117TH CONGRESS
2d Session
HOUSE OF REPRESENTATIVES
REPORT
117–305

PROMOTING DIGITAL PRIVACY TECHNOLOGIES ACT

MAY 3, 2022.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Ms. JOHNSON of Texas, from the Committee on Science, Space, and Technology, submitted the following

R E P O R T

[To accompany H.R. 847]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 847) to support research on privacy enhancing technologies and promote responsible data use, and for other purposes, having considered the same, reports favorably thereon with an amendment and recommends that the bill as amended do pass.

CONTENTS

I. AMENDMENT

The amendment is as follows:
Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "Promoting Digital Privacy Technologies Act".

SEC. 2. DEFINITION OF PRIVACY ENHANCING TECHNOLOGY.

In this Act, the term "privacy enhancing technology"—

(1) means any software or hardware solution, technical process, or other technological means of mitigating individuals' privacy risks arising from data processing by enhancing predictability, manageability, disassociability, and confidentiality; and

(2) may include—

(A) cryptographic techniques for facilitating computation or analysis on data while mitigating privacy risks;

(B) techniques for publicly sharing data without enabling inferences to be made about specific individuals;

(C) techniques for giving individuals' control over the dissemination, sharing, and use of their data;

(D) techniques for generating synthetic data; and

(E) any other technology or approach that reduces the risk of re-identification, including when combined with other information.

SEC. 3. NATIONAL SCIENCE FOUNDATION SUPPORT OF RESEARCH ON PRIVACY ENHANCING TECHNOLOGY.

The Director of the National Science Foundation, in consultation with other relevant Federal agencies (as determined by the Director), shall support merit-reviewed and competitively awarded research on privacy enhancing technologies, which may include—

(1) fundamental research on technologies for de-identification, pseudonymization, anonymization, or obfuscation to mitigate individuals' privacy risks in data sets while maintaining fairness, accuracy, and efficiency;

(2) fundamental research on algorithms and other similar mathematical tools used to protect individual privacy when collecting, storing, sharing, analyzing, or aggregating data;

(3) fundamental research on technologies that promote data minimization in data collection, sharing, and analytics that takes into account the trade-offs between the data minimization goals and the informational goals of data collection;

(4) research awards on privacy enhancing technologies coordinated with other relevant Federal agencies and programs;

(5) supporting education and workforce training research and development activities, including re-training and upskilling of the existing workforce, to grow the number of privacy enhancing technology researchers and practitioners;

(6) multidisciplinary socio-technical research that fosters broader understanding of privacy preferences, requirements, and human behavior to inform the design and adoption of effective privacy solutions;

(7) development of freely available privacy enhancing technology software libraries, platforms, and applications; and

(8) fundamental research on techniques that may undermine the protections provided by privacy enhancing technologies, the limitations of the protections provided by privacy enhancing technologies, and the trade-offs between privacy and utility required for their deployment.

SEC. 4. INTEGRATION INTO THE COMPUTER AND NETWORK SECURITY PROGRAM.

Subparagraph (D) of section 4(a)(1) of the Cyber Security Research and Development Act (15 U.S.C. 7403(a)(1)(D)) is amended to read as follows:

"(D) privacy and confidentiality, including privacy enhancing technologies;".

SEC. 5. COORDINATION WITH THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY AND OTHER STAKEHOLDERS.

(a) IN GENERAL.—The Director of the Office of Science and Technology Policy, acting through the Networking and Information Technology Research and Development Program, shall coordinate with the Director of the National Science Foundation, the Director of the National Institute of Standards and Technology, the Federal Trade Commission, and the heads of other Federal agencies, as appropriate, to accelerate the development, deployment, and adoption of privacy enhancing technologies.

(b) OUTREACH.—The Director of the National Institute of Standards and Technology shall conduct outreach to—

(1) receive input from private, public, and academic stakeholders on the development of privacy enhancing technologies; and

(2) facilitate and support ongoing public and private sector engagement to inform the development and dissemination of voluntary, consensus-based technical standards, guidelines, methodologies, procedures, and processes to cost-effectively increase the integration of privacy enhancing technologies in data collection, sharing, and analytics performed by the public and private sectors.

SEC. 6. REPORT ON PRIVACY ENHANCING TECHNOLOGY RESEARCH.

Not later than 3 years after the date of enactment of this Act, the Director of the Office of Science and Technology Policy, acting through the Networking and Information Technology Research and Development Program, shall, in coordination with the Director of the National Science Foundation, the Director of the National Institute of Standards and Technology, and the heads of other Federal agencies, as appropriate, submit to the Committee on Commerce, Science, and Transportation of the Senate, the Subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the Senate, the Committee on Science, Space, and Technology of the House of Representatives, and the Subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the House of Representatives, a report containing—

(1) the progress of research on privacy enhancing technologies;

(2) the progress of the development of voluntary resources described under section 5(b)(2); and

(3) any policy recommendations that could facilitate and improve communication and coordination between the private sector and relevant Federal agencies for the implementation and adoption of privacy enhancing technologies.

SEC. 7. PROTECTING PERSONAL IDENTIFYING INFORMATION.

Any personal identifying information collected or stored through the activities authorized in this Act shall be done in accordance with section 690 of title 45, Code of Federal Regulations (relating to the protection of human subjects), or any successor regulation.

II. PURPOSE OF THE BILL

The purpose of the H.R. 847, the Promoting Digital Privacy Technologies Act, is to support research on privacy enhancing technologies and promote responsible data use.

III. BACKGROUND AND NEED FOR THE LEGISLATION

Data about individuals is being generated at an increasing rate as more services rely on advertising to operate, and more devices are connected to the Internet. While Congress has not passed a general data protection law to promote the responsible use of this data, a number of U.S. states and other countries have started creating privacy laws that implicate organizations of all types and sizes. As a result, organizations are increasingly looking for low-cost and effective technologies and techniques to help them preserve the privacy of their consumers and employees. Privacy enhancing technologies (PETs), such as differential privacy and secure multiparty computation, have the potential to strengthen consumer privacy while still enabling the use of consumer data. PETs may also help with the implementation of other laws that encourage research activities that use large amounts of data, such as the National Artificial Intelligence Initiative Act (P.L. 116–283) and the Digital Accountability and Transparency Act (P.L. 113–101). However, the application of modern PETs is limited. Additional research and standard setting activities are necessary to broaden the applicability of the technology and encourage its further development and adoption. In addition, barriers remain to the successful

coordination, development, and adoption of PETs by Federal agencies, especially for public health research.

The National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST) are key agencies for privacy research and standards development. NSF has a long history of funding fundamental research and education activities related to privacy technologies. Similarly, NIST has long carried out research on privacy to inform the development and standardization of technologies that access personal data. For example, NIST created privacy standards for Federal systems in response to the Privacy Act of 1974 (P.L. 93–579). In 2020, NIST released the NIST Privacy Framework to help organizations identify and manage their privacy risks.

IV. COMMITTEE HEARINGS

Pursuant to House rule XIII, clause 3(c)(6), the Committee designates the following hearings as having been used to develop or consider the legislation:

On March 11, 2020, the Subcommittee on Research and Technology held a hearing entitled, "Reauthorization of the National Institute of Standards and Technology." The hearing included discussion of major areas of research under the National Institute of Standards and Technology laboratory programs, the agency's role in working with industry to advance U.S. competitiveness through standards development, and specifically NIST's work on a Privacy Framework. The Honorable Walter G. Copan, Undersecretary of Commerce for Standards and Technology and Director for the National Institute of Standards and Technology, testified before the committee.

