occupations is projected to grow 11 percent from 2019 to 2029. To help meet this demand, it is important rural students have the opportunity to acquire computing skills through exposure to computer

science learning in grades PreK - 12 and in informal learning settings.

(9) More than 293,000,000 individuals in the United States use high-speed broadband to work, learn, access healthcare, and operate their businesses, while 19,000,000 individuals in the United States still lack access to high-speed broadband. Rural areas are hardest hit, with over 26 percent of individuals in rural areas in the United States lacking access to high-speed broadband compared to 1.7 percent of individuals in urban areas in the United States.

SEC. 3. NATIONAL SCIENCE FOUNDATION RURAL STEM ACTIVITIES.

(a) PREPARING RURAL STEM EDUCATORS.—

(1) IN GENERAL.—The Director shall provide grants on a merit-reviewed, competitive basis to institutions of higher education or nonprofit organizations (or a consortium thereof) for research and development to advance innovative approaches to support and sustain high-quality STEM teaching in rural schools.

(2) USE OF FUNDS.—

(A) IN GENERAL.—Grants awarded under this section shall be used for the research and development activities referred to in paragraph (1), which may include—

(i) engaging rural educators of students in grades Pre-K through 12 in professional learning opportunities to enhance STEM knowledge, including computer science, and develop best practices;

(ii) supporting research on effective STEM teaching practices in rural settings, including the use of rubrics and mastery-based grading practices to assess student performance when employing the transdisciplinary teaching approach for STEM disciplines;

(iii) designing and developing pre-service and in-service training resources to assist such rural educators in adopting transdisciplinary teaching practices across STEM courses;

(iv) coordinating with local partners to adapt STEM teaching practices to leverage local natural and community assets in order to support in-place learning in rural areas;

(v) providing hands-on training and research opportunities for rural educators described in clause (i) at Federal Laboratories, institutions of higher education, or in industry;

(vi) developing training and best practices for educators who teach multiple grade levels within a STEM discipline;

(vii) designing and implementing professional development courses and experiences, including mentoring, for rural educators described in clause (i) that combine face-to-face and online experiences; and

(viii) any other activity the Director determines will accomplish the goals of this subsection.

(B) RURAL STEM COLLABORATIVE.—The Director may establish a pilot program of regional cohorts in rural areas that will provide peer support, mentoring, and hands-on research experiences for rural STEM educators of students in grades Pre-K through 12, in order to build an ecosystem of cooperation among educators, researchers, academia, and local industry.

(b) BROADENING PARTICIPATION OF RURAL STUDENTS IN STEM.—

(1) IN GENERAL.—The Director shall provide grants on a merit-reviewed, competitive basis to institutions of higher education or nonprofit organizations (or a consortium thereof) for—

(A) research and development of programming to identify the barriers rural students face in accessing high-quality STEM education; and

(B) development of innovative solutions to improve the participation and advancement of rural students in grades Pre-K through 12 in STEM studies.

(2) USE OF FUNDS.—

(A) IN GENERAL.—Grants awarded under this section shall be used for the research and development activities referred to in paragraph (1), which may include—

(i) developing partnerships with community colleges to offer advanced STEM course work, including computer science, to rural high school students;

(ii) supporting research on effective STEM practices in rural settings;

(iii) implementing a school-wide STEM approach;

(iv) improving the National Science Foundation's Advanced Technology Education program's coordination and engagement with rural communities;

(v) collaborating with existing community partners and networks, such as the cooperative research and extension services of the Department of Agriculture and youth serving organizations like 4-H, after school STEM programs, and summer STEM programs, to leverage community resources and develop place-based programming;

(vi) connecting rural school districts and institutions of higher education, to improve precollegiate STEM education and engagement;

(vii) supporting partnerships that offer hands-on inquiry-based science activities, including coding, and access to lab resources for students studying STEM in grades Pre–K through 12 in a rural area;

(viii) evaluating the role of broadband connectivity and its associated impact on the STEM and technology literacy of rural students;

(ix) building capacity to support extracurricular STEM programs in rural schools, including mentor-led engagement programs, STEM programs held during nonschool hours, STEM networks, makerspaces, coding activities, and competitions; and

(x) any other activity the Director determines will accomplish the goals of this subsection.