On Wednesday, April 28, 2021, the Subcommittee on Research and Technology held a hearing held a hearing entitled, "National Science Foundation: Advancing Research for The Future of U.S. Innovation." The hearing included discussion of opportunities and challenges for leveraging and expanding the National Science Foundation mission to continue to advance excellent research; accelerating research to address major societal challenges; and specifically a proposal for NSF to create a secure national data service. The hearing witnesses included Dr. Sethuraman Panchanathan, Director of the National Science Foundation, and Dr. Ellen Ochoa, Chair of the National Science Board.

On September 28, 2021, the Investigations and Oversight Subcommittee held a hearing entitled, "The Disinformation Black Box: Researching Social Media Data." The hearing included discussion of how researchers are able to access and analyze data from social media companies. Researchers testified about their work looking into the spread of misinformation and disinformation on social media platforms and how platforms drive traffic to advertisements and promoted posts. The hearing also explored the limitations of current tools, techniques, and datasets for researching social media platforms and how researchers have utilized information available to advertisers to flag privacy concerns to the platforms. The hearing examined how the Federal government can contribute to the ethical study of social media's impact on society while protecting the privacy of users. The hearing witnesses included Dr. Alan Mislove, Professor and Interim Dean of Khoury College of Com-

puter Sciences at Northeastern University; Ms. Laura Edelson, Ph.D. Candidate and Co-Director of Cybersecurity for Democracy at New York University; and Dr. Kevin Leicht, Professor at the University of Illinois Urbana-Champaign Department of Sociology.

V. Committee Consideration and Votes

On January 19, 2022, the Full Committee on Science, Space, and Technology met to consider H.R. 847. Ms. Stevens offered an amendment in the nature of a substitute to make technical changes throughout the bill and update provisions in response to stakeholder feedback and Committee Member priorities, including expanding research provisions and ensuring OSTP coordinates PET research activities broadly across the Federal government. *The amendment was agreed to on a voice vote*. Ms. Stevens offered an amendment to make technical changes to the bill in response to agency technical assistance, including updating the definitions in the bill. *The amendment was agreed to on a voice vote*. Mr. Posey offered an amendment to ensure any personally identifiable information collected or stored through the activities in the Act would follow human subject data protections. *The amendment was agreed to on a voice vote*.

VI. Summary of Major Provisions of the Bill

Directs NSF to support competitive research on PETs, including through integration into research programs supported by the Directorate for Computer and Information Science and Engineering. Directs OSTP, in collaboration with other relevant Federal agencies, to accelerate the development, deployment and adoption of PETs. Directs NIST to conduct outreach to promote development of PETs. Requires a report to Congress 2 years after enactment.

VII. Section-by-Section Analysis (by Title and Section)

Sec. 1. Short title; Table of Contents

Sec. 2. Definitions

Sec. 3. National Science Foundation support of research on privacy enhancing technology

Directs the NSF to support competitive, fundamental research on privacy enhancing technologies.

Sec. 4. Integration into the computer and network security program

Adds privacy enhancing technologies to a list of research areas supported by the NSF Directorate for Computer and Information Science and Engineering.

Sec. 5. Coordination with the National Institute of Standards and Technology and other stakeholders

Directs OSTP to coordinate activities related to privacy enhancing technologies between NSF, NIST, and the FTC. Directs NIST to conduct outreach and disseminate voluntary, consensus-based resources to facilitate the development of privacy enhancing technologies.

Sec. 6. Report on research and standards development

Directs OSTP to submit a report to Congress after 2 years that tracks the progress of privacy enhancing technology development and resources developed under Section 5, as well as makes recommendations to improve the coordination between Federal agencies and the private sector on privacy enhancing technologies.

VIII. COMMITTEE VIEWS

Interagency Coordination—The Committee encourages NIST to coordinate its outreach activities with other Federal agencies that conduct activities related to privacy enhancing technologies, including the National Institutes of Health, the Centers for Disease Control, and the intelligence community.

IX. COST ESTIMATE

Pursuant to clause 3(c)(2) of rule XIII of the Rules of the House of Representatives, the Committee adopts as its own the estimate of new budget authority, entitlement authority, or tax expenditures or revenues contained in the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974.

X. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, April 20, 2022.

Hon. EDDIE BERNICE JOHNSON,
Chairwoman, Committee on Science, Space, and Technology,
House of Representatives, Washington, DC.

DEAR MADAM CHAIRWOMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 847, the Promoting Digital Privacy Technologies Act.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Janani Shankaran.

Sincerely,

PHILLIP L. SWAGEL,
Director.

Enclosure.

H.R. 847, Promoting Digital Privacy Technologies Act
As ordered reported by the House Committee on Science, Space, and Technology on January 19, 2022

By Fiscal Year, Millions of Dollars	2022	2022-2026	2022-2031
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	*	2	not estimated

Statutory pay-as-you-go procedures apply?	No	**Mandate Effects**	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2032?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

* = between zero and $500,000.

H.R. 847 would direct the National Institute of Standards and Technology (NIST) to conduct outreach on privacy-enhancing technologies and would require the National Science Foundation (NSF) to support related research. The bill also would direct the Office of Science and Technology Policy to report to the Congress on research in privacy-enhancing technologies and related policy recommendations.

Based on the costs of similar activities, CBO estimates that NIST would need three employees at an average annual cost of $175,000 annually to conduct the outreach. In recent years, the NSF has awarded between $20 million and $40 million annually in grants to support research on privacy-enhancing technologies. On that basis, CBO estimates that any additional costs incurred by the NSF under H.R. 847 would not be significant. In addition, CBO estimates that cost of the required report would be insignificant. In total, CBO estimates that implementing H.R. 847 would cost $2 million over the 2022–2026 period; such spending would be subject to the availability of appropriated funds.

The CBO staff contacts for this estimate are Janani Shankaran and David Hughes. The estimate was reviewed by H. Samuel Papenfuss, Deputy Director of Budget Analysis.

XI. Federal Mandates Statement

H.R. 847 contains no unfunded mandates.

XII. Committee Oversight Findings and Recommendations

The Committee's oversight findings and recommendations are reflected in the body of this report.

XIII. Statement on General Performance Goals and Objectives

The goals and objectives of H.R. 847 are to authorize research and standards setting activities at the National Science Foundation (NSF) and the National Institute of Standards and Technology

(NIST) for privacy enhancing technologies. The bill also promotes interagency coordination on privacy enhancing technologies.

XIV. Federal Advisory Committee Statement

H.R. 847 does not authorize an advisory committee.

XV. Duplication of Federal Programs

Pursuant to clause 3(c)(5) of rule XIII of the Rules of the House of Representatives, the Committee finds that no provision of H.R. 847 establishes or reauthorizes a program of the federal government known to be duplicative of another federal program, including any program that was included in a report to Congress pursuant to section 21 of Public Law 111–139 or the most recent Catalog of Federal Domestic Assistance.

XVI. Earmark Identification

Pursuant to clause 9(e), 9(f), and 9(g) of rule XXI, the Committee finds that H.R. 847 contains no earmarks, limited tax benefits, or limited tariff benefits.

XVII. Applicability to the Legislative Branch

The Committee finds that H.R. 847 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

XVIII. Statement on Preemption of State, Local, or Tribal Law

This bill is not intended to preempt any state, local, or tribal law.

XIX. Changes in Existing Law Made by the Bill, as Reported

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italics, and existing law in which no change is proposed is shown in roman):

CYBER SECURITY RESEARCH AND DEVELOPMENT ACT

* * * * * * *

SEC. 4. NATIONAL SCIENCE FOUNDATION RESEARCH.

(a) Computer and Network Security Research Grants.—

(1) In general.—The Director shall award grants for basic research on innovative approaches to the structure of computer and network hardware and software that are aimed at enhancing computer security. Research areas may include—

(A) authentication, cryptography, and other secure data communications technology;

(B) computer forensics and intrusion detection;

(C) reliability of computer and network applications, middleware, operating systems, control systems, and communications infrastructure;

[(D) privacy and confidentiality;]

(D) privacy and confidentiality, including privacy enhancing technologies;

(E) network security architecture, including tools for security administration and analysis;

(F) emerging threats;

(G) vulnerability assessments and techniques for quantifying risk;

(H) remote access and wireless security;

(I) enhancement of law enforcement ability to detect, investigate, and prosecute cyber-crimes, including those that involve piracy of intellectual property;

(J) secure fundamental protocols that are integral to inter-network communications and data exchange;

(K) secure software engineering and software assurance, including—

(i) programming languages and systems that include fundamental security features;

(ii) portable or reusable code that remains secure when deployed in various environments;

(iii) verification and validation technologies to ensure that requirements and specifications have been implemented; and

(iv) models for comparison and metrics to assure that required standards have been met;

(L) holistic system security that—

(i) addresses the building of secure systems from trusted and untrusted components;

(ii) proactively reduces vulnerabilities;

(iii) addresses insider threats; and

(iv) supports privacy in conjunction with improved security;

(M) monitoring and detection;

(N) mitigation and rapid recovery methods;

(O) security of wireless networks and mobile devices;

(P) security of cloud infrastructure and services;

(Q) security of election-dedicated voting system software and hardware; and

(R) role of the human factor in cybersecurity and the interplay of computers and humans and the physical world.

(2) MERIT REVIEW; COMPETITION.—Grants shall be awarded under this section on a merit-reviewed competitive basis.

(3) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation to carry out this subsection—

(A) $35,000,000 for fiscal year 2003;

(B) $40,000,000 for fiscal year 2004;

(C) $46,000,000 for fiscal year 2005;

(D) $52,000,000 for fiscal year 2006; and

(E) $60,000,000 for fiscal year 2007.

(b) COMPUTER AND NETWORK SECURITY RESEARCH CENTERS.—

(1) IN GENERAL.—The Director shall award multiyear grants, subject to the availability of appropriations, to institutions of higher education, nonprofit research institutions, or consortia thereof to establish multidisciplinary Centers for Computer and Network Security Research. Institutions of higher education, nonprofit research institutions, or consortia thereof receiving such grants may partner with 1 or more government laboratories or for-profit institutions, or other institutions of higher education or nonprofit research institutions.

(2) MERIT REVIEW; COMPETITION.—Grants shall be awarded under this subsection on a merit-reviewed competitive basis.

(3) PURPOSE.—The purpose of the Centers shall be to generate innovative approaches to computer and network security by conducting cutting-edge, multidisciplinary research in computer and network security, including improving the security and resiliency of information technology, reducing cyber vulnerabilities, and anticipating and mitigating consequences of cyber attacks on critical infrastructure, by conducting research in the areas described in subsection (a)(1).

(4) APPLICATIONS.—An institution of higher education, nonprofit research institution, or consortia 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. The application shall include, at a minimum, a description of—

(A) the research projects that will be undertaken by the Center and the contributions of each of the participating entities;

(B) how the Center will promote active collaboration among scientists and engineers from different disciplines, such as computer scientists, engineers, mathematicians, and social science researchers;

(C) how the Center will contribute to increasing the number and quality of computer and network security researchers and other professionals, including individuals from groups historically underrepresented in these fields; and

(D) how the Center will disseminate research results quickly and widely to improve cyber security in information technology networks, products, and services.

(5) CRITERIA.—In evaluating the applications submitted under paragraph (4), the Director shall consider, at a minimum—

(A) the ability of the applicant to generate innovative approaches to computer and network security and effectively carry out the research program;

(B) the experience of the applicant in conducting research on computer and network security and the capacity of the applicant to foster new multidisciplinary collaborations;

(C) the capacity of the applicant to attract and provide adequate support for a diverse group of undergraduate and graduate students and postdoctoral fellows to pursue computer and network security research;

(D) the extent to which the applicant will partner with government laboratories, for-profit entities, other institutions of higher education, or nonprofit research institutions, and the role the partners will play in the research undertaken by the Center;

(E) the demonstrated capability of the applicant to conduct high performance computation integral to complex computer and network security research, through on-site or off-site computing;

(F) the applicant's affiliation with private sector entities involved with industrial research described in subsection (a)(1);

(G) the capability of the applicant to conduct research in a secure environment;

(H) the applicant's affiliation with existing research programs of the Federal Government;

(I) the applicant's experience managing public-private partnerships to transition new technologies into a commercial setting or the government user community;

(J) the capability of the applicant to conduct interdisciplinary cybersecurity research, basic and applied, such as in law, economics, or behavioral sciences; and

(K) the capability of the applicant to conduct research in areas such as systems security, wireless security, networking and protocols, formal methods and networking and information technology, nanotechnology, or industrial control systems.

(6) ANNUAL MEETING.—The Director shall convene an annual meeting of the Centers in order to foster collaboration and communication between Center participants.

(7) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated for the National Science Foundation to carry out this subsection—

(A) $12,000,000 for fiscal year 2003;

(B) $24,000,000 for fiscal year 2004;

(C) $36,000,000 for fiscal year 2005;

(D) $36,000,000 for fiscal year 2006; and

(E) $36,000,000 for fiscal year 2007.

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XX. PROCEEDINGS OF COMMITTEE MARKUP

MARKUP: H.R. 847, THE PROMOTING DIGITAL PRIVACY TECHNOLOGIES ACT; H.R. 4270, THE ABANDONED WELL REMEDIATION RESEARCH AND DEVELOPMENT ACT; H.R. 4521, THE BIOECONOMY RESEARCH AND DEVELOPMENT ACT OF 2021; H.R. 4819, THE NATIONAL NUCLEAR UNIVERSITY RESEARCH INFRASTRUCTURE REINVESTMENT ACT OF 2021; H.R. 6291, THE MICROELECTRONICS RESEARCH FOR ENERGY INNOVATION ACT OR "MICRO ACT"

MARKUP

BEFORE THE

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

OF THE

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

SECOND SESSION

JANUARY 19, 2022

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COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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C O N T E N T S

January 19, 2022

Amendment Roster

H.R. 4521, THE BIOECONOMY RESEARCH AND DEVELOPMENT ACT OF 2021

H.R. 847, THE PROMOTING DIGITAL PRIVACY TECHNOLOGIES ACT

H.R. 4270, THE ABANDONED WELL REMEDIATION RESEARCH AND DEVELOPMENT ACT

H.R. 4819, THE NATIONAL NUCLEAR UNIVERSITY RESEARCH INFRASTRUCTURE REINVESTMENT ACT OF 2021

H.R. 6291, THE MICROELECTRONICS RESEARCH FOR ENERGY INNOVATION ACT

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H.R. 6291, THE MICROELECTRONICS RESEARCH FOR ENERGY INNOVATION ACT OR MICRO ACT

WEDNESDAY, JANUARY 19, 2022

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, D.C.

The Committee met, pursuant to notice, at 10:04 a.m., via Zoom, Hon. Eddie Bernice Johnson [Chairwoman of the Committee] presiding.

Chairwoman JOHNSON. Good morning, and happy New Year. The Committee will come to order. And without objection, the Chair is authorized to declare recess at any time.

Pursuant to Committee rule 2(e) and House rule XI, the Committee announces that we may postpone any request for roll call votes.