(c) APPLICATION.—An applicant seeking a grant under subsection (a) or (b) shall submit an application at such time, in such manner, and containing such information as the Director may require. The application may include the following:

(1) A description of the target population to be served by the research activity or activities for which such grant is sought.

(2) A description of the process for recruitment and selection of students, educators, or schools from rural areas to participate in such activity or activities.

(3) A description of how such activity or activities may inform efforts to promote the engagement and achievement of rural students in grades PreK - 12 in STEM studies.

(4) In the case of a proposal consisting of a partnership or partnerships with one or more rural schools and one or more researchers, a plan for establishing a sustained partnership that is jointly developed and managed, draws from the capacities of each partner, and is mutually beneficial.

(d) PARTNERSHIPS.—In awarding grants under subsection (a) or (b), the Director shall—

(1) encourage applicants which, for the purpose of the activity or activities funded through the grant, include or partner with a nonprofit organization or an institution of higher education (or a consortium thereof) that has extensive experience and expertise in increasing the participation of rural students in grades Pre-K through 12 in STEM;

(2) encourage applicants which, for the purpose of the activity or activities funded through the grant, include or partner with a consortium of rural schools or rural school districts; and

(3) encourage applications which, for the purpose of the activity or activities funded through the grant, include commitments from school principals and administrators to making reforms and activities proposed by the applicant a priority.

(e) EVALUATIONS.—All proposals for grants under subsections (a) and (b) shall include an evaluation plan that includes the use of outcome oriented measures to assess the impact and efficacy of the grant. Each recipient of a grant under this section shall include results from these evaluative activities in annual and final projects.

(f) ACCOUNTABILITY AND DISSEMINATION.—

(1) EVALUATION REQUIRED.—The Director shall evaluate the portfolio of grants awarded under subsections (a) and (b). Such evaluation shall—

(A) use a common set of benchmarks and tools to assess the results of research conducted under such grants and identify best practices; and

(B) to the extent practicable, integrate the findings of research resulting from the activity or activities funded through such grants with the findings of other research on rural student's pursuit of degrees or careers in STEM.

(2) REPORT ON EVALUATIONS.—Not later than 180 days after the completion of the evaluation under paragraph (1), the Director shall submit to Congress and make widely available to the public a report that includes—

(A) the results of the evaluation; and

(B) any recommendations for administrative and legislative action that could optimize the effectiveness of the grants awarded under this section.

(g) REPORT BY COMMITTEE ON EQUAL OPPORTUNITIES IN SCIENCE AND ENGINEERING.—

(1) IN GENERAL.—As part of the first report required by section 36(e) of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885c(e)) transmitted to Congress after the date of enactment of this Act, the Committee on Equal Opportunities in Science and Engineering shall include—

(A) a description of past and present policies and activities of the Foundation to encourage full participation of students in rural communities in science, mathematics, engineering, and computer science fields; and

(B) an assessment of trends in participation of rural students in grades Pre-K through 12 in Foundation activities, and an assessment of the policies and activities of the Foundation, along with proposals for new strategies or the broadening of existing successful strategies towards facilitating the goals of this Act.

(2) TECHNICAL CORRECTION.—

(A) IN GENERAL.—Section 313 of the American Innovation and Competitiveness Act (Public Law 114–329) is amended by striking ''Section 204(e) of the National Science Foundation Authorization Act of 1988'' and inserting ''Section 36(e) of the Science and Engineering Equal Opportunities Act''.

(B) APPLICABILITY.—The amendment made by paragraph (1) shall take effect as if included in the enactment of section 313 of the American Innovation and Competitiveness Act (Public Law 114–329).

(h) COORDINATION.—In carrying out this section, the Director shall, for purposes of enhancing program effectiveness and avoiding duplication of activities, consult, cooperate, and coordinate with the programs and policies of other relevant Federal agencies.

(i) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Director—

(1) $8,000,000 to carry out the activities under subsection (a) for each of fiscal years 2021 through 2025; and

(2) $12,000,000 to carry out the activities under subsection (b) for each of fiscal years 2021 through 2025.