Today, the Committee is meeting virtually. I want to announce a couple of reminders to our Members about the conduct of this meeting. First, Members should keep their video feed on as long as they are present in the meeting. Members are responsible for their own microphones. Please also keep your microphones muted unless you are speaking. And finally, if Members have documents they

wish to submit to the record, please email them to the Committee Clerk, whose email address was circulated prior to this meeting.

Pursuant to notice, the Committee meets to consider the following measures: H.R. 4521, the *Bioeconomy Research and Development Act of 2021*; H.R. 847, the *Promoting Digital Private—Privacy Technologies Act*; H.R. 4270, the *Abandoned Well Remediation Research and Development Act*; H.R. 4819, the *National Nuclear University Research Infrastructure Reinvestment Act of 2021*; H.R. 6291, the *Microelectronics Research for Energy Innovation Act*, or the *Micro Act.*

Let me welcome all of you to the first Science Committee markup of 2022. Today, we're marking up those five good bipartisan bills. The first bill to be considered is the *Bioeconomy Research and Development Act.* I want to first thank Ranking Member Lucas for partnering with me on this bill. This legislation creates a national engineering biology initiative in support of U.S. leadership in the 21st century bioeconomy. Advances in engineering biology will drive innovation across nearly all sectors of our economy. Europe and China long ago took steps to implement a bioeconomy strategy. Our own efforts have progressed in fits and starts. The time to implement a coherent national strategy is now. I'll speak more about this bill when it's called up.

The next item we will take up today is *Promoting Digital Privacy Technologies Act.* I want to thank Representative Stevens and Gonzalez for their thoughtful work on this legislation. Privacy-enhancing technologies have the potential to vastly improve the way we protect people's privacy when processing information about them. This bill seeks to accelerate the development of these technologies. It would fund research into privacy-enhancing technologies at the National Science Foundation (NSF). It would also authorize outreach and standards-setting activities at the National Institute of Standards and Technology (NIST). And finally, the bill promotes coordination on the development of these technologies across the Federal Government. Getting privacy right in a way that allows for effective use of information is a difficult challenge. This bill will promote new avenues of research to strike that balance.

I'm happy to be an original cosponsor, along with Ranking Member Lucas, on the next bill we're marking up, *Abandoned Well Remediation Research and Development Act,* introduced by Mr. Lamb and Mrs. Bice. The bipartisan bill creates a research, development, and demonstration program at the Department of Energy to tackle the ever-growing problem of advanced oil and gas well pumps—oil and gas wells in the United States. It would increase the efficiency of remediation, mitigate environmental harms, and reduce methane emissions. It would also improve technologies to enable the widespread mapping of unrecorded abandoned wells across the country, some of which can date back as far as 1850's. As we transition to a clean energy economy, it is critical that we have sound and proven technologies to mitigate the harmful methane emissions of hundreds of thousands if not millions of abandoned wells in our communities.

The next bill we will consider is the *National Nuclear University Research Infrastructure Reinvestment Act of 2021* introduced by Representatives Gonzalez, Foster, Casten, and Meijer. This bill

builds off historic nuclear energy research and development (R&D) legislation enacted into law as a part of the *Energy Act of 2020.* The bill has two major thrusts: first, to ensure existing nuclear energy university infrastructure is well-maintained and potentially upgraded; and second, to build new nuclear science and engineering university facilities. And the bill also places strong emphasis on ensuring all activities included—include a wide variety of participants beyond those who already have established nuclear science capabilities, including historically Black colleges and universities (HBCU), tribal colleges, or universities of other minority-serving institutions.

And finally, the last bill we'll consider today is the *Microelectronics Research for Energy Innovation Act*, which was sponsored by Representatives Tonko and Ellzey. This legislation seeks to leverage the unique capabilities and technical expertise of the Department of Energy to accelerate transformative advancements in the field of microelectronics, which play an increasingly significant role in our daily lives and which are essential to maintaining U.S. national security and global economic and scientific leadership. Specifically, this bill would direct the Secretary of Energy to carry out a crosscutting initiative in microelectronics, including research activities aimed at driving progress in related scientific fields, as well as large-scale center-based efforts focused on addressing specific challenges. The bill also includes an emphasis on work force development, education, and outreach to ensure that we're engaging students of all ages in this exciting field and laying the groundwork for the microelectronics work force of the future. I urge my colleagues to support this important legislation.

And finally, I want to address a topic that came up very late in this process. Groups approached us yesterday afternoon asking to add in Davis-Bacon prevailing wage requirements to three of the bills we are marking up today. This was much too late in the process to try and deal with this issue. While I am a supporter of Davis-Bacon, some of my friends on the other side of the aisle are not. Trying to address this issue while maintaining strong bipartisan support is something that simply cannot be done in a hasty fashion. I know the gentleman from New Jersey is a strong advocate for Davis-Bacon, and I'd like to try and find a path forward on this issue as we move forward. However, I don't want to sugarcoat how difficult addressing this issue will be while maintaining bipartisan support of the legislation.

Now, let me just say a little bit about my history with labor. My first job as a supervisor at the VA (Veterans Affairs) hospital in Dallas, Texas, I organized a union when I could not be a member. I support unions. I am a dues-paying member of a union right now. I am not antiunion, but we do have to consider timeliness and appropriateness as we move forth in this scientific direction of our responsibilities in this Committee.

[The prepared statement of Chairwoman Johnson follows:]

Welcome to the first Science Committee markup of 2022. Today we are marking up five good bipartisan bills.

The first bill to be considered is the *Bioeconomy Research and Development Act.* I first want to thank Ranking Member Lucas for partnering with me on this bill. This legislation creates a national engineering biology initiative in support of U.S. leadership in the 21st Century Bioeconomy.

Advances in engineering biology will drive innovation across nearly all sectors of our economy. Europe and China long ago took steps to implement a bioeconomy strategy. Our own efforts have progressed in fits and starts. The time to implement a coherent national strategy is now. I'll speak more about this bill when we call it up.

The next item we will take up today is the *Promoting Digital Privacy Technologies Act.* I want to thank Representatives Stevens and Gonzalez for their thoughtful work on this legislation. Privacy-enhancing technologies (PETs) have the potential to vastly improve the way we protect peoples' privacy when processing information about them. This bill seeks to accelerate the development of these technologies. It would fund research into privacy-enhancing technologies at the National Science Foundation. It would also authorize outreach and standard-setting activities at the National Institute of Standards and Technology. Finally, the bill promotes coordination on the development of these technologies across the Federal government. Getting privacy right in a way that allows for the effective use of information is a difficult challenge. This bill will promote new avenues of research to strike that balance.

I am happy to be an original cosponsor, along with Ranking Member Lucas, on the next bill we are marking up: the *Abandoned Well Remediation Research and Development Act,* introduced by Mr. Lamb and Ms. Bice. This bipartisan bill creates a research, development, and demonstration program at the Department of Energy to tackle the ever-growing problem of abandoned oil and gas wells in the U.S. It would increase the efficiency of remediation, mitigate environmental harms, and reduce methane emissions. It would also improve technologies to enable the widespread mapping of unrecorded abandoned wells around the country, some of which can date back as far as the 1850s. As we transition to a clean energy economy, it is critical that we have sound and proven technologies to mitigate the harmful methane emissions of hundreds of thousands, if not millions of abandoned wells in our communities.

The next bill we will consider is the *National Nuclear University Research Infrastructure Reinvestment Act of 2021,* introduced by Representatives Gonzalez, Foster, Casten, and Meijer. This bill builds off historic nuclear energy research and development legislation enacted into law as part of the *Energy Act of 2020.*

The bill has two major thrusts - first, to ensure existing nuclear energy university infrastructure is well-maintained and potentially upgraded; and second, to build new nuclear science and engineering university facilities. And the bill also places strong emphasis on ensuring all activities include a wide variety of participants beyond those who already have established nuclear science capabilities, including historically Black colleges and universities, Tribal colleges or universities, and other minority-serving institutions.

Finally, the last bill we will consider to today is the *Microelectronics Research for Energy Innovation Act,* which was sponsored by Representatives Tonko and Ellzey. This legislation seeks to leverage the unique capabilities and technical expertise of the Department of Energy to accelerate transformational advancements in the field of microelectronics, which play an increasingly significant role in our daily lives, and which are essential to maintaining U.S. national security and global economic and scientific leadership. Specifically, this bill would direct the Secretary of Energy to carry out a crosscutting initiative in microelectronics, including research activities aimed at driving progress in related scientific fields as well as large-scale, center-based efforts focused on addressing specific challenges. The bill also includes an emphasis on workforce development, education, and outreach to ensure that we are engaging students of all ages in this exciting field and laying the groundwork for the microelectronics workforce of the future. I urge my colleagues to support this important legislation.

Finally, I want to address a topic that came up very late in the process. Groups approached us yesterday afternoon asking to add in Davis Bacon prevailing wage requirements to three of the bills we are marking up today. This was much too late in the process to try and deal with this issue. While I am a supporter of Davis Bacon, some of my friends on the other side of the aisle are not. Trying to address this issue while maintaining strong bipartisan support is something that simply could not be done in a hasty fashion.

I know the gentleman from New Jersey is a strong advocate for Davis Bacon, and I would like to try and find a path forward on this issue as we move forward. However, I don't want to sugar coat how difficult addressing this issue will be while maintaining bipartisan support for the legislation.

Chairwoman JOHNSON. Now, I will recognize our Ranking Member, Mr. Lucas, for his opening remarks.

Mr. LUCAS. Thank you, Chairwoman Johnson, for holding today's markup. This morning we will consider five bipartisan bills. The first, the *Bioeconomy Research and Development Act of 2021,* is a bill I am proud to sponsor with the Chairwoman. I'll discuss this legislation further when the Chair brings it up for debate and I'll offer an amendment.

The second bill is H.R. 847, the *Promoting Digital Privacy Technologies Act.* This legislation supports research activities to advance innovative technologies to safeguard every individuals' privacy. As advanced technologies like AI (artificial intelligence) begin accessing and analyzing large data sets, it will be critical we have technologies to ensure people's personally identity information is protected.

The legislation also directs NIST to work with stakeholders to develop voluntary consensus standards for incorporating these technologies into Federal and commercial applications. I want to thank Chairwoman Stevens and Representative Gonzalez for leading this important legislation. I encourage my colleagues to support the bill.

The third bill is H.R. 4270, the *Abandoned Well Remediation Research and Development Act.* This legislation authorizes DOE (Department of Energy) to conduct research on issues surrounding abandoned wells. The bill will allow us to improve data on the location of abandoned wells; identify better processes for plugging, reclaiming, and repurposing wells; and help us mitigate the potential environmental impacts of leaking wells.

This is a major issue for Oklahoma and my district. Drive across the State and you'll see countless wells sitting on top of some of the world's largest gas and oil fields. This bill will help give producers, landowners, and State and local governments the tools they need to manage these wells. I applaud my fellow Oklahoman, Representative Stephanie Bice, for working with Representative Lamb on this important bipartisan legislation.

The fourth bill we'll consider is H.R. 4819, the *National Nuclear University Research Infrastructure Reinvestment Act of 2021.* The bill, authored by Representative Anthony Gonzalez, builds off of improvements to the Nuclear Energy University Program included in the *Energy Act of 2020.* It will establish up to four new university-based research reactors, which would be able to collaborate and help the Advanced Reactor Demonstration Program and the Low-Dose Radiation Program.

I thank Representative Gonzalez and Representative Foster for working together on this bipartisan bill to advance our Nation's nuclear energy capacities. Nuclear energy is critical to our Nation's energy security and independence. This bill will help ensure we are developing the work force and advanced reactors of the future to make this a reality.

Finally, we'll consider H.R. 6291, the *Microelectronics Research for Energy Innovation Act,* or the *Micro Act.* The bill directs DOE to carry out a crosscutting research, development, and demonstration program on microelectronics to accelerate U.S. global competitiveness in this critical technology area. DOE possesses unique technical expertise and research infrastructure that can help drive the development of the next generation of microelectronics. The De-

partment and its world-leading national laboratory system must play a significant role in our Federal strategy to shore up our international competitiveness in the microelectronics field and confront related national security threats.

The legislation complements the *CHIPS Act,* signed into law last year, to address the decline of domestic semiconductor manufacturing and promote advanced semiconductor development in the United States. The *Micro Act* will help ensure DOE's critical participation in this work and should be considered alongside *DOE Science for the Future Act* as an essential component of a U.S. competitiveness legislation package. I want thank Representative Tonko and Representative Ellzey for working on this important bipartisan piece of legislation.

Each of these bills harnesses America's incredible scientific and technological prowess to address pressing challenges and improve our future. This is a great example of what the Science Committee can do when we work together.

I want to thank Chairwoman Johnson and her staff for working collaboratively on getting these bills ready for the markup and for working through the amendments we'll consider today. I have every expectation this will be both a productive and a collegial markup.

And with that, I enthusiastically yield back, Madam Chair.

Chairwoman JOHNSON. Thank you very much, Mr. Lucas.

I see that Mr. Norcross has his hand up. I recognize you.

Mr. NORCROSS. Thank you, Madam Chairwoman, and appreciate the recognition to you and the Ranking Member. The issue of Davis-Bacon coming up at the last moment certainly is something that we wish we could deal with much earlier. There is nothing new about Davis-Bacon. But if we look to expand the standards across the board, nontraditional, education, things of that nature, Davis-Bacon is incredibly important. We are finding trouble getting those working men and women into the trades right now. This will only make things worse when we exclude those. So I very much appreciate the fact that we're having the discussion.

And in fact, I would suggest it's not an either/or but it is both. We need the best research and we need the best people to help build those things, so moving forward, very much want to have the conversation where it's a win-win and not trying to limit those and build these facilities and hurting them. So, again, I appreciate—and I've spoken to many Members of the Committee. We'll try to address this earlier on but very much appreciate because on the other side of the Capitol, the Senate has included Davis-Bacon in much of the things that are going to be included, so I think we're going to have an opportunity and just wanted to again thank the Ranking Member and Chairwoman for working with us.

Chairwoman JOHNSON. Thank you very much.

We will now consider H.R. 847, the *Promoting Digital Privacy Technologies Act.* The Clerk will report the bill.

The CLERK. H.R. 847, to support research on privacy, enhancing technologies, and promote responsible data use and for other purposes.

[The bill follows:]

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117TH CONGRESS
1ST SESSION

H. R. 847

To support research on privacy enhancing technologies and promote responsible data use, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 4, 2021

Ms. STEVENS (for herself and Mr. GONZALEZ of Ohio) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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A BILL

To support research on privacy enhancing technologies and promote responsible data use, and for other purposes.

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 "Promoting Digital Privacy Technologies Act".

SEC. 2. DEFINITIONS.

In this Act:

(1) PERSONAL DATA.—The term "personal data" means information that identifies, is linked to,

or is reasonably linkable to, an individual or a consumer device, including derived data.

(2) PRIVACY ENHANCING TECHNOLOGY.—The term "privacy enhancing technology"—

(A) means any software solution, technical processes, or other technological means of enhancing the privacy and confidentiality of an individual's personal data in data or sets of data; and

(B) includes anonymization and pseudonymization techniques, filtering tools, anti-tracking technology, differential privacy tools, synthetic data, and secure multi-party computation.