SEC. 4. OPPORTUNITIES FOR ONLINE EDUCATION.

(a) IN GENERAL.—The Director shall, subject to appropriations, award competitive grants to institutions of higher education or nonprofit organizations (or a consortium thereof, which may include a private sector partner) to conduct research on online STEM education courses for rural communities.

(b) RESEARCH AREAS.—The research areas eligible for funding under this subsection shall include—

(1) evaluating the learning and achievement of rural students in grades Pre–K through 12 in STEM subjects;

(2) understanding how computer-based and online professional development courses and mentor experiences can be integrated to meet the needs of educators of rural students in grades Pre–K through 12;

(3) combining computer-based and online STEM education and training with apprenticeships, mentoring, or other applied learning arrangements;

(4) leveraging online programs to supplement STEM studies for rural students that need physical and academic accommodation; and

(5) any other activity the Director determines will accomplish the goals of this subsection.

(c) EVALUATIONS.—All proposals for grants under this section shall include an evaluation plan that includes the use of outcome oriented measures to assess the impact and efficacy of the grant. Each recipient of a grant under this section shall include results from these evaluative activities in annual and final projects.

(d) ACCOUNTABILITY AND DISSEMINATION.—

(1) EVALUATION REQUIRED.—The Director shall evaluate the portfolio of grants awarded under this section. Such evaluation shall—

(A) use a common set of benchmarks and tools to assess the results of research conducted under such grants and identify best practices; and

(B) to the extent practicable, integrate findings from activities carried out pursuant to research conducted under this section, with respect to the pursuit of careers and degrees in STEM, with those activities carried our pursuant to other research on serving rural students and communities.

(2) REPORT ON EVALUATIONS.—Not later than 180 days after the completion of the evaluation under paragraph (1), the Director shall submit to Congress and make widely available to the public a report that includes—

(A) the results of the evaluation; and

(B) any recommendations for administrative and legislative action that could optimize the effectiveness of the grants awarded under this section.

(e) COORDINATION.—In carrying out this section, the Director shall, for purposes of enhancing program effectiveness and avoiding duplication of activities, consult, cooperate, and coordinate with the programs and policies of other relevant Federal agencies.

SEC. 5. NATIONAL ACADEMY OF SCIENCES EVALUATION.

(a) STUDY.—Not later than 12 months after the date of enactment of this Act, the Director shall enter into an agreement with the National Academy of Sciences under which the National Academy agrees to conduct an evaluation and assessment that—

(1) evaluates the quality and quantity of current Federal programming and research directed at examining STEM education for students in grades Pre–K through 12 and workforce development in rural areas;

(2) assesses the impact of the scarcity of broadband connectivity in rural communities has on STEM and technical literacy for students in grades Pre–K through 12 in rural areas;

(3) assesses the core research and data needed to understand the challenges rural areas are facing in providing quality STEM education and workforce development; and

(4) makes recommendations for action at the Federal, State, and local levels for improving STEM education for students in grades Pre–K through 12 and workforce development in rural areas.

(b) REPORT TO DIRECTOR.—The agreement entered into under subsection (a) shall require the National Academy of Sciences, not later than 24 months after the date of enactment of this Act, to submit to the Director a report on the study conducted under such subsection, including the National Academy's findings and recommendations.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Director to carry out this section $1,000,000 for fiscal year 2021.

SEC. 6. GAO REVIEW.

Not later than 3 years after the date of enactment of this Act, the Comptroller General of the United States shall conduct a study on the engagement of rural populations in Federal STEM programs and submit to Congress a report that includes—

(1) an assessment of how Federal STEM education programs are serving rural populations;

(2) a description of initiatives carried out by Federal agencies that are targeted at supporting STEM education in rural areas;

(3) an assessment of what is known about the impact and effectiveness of Federal investments in STEM education programs that are targeted to rural areas; and

(4) an assessment of challenges that state and Federal STEM education programs face in reaching rural population centers.

SEC. 7. CAPACITY BUILDING THROUGH EPSCOR.

Section 517(f)(2) of the America COMPETES Reauthorization Act of 2010 (42 U.S.C. 1862p–9(f)(2)) is amended—

(1) in subparagraph (A), by striking ''and'' at the end; and

(2) by adding at the end the following:

''(C) to increase the capacity of rural communities to provide quality STEM education and STEM workforce development programming to students, and teachers; and''.