SEC. 3. NATIONAL SCIENCE FOUNDATION SUPPORT OF RESEARCH ON PRIVACY ENHANCING TECHNOLOGY.

The Director of the National Science Foundation, in consultation with other relevant Federal agencies (as determined by the Director), shall support merit-reviewed and competitively awarded research on privacy enhancing technologies, which may include—

(1) fundamental research on technologies for de-identification, pseudonymization, anonymization,

or obfuscation of personal data in data sets while maintaining fairness, accuracy, and efficiency;

(2) fundamental research on algorithms and other similar mathematical tools used to protect individual privacy when collecting, storing, sharing, or aggregating data;

(3) fundamental research on technologies that promote data minimization principles in data collection, sharing, and analytics; and

(4) research awards on privacy enhancing technologies coordinated with other relevant Federal agencies and programs.

SEC. 4. INTEGRATION INTO THE COMPUTER AND NETWORK SECURITY PROGRAM.

Subparagraph (D) of section 4(a)(1) of the Cyber Security Research and Development Act (15 U.S.C. 7403(a)(1)(D)) is amended to read as follows:

"(D) privacy enhancing technologies and confidentiality;".

SEC. 5. COORDINATION WITH THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY AND OTHER STAKEHOLDERS.

(a) IN GENERAL.—The Director of the Office of Science and Technology Policy, acting through the Networking and Information Technology Research and Devel-

opment Program, shall coordinate with the Director of the National Science Foundation, the Director of the National Institute of Standards and Technology, and the Federal Trade Commission to accelerate the development and use of privacy enhancing technologies.

(b) OUTREACH.—The Director of the National Institute of Standards and Technology shall conduct outreach to—

(1) receive input from private, public, and academic stakeholders, including the National Institutes of Health and the Centers for Disease Control and Prevention, for the purpose of facilitating public health research, on the development of privacy enhancing technologies; and

(2) develop ongoing public and private sector engagement to create and disseminate voluntary, consensus-based resources to increase the integration of privacy enhancing technologies in data collection, sharing, and analytics by the public and private sectors.

SEC. 6. REPORT ON RESEARCH AND STANDARDS DEVELOPMENT.

Not later than 2 years after the date of enactment of this Act, the Director of the Office of Science and Technology Policy, acting through the Networking and Infor-

mation Technology Research and Development Program, shall, in coordination with the Director of the National Science Foundation and the Director of the National Institute of Standards and Technology, submit to the Committee on Commerce, Science, and Transportation of the Senate, the Subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the Senate, the Committee on Science, Space, and Technology of the House of Representatives, and the Subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the House of Representatives, a report containing—

(1) the progress of research on privacy enhancing technologies;

(2) the progress of the development of voluntary resources described under section 5(b)(2); and

(3) any policy recommendations of the Directors that could facilitate and improve communication and coordination between the private sector, the National Science Foundation, and relevant Federal agencies through the implementation of privacy enhancing technologies.

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Chairwoman JOHNSON. Without objection, the bill is considered as read and open to amendment at any point.

Does anyone wish to be recognized to speak on this underlying bill?

Ms. STEVENS. Madam Speaker, I wish to be recognized. Madam Chair.

Chairwoman JOHNSON. Ms. Stevens—yes, you're recognized for 5 minutes.

Ms. STEVENS. Thank you, Madam Chair. I'm pleased to offer this amendment, this bipartisan amendment in the nature of a substitute for H.R. 847, the *Promoting Digital Privacy Technologies Act.* I want to sincerely thank my colleagues, Representative Gonzalez from Ohio, as well as Senators Catherine Cortez Masto and Senator Deb Fischer, for working with me to introduce this legislation last year.

Americans are online. Practically any digital action that internet users take from social media or shopping online to browsing news or using email creates data that is stored by companies or organizations. More and more data about each and every one of us is being generated faster and faster each day at a rate that history has never seen. In most States companies can use, share, or sell the data they collect. Since most of the data economy is invisible, Americans are not able to see this constant flow of their information.

I believe we can safeguard our most sensitive information online without having to sacrifice innovation. Finding this balance requires us to explore how we can integrate the privacy-enhancing technologies to protect Americans' most sensitive data and also harness new innovation capabilities through these privacy-enhancing technologies.

The *Promoting Digital Privacy Technologies Act* will support research, work force development, standard-setting, and government coordination for privacy-enhancing technologies, or PETs. PETs are a broad range of technologies that allow organizations to collect, share, and use data while mitigating the privacy risks that arise from those activities. Differential privacy, encryption, and secure multiparty computation are just some examples of these technologies. PETs are enabling technologies allowing for the improvement of critical industries of the future such as artificial intelligence and data science without privacy risks. The technologies also have the potential to enable broader use of Federal data sets as privacy risks are often the biggest barrier to open-government efforts.

The amendment in the nature of a substitute to H.R. 847 will support the development, deployment, and adoption of PETs. It directs the National Science Foundation, a favorite of this Committee, to conduct fundamental privacy research that can help improve these technologies, assess their limitations, and broaden their capabilities. This amendment also directs NSF to support work force development activities in order to help address the growing shortage of privacy professionals and researchers across the United States of America.

The amendment supports the activities of another favorite agency of this Committee, the National Institute of Standards and

Technology, to facilitate the development of standards and guidance with the integration of PETs into the public and private sectors.

And finally, this amendment will be directing the White House Office of Science and Technology Policy to coordinate Federal activities to accelerate the development, deployment, and adoption of PETs across the government.

Congress has been considering different proposals for privacy legislation for what seems like decades now. While many of those reforms fall outside the jurisdiction of this Committee, legislation like this that supports privacy research and standard-setting, utilizing and harnessing incredible technologies will help set and address some of the unmet needs.

So we are proud partners—I'm a proud partner of colleagues from across the chamber into the Senate and certainly across the aisle as we work together and to enhance privacy protections for our constituents. This is a phenomenal way to work with the private sector as they help to advise and inform the National Institute of Standards and Technology. This does not need to be seen as regulatory. In fact, it is collaborative and it is enhancing and progressing economies of scale while certainly protecting individual Americans.

So with that, I encourage all of you to support this amendment, and I will yield back.

Chairwoman JOHNSON. Thank you very much.

Does anyone else wish to be recognized at this point to speak on the underlying bill?

Mr. GONZALEZ. Madam Chair, I move to strike the last word.

Chairwoman JOHNSON. Mr. Gonzalez is recognized for 5 minutes.

Mr. GONZALEZ. Thank you, Chairwoman Johnson, for holding this morning's markup of H.R. 847, the *Promoting Digital Privacy Technologies Act.* I'd also like to thank my colleague Ms. Stevens for offering this amendment in the nature of a substitute, which makes important technical changes to the underlying bill, which we introduced nearly a year ago.

Advancements in the utilization of data are helping spur new innovations and advancements in our economy. Data analytics are helping manufacturers improve efficiencies, streamline processes, and cover insights that drive growth such as helping to predict equipment failure and conduct preventative maintenance, excuse me. Our healthcare providers are using—utilizing data to highlight trends and threats and create predictive models. For example, by using big data, researchers can identify disease genes and biomarkers to help patients pinpoint health issues they may face in the future. The results can allow healthcare organizations to design personalized treatments.

More recently, we've seen the use of data analytics to help manage the spread of COVID–19. While this revolution offers an opportunity to solve some of the world's most significant challenges, it certainly raises legitimate privacy questions and concerns about how to best protect our personal data. We must ensure these data analysis innovations do not put Americans' private information at risk.

That is why I was proud to join Chairwoman Stevens in introducing this legislation, which directs the National Science Foundation to support research on privacy-enhancing technologies that will mitigate privacy risks and ensure confidentiality. It also takes steps to improve how business and government integrate privacy-enhancing technologies into daily operations to better safeguard Americans' most sensitive information.

Again, I want to thank Ms. Stevens for working with me on this important legislation and many other things. We work very well together. I encourage my colleagues to support this amendment and this legislation, which takes important steps in ensuring responsible data usage and protecting an individual's privacy.

Thank you, and I yield back the balance of my time.

Mr. GONZALEZ. Chairwoman, you're muted.

Chairwoman JOHNSON. Sorry, I was muted. Anyone else seeking time on this amendment?

Ms. ROSS. Madam Chair, I move to strike the last word. This is Representative Ross.

Chairwoman JOHNSON. You're recognized.

Ms. ROSS. Thank you so much, Madam Chair and Ranking Member. And this is such an incredible bill and such an important issue for our markup today. I also want to thank the sponsors of the bill for bringing it forward.

H.R. 847, the *Promoting Digital Privacy Technologies Act,* authorizes research standards-setting activities at the NSF and NIST for privacy-enhancing technologies. Advancements in large-scale data analysis have led to innovations in the clean energy, healthcare, and manufacturing industries. However, Americans also have the right to privacy and the knowledge that their sensitive personal information is handled in ways consistent with their interests.

My district includes much of the Research Triangle, a major technology and innovation hub. It also includes NC (North Carolina) State University, a preeminent land-grant research institution. That's why I'm particularly pleased that this bill directs agencies to cooperate with public, private, and academic partners to produce consensus, privacy-enhancing standards. This will ensure that we strike the appropriate balance between protecting personal data and fostering the innovation that has made the United States a global technology leader.

I support the bill, and thank you, Madam Chair. I yield back.

Chairwoman JOHNSON. Well, thank you very much.

Now, we have already spoken on the first amendment on this roster, but I must ask Ms. Stevens if you want to be recognized again.

Ms. STEVENS. Yes, to introduce the amendment on the technical corrections, Madam Chair?

STAFF. First, we need to call up this amendment.

Chairwoman JOHNSON. Well, we haven't called up the amendment yet, but most of the statements have been on the substitute on the amendment, and so we're at a point where——

STAFF. You can just ask the Clerk to report the amendment.

Chairwoman JOHNSON. We can ask the Clerk to report the amendment at the desk and then close it out unless there are other statements.

Chairwoman JOHNSON. Would the Clerk report?

The CLERK. Amendment No. 1, amendment in the nature of a substitute to H.R. 847 offered by Ms. Stevens of Michigan.

[The amendment of Ms. Stevens follows:]

AMENDMENT IN THE NATURE OF A SUBSTITUTE

TO H.R. 847

OFFERED BY MS. STEVENS OF MICHIGAN

Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "Promoting Digital Privacy Technologies Act".

SEC. 2. DEFINITIONS.

In this Act:

(1) PERSONAL DATA.—The term "personal data" means information that identifies, is linked to, or is reasonably linkable to, an individual or a consumer device, including derived data that can be used to identify an individual or consumer device.

(2) PRIVACY ENHANCING TECHNOLOGY.—The term "privacy enhancing technology"—

(A) means any software solution, technical processes, or other technological means of enhancing the privacy and confidentiality of an individual's personal data in data or sets of data; and

(B) may include—

(i) techniques for facilitating computation or analysis on personal data while maintaining the confidentiality of that data;

(ii) techniques for safeguarding personal data contained within large datasets;

(iii) techniques for giving individuals' control over the dissemination and use of personal data;

(iv) techniques for generating synthetic data; and

(v) any other technology or approach that reduces the risk of re-identification, including when combined with other information, to provide for reasonable privacy and confidentiality protections.

SEC. 3. NATIONAL SCIENCE FOUNDATION SUPPORT OF RESEARCH ON PRIVACY ENHANCING TECHNOLOGY.

The Director of the National Science Foundation, in consultation with other relevant Federal agencies (as determined by the Director), shall support merit-reviewed and competitively awarded research on privacy enhancing technologies, which may include—

(1) fundamental research on technologies for de-identification, pseudonymization, anonymization, or obfuscation of personal data in data sets while maintaining fairness, accuracy, and efficiency;

(2) fundamental research on algorithms and other similar mathematical tools used to protect individual privacy when collecting, storing, sharing, or aggregating data;

(3) fundamental research on technologies that promote data minimization in data collection, sharing, and analytics that takes into account the trade-offs between the data minimization goals and the informational goals of data collection;

(4) research awards on privacy enhancing technologies coordinated with other relevant Federal agencies and programs;

(5) supporting education and workforce training research and development activities, including retraining and upskilling of the existing workforce, to grow the number of privacy enhancing technology researchers and practitioners;

(6) development of freely available privacy enhancing technology software libraries, platforms, and applications; and

(7) fundamental research on techniques that may undermine the protections provided by privacy enhancing technologies, the limitations of the protections provided by privacy enhancing technologies, and the trade-offs between privacy and utility required for their deployment.

SEC. 4. INTEGRATION INTO THE COMPUTER AND NETWORK SECURITY PROGRAM.

Subparagraph (D) of section 4(a)(1) of the Cyber Security Research and Development Act (15 U.S.C. 7403(a)(1)(D)) is amended to read as follows:

"(D) privacy and confidentiality, including privacy enhancing technologies;".

SEC. 5. COORDINATION WITH THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY AND OTHER STAKEHOLDERS.

(a) IN GENERAL.—The Director of the Office of Science and Technology Policy, acting through the Networking and Information Technology Research and Development Program, shall coordinate with the Director of the National Science Foundation, the Director of the National Institute of Standards and Technology, the Federal Trade Commission, and the heads of other Federal agencies, as appropriate, to accelerate the development, deployment, and adoption of privacy enhancing technologies.

(b) OUTREACH.—The Director of the National Institute of Standards and Technology shall conduct outreach to—

(1) receive input from private, public, and academic stakeholders on the development of privacy enhancing technologies; and

(2) facilitate and support ongoing public and private sector engagement to create and disseminate voluntary, consensus-based technical standards, best practices, guidelines, methodologies, procedures, and processes to cost-effectively ensure the integration of privacy enhancing technologies in data collection, sharing, and analytics performed by the public and private sectors.

SEC. 6. REPORT ON PRIVACY ENHANCING TECHNOLOGY RESEARCH.

Not later than 3 years after the date of enactment of this Act, the Director of the Office of Science and Technology Policy, acting through the Networking and Information Technology Research and Development Program, shall, in coordination with the Director of the National Science Foundation, the Director of the National Institute of Standards and Technology, and the heads of other Federal agencies, as appropriate, submit to the Committee on Commerce, Science, and Transportation of the Senate, the

Subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the Senate, the Committee on Science, Space, and Technology of the House of Representatives, and the Subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the House of Representatives, a report containing—

(1) the progress of research on privacy enhancing technologies;

(2) the progress of the development of voluntary resources described under section 5(b)(2); and

(3) any policy recommendations that could facilitate and improve communication and coordination between the private sector and relevant Federal agencies for the implementation of privacy enhancing technologies.

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Chairwoman JOHNSON. Thank you. Ms. Stevens, in your opening remarks you also spoke to this amendment. Would you like to speak again or shall we just ask if there are other comments?

Ms. STEVENS. I will move to speak again.

Chairwoman JOHNSON. You're recognized.