SEC. 8. NIST ENGAGEMENT WITH RURAL COMMUNITIES.

(a) MEP OUTREACH.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k) is amended—

(1) in subsection (c)—

(A) in paragraph (6), by striking ''community colleges and area career and technical education schools'' and inserting the following: ''secondary schools (as defined in section 8101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801)), community colleges, and area career and technical education schools, including those in underserved and rural communities,''; and

(B) in paragraph (7)—

(i) by striking ''and local colleges'' and inserting the following: ''local high schools and local collseges, including those in underserved and rural communities,''; and

(ii) by inserting ''or other applied learning opportunities'' after ''apprenticeships''; and

(2) in subsection (d)(3) by striking '', community colleges, and area career and technical education schools,'' and inserting the following: ''and local high schools, community colleges, and area career and technical education schools, including those in underserved and rural communities,''.

(b) RURAL CONNECTIVITY PRIZE COMPETITION.—

(1) PRIZE COMPETITION.—Pursuant to section 24 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3719), the Secretary of Commerce, acting through the Under Secretary of Commerce for Standards and Technology (referred to in this subsection as the ''Secretary''), shall, subject to appropriations, carry out a program to award prizes competitively to stimulate research and development of creative technologies in order to deploy affordable and reliable broadband connectivity to underserved rural communities.

(2) PLAN FOR DEPLOYMENT IN RURAL COMMUNITIES.—Each proposal submitted pursuant to paragraph (1) shall include a plan for deployment of the technology that is the subject of such proposal in an underserved rural community.

(3) PRIZE AMOUNT.—In carrying out the program under paragraph (1), the Secretary may award not more than a total of $5,000,000 to one or more winners of the prize competition.

(4) REPORT.—Not later than 60 days after the date on which a prize is awarded under the prize competition, the Secretary shall submit to the relevant committees of Congress a report that describes the winning proposal of the prize competition.

(5) CONSULTATION.—In carrying out the program under subsection (a), the Secretary may consult with the heads of relevant departments and agencies of the Federal Government.

SEC. 9. NITR-D BROADBAND WORKING GROUP.

Title I of the High-Performance Computing Act of 1991 (15 U.S.C. 5511 et seq.) is amended by adding at the end the following:

''SEC. 103. BROADBAND RESEARCH AND DEVELOPMENT WORKING GROUP.

''(a) IN GENERAL.—The Director shall establish a broadband research and development working group to address national research challenges and opportunities for improving broadband access and adoption across the United States.

''(b) ACTIVITIES.—The working group shall identify and coordinate key research priorities for addressing broadband access and adoption, including—

''(1) promising research areas;

''(2) requirements for data collection and sharing;

''(3) opportunities for better alignment and coordination across Federal agencies and external stakeholders; and

''(4) input on the development of new Federal policies and programs to enhance data collection and research.

''(c) COORDINATION.—The working group shall coordinate, as appropriate, with the Rural Broadband Integration Working Group established under section 6214 of the Agriculture Improvement Act of 2018 (Public Law 115–334) and the National Institute of Food and Agriculture of the Department of Agriculture.

''(d) REPORT.—The working group shall report to Congress on their activities as part of the annual report submitted under section 101(a)(2)(D).

''(e) SUNSET.—The authority to carry out this section shall terminate on the date that is 5 years after the date of enactment of the Rural STEM Education Act.''.

SEC. 10. DEFINITIONS.

In this Act:

(1) DIRECTOR.—The term ''Director'' means the Director of the National Science Foundation established under section 2 of the National Science Foundation Act of 1950 (42 U.S.C. 1861).

(2) FEDERAL LABORATORY.—The term ''Federal laboratory'' has the meaning given such term in section 4 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3703).

(3) FOUNDATION.—The term ''Foundation'' means the National Science Foundation established under section 2 of the National Science Foundation Act of 1950 (42 U.S.C. 1861).

(4) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given such term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(5) STEM.—The term ''STEM'' has the meaning given the term in section 2 of the America COMPETES Reauthorization Act of 2010 (42 U.S.C. 6621 note).

(6) STEM EDUCATION.—The term ''STEM education'' has the meaning given the term in section 2 of the STEM Education Act of 2015 (42 U.S.C. 6621 note).

The SPEAKER pro tempore. Pursuant to the rule, the gentlewoman from Texas (Ms. JOHNSON) and the gentleman from Oklahoma (Mr. LUCAS) each will control 20 minutes.

The Chair recognizes the gentlewoman from Texas.

GENERAL LEAVE

Ms. JOHNSON of Texas. Madam Speaker, I ask unanimous consent that all Members may have 5 legislative days to revise and extend their remarks and to include extraneous materials on H.R. 4979, the bill now under consideration.

The SPEAKER pro tempore. Is there objection to the request of the gentlewoman from Texas?

There was no objection.

Ms. JOHNSON of Texas. Madam Speaker, I yield myself such time as I may consume.

Madam Speaker, I rise today in support of H.R. 4979, the Rural STEM Education Act.

I thank Ranking Member LUCAS and Representative MCADAMS for introducing this important bill, which I am proud to cosponsor.

The COVID–19 crisis has revealed and exacerbated the many harmful inequities that persist in our society. Rural communities have not been spared.

Broadband access and the so-called digital divide have long been a barrier to high quality STEM education for students in rural areas. STEM teachers in rural communities are stretched thin, often teaching multiple STEM subjects at multiple grade levels. While dedicated and hardworking, these teachers have limited resources and support, including training that is up-to-date and optimized for schools in a rural setting.

Rural school districts also have limited access to library equipment to provide students with hands-on experiences and a glimpse of what it is like to actually do science.

The sudden transition to remote education across the Nation that has occurred due to the pandemic has amplified these challenges for rural communities.

School districts are getting creative. Some are setting up internet hotspots in the parking lot. Some students can download assignments and submit homework. Others are sending out paper packets for students without reliable transportation. While these stopgap measures are helpful, they are not enough.

And students are falling behind. If we had invested in improving remote teaching and mentoring and improving broadband access before the pandemic hit, rural communities would have been better prepared to weather this crisis.

The Rural STEM Education Act provides for research and development to improve access to evidence-based STEM education opportunities in rural schools and provide teachers with the support and tools they need to teach more effectively.

I am particularly excited about the NIST rural connectivity prize competition and the Broadband Research and Development Working Group, which would advance research and technology development to expand broadband access across the country.

The bill also provides for a much-needed assessment of Federal investments in rural STEM education through the National Academies of Science and the Government Accountability Office.

This bill is a critical step forward to ensuring that more students have access to a high-quality STEM education and that we are equipped with the STEM workforce we need to face future challenges like this pandemic.

Madam Speaker, I thank the ranking member of the Committee on Science, Space, and Technology, Mr. LUCAS, for introducing this bill, and also for working collaboratively with me and the staff to ensure it was a bipartisan effort.

Madam Speaker, I urge my colleagues to support this bill, and I reserve the balance of my time.

□ 1245

Mr. LUCAS. Madam Speaker, I yield myself such time as I may consume.

Madam Speaker, I rise in strong support of H.R. 4979, the Rural STEM Education Act. I am pleased to be leading this important bipartisan bill and would like to thank Congressman MCADAMS, Congressman BAIRD, Congresswoman JOHNSON, and the other 43 Members of Congress who cosponsored this bill for their support.

Now more than ever, America's prosperity and security depend on an effective, inclusive science, technology, engineering, math, and computer science workforce, or STEM.

Nationally, 80 percent of the fastest growing occupations depend upon mastery of STEM skills. The number of STEM jobs is growing three times faster than non-STEM jobs. Over the next decade, the STEM shortage is anticipated to reach 1 million positions, according to the Bureau of Labor Statistics.

To succeed in this job market, our students need to be equipped with solid skills in science and engineering.

Meeting this demand starts in the classroom. With STEM education becoming so fundamental to success in any industry, finding ways to improve the quality of STEM learning everywhere is of critical importance.

Over 9 million students in the United States, nearly 20 percent of the K–12 population, attend rural schools. In Oklahoma, that number is even higher. One-third of our students attend rural schools.