Ms. STEVENS. In part, this amendment, Madam Chair, does include technical corrections and language that incorporates feedback from our friends at the National Science Foundation and the National Institute of Standards and Technology. Specifically when writing legislation that may impact the privacy of our constituents, the American people, it is important to get our terms and definitions right.

The amendment updates the definition of privacy-enhancing technologies and the underlying——

Chairwoman JOHNSON. Ms. Stevens?

Ms. STEVENS. Yes?

Chairwoman JOHNSON. You're speaking to the next amendment.

Ms. STEVENS. Yes.

Chairwoman JOHNSON. We're going to close out——

Ms. STEVENS. OK. We'll close out that.

Chairwoman JOHNSON. OK.

Ms. STEVENS. One more movement, it's been a joy to work with Mr. Gonzalez, and we're very glad to have comments from Ms. Ross on the record. Thank you.

STAFF. OK.

Ms. STEVENS. It's an overzealous morning.

Chairwoman JOHNSON. Yes. If there are no additional comments, we will move to this next amendment and vote on the substitute amendment later.

The next amendment on the roster is an amendment offered by the gentlelady from Michigan, Ms. Stevens, and she's recognized to report the—to speak on the amendment. You have an amendment at the desk, and the Clerk will report the amendment.

The CLERK. Amendment No. 2, amendment to the amendment in the nature of a substitute to H.R. 847 offered by Ms. Stevens of Michigan.

[The amendment of Ms. Stevens follows:]

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 847 OFFERED BY MS. STEVENS OF MICHIGAN

Page 1, strike lines 4 through 12 and insert the following:

SEC. 2. DEFINITION OF PRIVACY ENHANCING TECHNOLOGY.

In this Act, the term "privacy enhancing technology"—

Page 1, lines 13 through 17, strike "means any software solution, technical processes, or other technological means of enhancing the privacy and confidentiality of an individual's personal data in data or sets of data;" and insert "means any software or hardware solution, technical process, or other technological means of mitigating individuals' privacy risks arising from data processing by enhancing predictability, manageability, disassociability, and confidentiality;".

Page 2, lines 1 through 4, amend clause (i) to read as follows:

(i) cryptographic techniques for facilitating computation or analysis on data while mitigating privacy risks;

Page 2, lines 5 and 6, amend clause (ii) to read as follows:

(ii) techniques for publicly sharing data without enabling inferences to be made about specific individuals;

Page 2, line 8, insert ", sharing," after "dissemination".

Page 2, line 9, strike "personal" and insert "their".

Page 2, lines 15 and 16, strike ", to provide for reasonable privacy and confidentiality protections".

Page 3, line 3, strike "of personal data" and insert "to mitigate individuals' privacy risks".

Page 3, line 7, P3; L7: insert "analyzing," after "sharing,".

Page 3, after line 21, insert the following (and redesignate subsequent paragraphs accordingly):

(6) multidisciplinary socio-technical research that fosters broader understanding of privacy preferences, requirements, and human behavior to in-

form the design and adoption of effective privacy solutions;

Page 5, lines 8 through 11, strike "to create and disseminate voluntary, technical standards, best practices, and guidelines, methodologies, procedures, and processes to cost-effectively ensure" and insert "to inform the development and dissemination of voluntary, consensus-based technical standards, guidelines, methodologies, procedures, and processes to cost-effectively increase".

Page 6, line 16, insert "and adoption" after "implementation".

Chairwoman JOHNSON. I ask unanimous consent to dispense with the reading. Without objection, so ordered. I now recognize the gentlelady for 5 minutes to explain that amendment, the second amendment.

Ms. STEVENS. Yes. Thank you, Madam Chair.

In explanation of the second amendment, we are making technical corrections to the definition of privacy-enhancing technologies, particularly to align with the NIST privacy framework. And this updated definition will capture more PETs and allow NIST and NSF to better follow the science. This change also—and along with striking the definition for personal data—changes the focus of the bill from protecting data to mitigating privacy risks and preventing check-the-box privacy compliance. We must encourage organizations to think critically about how they are protecting individuals' privacy and ensure that they have the tools to do so.

The amendment also adds a provision to the research activities outlined in the NSF section to support sociotechnical research that fosters broader understanding of privacy preferences and requirements and human behavior. This type of research will be essential to inform the design and facilitate the adoption of effective PETs.

Finally, the amendment ensures that the report requires under section 6 offering recommendations to Congress on how to boost the Federal adoption of this technology. It's exciting. I encourage and urge my colleagues to support this commonsense amendment to enhance and further improve the definition—definitions and PET research activities authorized in this bill. Thank you, and I yield back.

Chairwoman JOHNSON. Well, thank you. Any further discussion?

If there is no further discussion, the vote occurs on the amendment.

All those in favor, say aye.

Those opposed, say no.

The ayes have it, and the amendment is agreed to.

A Member may request a roll call vote, but I think we passed it.

The next amendment on the roster is an amendment offered by the gentleman from Florida, Mr. Posey. And you're recognized for 5 minutes.

Mr. POSEY. Thank you, Madam Chair. I have an amendment at the desk.

Chairwoman JOHNSON. The Clerk will report the amendment.

The CLERK. Amendment No. 3, amendment to the amendment in the nature of a substitute to H.R.——

[The amendment of Mr. Posey follows:]

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 847 OFFERED BY MR. POSEY OF FLORIDA

Add at the end the following:

SEC. 7. PROTECTING PERSONAL IDENTIFYING INFORMATION.

Any personal identifying information collected or stored through the activities authorized in this Act shall be done in accordance with section 690 of title 45, Code of Federal Regulations (relating to the protection of human subjects), or any successor regulation.

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Chairwoman JOHNSON. I ask unanimous consent to dispense with the reading. Without objection, so ordered.

I recognize the gentleman for 5 minutes to explain his amendment.

Mr. POSEY. Thank you, Chairwoman Johnson.

My amendment would ensure that any collection or storage of personally identifiable information as part of the activities authorized in this act shall be done in consistency with the Common Rule or any subsequent Federal regulation. This Federal regulation ensures that if any personal data is collected and utilized through this work, it will require informed consent from the individual before it may be used.

As has been mentioned already, harnessing the power of data will be a critical tool to unlocking the full potential of advanced technologies of artificial intelligence, but as we develop these emerging technologies, we must also protect our shared values of privacy, accountability, and transparency. This amendment ensures that we do just that, and I urge support and yield back the balance of my time.

Chairwoman JOHNSON. Thank you. I now recognize myself to speak on this amendment.

I thank Representative Posey for his amendment. It ensures that research conducted to improve the PETs does not create a privacy problem itself. I agree with Mr. Posey that all research that deals with human subjects should follow the Common Rule. I support this good amendment, and I yield back the balance of my time.

Anyone else seeking time?

If there's no discussion—further discussion on the amendment, the vote occurs on the amendment.

All in favor, say aye.

Those opposed, no.

The ayes have it, and the amendment is agreed to.

Now, we will vote on the amendment in the nature of a substitute, as amended. The vote occurs on the amendment.

All those in favor, say aye.

Those opposed, say no.

The ayes have it, and the amendment is agreed to.

Having a reporting quorum being present, I move that the Committee on Science, Space, and Technology report H.R. 847, as amended, to the House with the recommendation that the bill be approved.

Those in favor of the motion will signify by saying aye.

Those opposed, no.

The ayes have it, and the bill is favorably reported.

Without objection, the motion to reconsider is laid upon the table. I ask unanimous consent that the staff be authorized to make any necessary technical and conforming changes to the bill. Without objection, so ordered.

Members will have 2 subsequent calendar days in which to submit supplemental, minority, or additional views on this measure.

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