These students face a number of barriers to accessing high-quality STEM learning, including a shortage of trained science and math teachers, single teachers teaching multiple grade levels, a lack of access to advanced STEM courses, and few local university and industry partners.

Since the start of the coronavirus pandemic, we have seen even further proof that rural students are at a disadvantage, given the unreliability or nonexistent broadband access many must deal with while currently distance learning.

The Rural STEM Education Act supports research and development activities to improve our understanding of the challenges rural communities are facing in providing and sustaining quality STEM education programs and take steps to address them.

H.R. 4979 helps develop best practices for accessing and using computer-based and online STEM education courses. It will help schools combine online STEM education with hands-on training and apprenticeships, to give students both theoretical and practical understanding of science and math skills.

This bill will also take steps to address one of the great key obstacles to rural STEM education: reduced connectivity and, in particular, the lack of broadband access. Of the 21 million Americans who lack access to broadband, the majority live in rural areas. With the increase in online learning, we need to prioritize connectivity for all students.

This bill directs the National Institutes of Standards and Technology to establish a prize competition to stimulate innovations in technologies to deploy broadband connectivity to underserved rural communities.

It also establishes a working group to set key research priorities for improving broadband access so rural communities can enjoy the same connectedness as the rest of the country.

This bill includes a number of provisions to help provide rural educators with the tools they need to be successful, both in the classroom and online.

It supports opportunities for rural educators to refresh and enhance their own STEM knowledge, such as training in computer science and research opportunities at Federal laboratories and universities. These experiences provide rural educators with high-quality STEM skills and practices they can take back to their classrooms and pass on to their students.

Lastly, the major focus of the bill is broadening the participation of rural

students in STEM. One way we can do this is by emphasizing place-based learning, which gives students direct access to the STEM knowledge in their communities and local environments.

Place-based learning connects students to the science that is right outside their doors, whether it is studying animal science with FFA, learning about local ecosystems out on the prairies or in forests, or developing the technological skills required to operate increasingly complex and computerized farm equipment.

That direct experience engages students and helps them understand that STEM skills matter to everyone, not just scientists in white lab coats.

Taken together, the measures in this bill will dramatically improve rural STEM education. I believe rural areas represent one of the greatest yet most underutilized opportunities for talented students to enhance the United States' future STEM workforce.

I am pleased this bill has gained the endorsement of the STEM Education Coalition, the Afterschool Alliance, Battelle and STEM-X, National Science Teaching Association, American Chemical Society, American Geophysical Union, Microsoft, Girl Scouts of the USA, National FFA Organization, and Association of Public and Land-grant Universities.

I again would like to thank Chairwoman JOHNSON, Representative MCADAMS, Representative BAIRD, and their staff for working with me on this bill.

I strongly encourage my colleagues to vote ''yes'' to better STEM education for America's rural students, and I reserve the balance of my time.

Ms. JOHNSON of Texas. Madam Speaker, I yield 4 minutes to the gentleman from Utah (Mr. MCADAMS).

Mr. MCADAMS. Madam Speaker, I rise in support of my bipartisan bill with Representative LUCAS, the Rural STEM Education Act.

More than 9 million students nationwide attend a rural school. And in my home State of Utah, 15 percent of our students live in rural communities.

Unfortunately, there are many barriers to receiving quality STEM education for rural community students. There is a shortage of math and science teachers and a high rate of teacher turnover. Plus, access to high-speed and reliable internet is more limited in these areas.

Today, as we live through this pandemic, we know how important reliable internet is for kids and teachers. This bill would provide effective online teaching tools that educators can use in our rural areas.

It will also increase teacher recruitment and improve internet access. It will task several government agencies to work together to advance research and provide teachers with what they need to effectively teach STEM to more students in rural communities.

When bright young minds have the opportunity to explore science, technology, engineering, and math, you never know where their intelligence and their curiosity might lead them or what new discoveries we will be able to trace back to the education they received starting in their hometown.

I urge my colleagues to support this important legislation, and I thank my friend from Oklahoma (Mr. LUCAS) for championing this.

Mr. LUCAS. Madam Speaker, I yield 5 minutes to the gentleman from Indiana (Mr. BAIRD).

Mr. BAIRD. Madam Speaker, I rise in strong support of H.R. 4979, the Rural STEM Education Act. I am proud to be an original cosponsor of this legislation.

As one of only two Members of Congress with a Ph.D. in science, I understand the importance of teaching science, technology, engineering, mathematics, and computer science at an early age.

Quality STEM education is essential to train the next generation of American minds. Fostering children's natural curiosity is critical to expanding their interest in STEM.

More than 9 million students in the United States attend rural schools, so investing in rural areas represents one of the most significant opportunities for STEM education.

H.R. 4979 will support research and development to identify the barriers rural students face in accessing high-quality STEM education, and it will develop innovative solutions to improve rural students' participation and advancement in the STEM fields.

In a time when our rural students are facing more barriers than ever before because of COVID, this bill can play an important role in helping these students remain in the STEM pipeline.

With the shift to online learning in recent months, it is more important than ever that we invest in the best practices and the scalability of online STEM education courses for our rural communities.

In addition to examining opportunities for online education, this legislation also promotes the importance of place-based learning. Place-based learning is a tremendous tool to broaden participation by rural students in STEM.

It uses local heritage, geography, and opportunities to study STEM. By connecting them with the science that is right outside their front door, rural students will have hands-on learning opportunities, even while the courses remain online.

I would be remiss if I did not mention one of the greatest barriers our rural students face, which is broadband access. Over 20 million Americans lack access to broadband, and the majority live in these rural areas. This bill prioritizes connectivity for all students and supports technologies to deploy broadband to these underserved rural areas.

We must also recognize the key role educators play, especially rural teachers who teach multiple grade levels within a STEM discipline. H.R. 4979 provides rural STEM educators with resources and experiences that they can bring back to the classroom and use with their students.

I would like to thank Ranking Member LUCAS for his leadership on this bill. By improving access to STEM opportunities in rural schools, the Rural STEM Education Act will ensure that communities in less populated areas are not overlooked and that the intellectual power of our next generation continues to grow.

I encourage my colleagues to vote ''yes'' on this bill.

Ms. JOHNSON of Texas. Madam Speaker, I am prepared to close, and I reserve the balance of my time.

Mr. LUCAS. Madam Speaker, I yield myself such time as I might consume.

In closing, I again want to thank Chairwoman JOHNSON, Representative MCADAMS, Representative BAIRD, and their staff for working with me on this bill.

I am grateful to my colleagues for helping me move this forward in a bipartisan way. I want rural students to have every opportunity to compete and contribute STEM skills both to their communities and to the national workforce.

The Rural STEM Education Act gives teachers better tools to teach science and math, leverages local resources to engage students in key subjects, and addresses the lack of broadband access in rural communities.

Madam Speaker, I encourage my colleagues to support this bill, and I yield back the balance of my time.

Ms. JOHNSON of Texas. Madam Speaker, I yield myself the balance of my time.

I would like to take a moment again to thank the gentleman from Oklahoma (Mr. LUCAS) for working with the members of this committee on this legislation and thank Mr. MCADAMS and Dr. BAIRD.

It is my hope that we can pass this bill out of the House today and, hopefully, work with our colleagues in the Senate to get this bipartisan bill, as well as many others, of course, we have sent over there passed into law.

This bill is needed more now than it was when we started out, so I would hope that the Senate will see the need to pass this bill as soon as possible.

Madam Speaker, I yield back the balance of my time.

The SPEAKER pro tempore. The question is on the motion offered by the gentlewoman from Texas (Ms. JOHNSON) that the House suspend the rules and pass the bill, H.R. 4979, as amended.

The question was taken; and (two-thirds being in the affirmative) the rules were suspended and the bill, as amended, was passed.

A motion to reconsider was laid on the table.

□ 1300

ELECTION TECHNOLOGY RESEARCH ACT OF 2020

Ms. SHERRILL. Madam Speaker, I move to suspend the rules and pass the bill (H.R. 4990) 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, as amended.

The Clerk read the title of the bill.

The text of the bill is as follows:

H.R. 4990

Be it enacted by the Senate and House of Representatives 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.

(c) 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