117TH CONGRESS
1ST SESSION

S. _____

To require the Secretary of Commerce to seek to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine to conduct a study on the top 10 emerging science and technology challenges faced by the United States and develop recommendations to address them, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. VAN HOLLEN (for himself and Mr. BLUNT) introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To require the Secretary of Commerce to seek to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine to conduct a study on the top 10 emerging science and technology challenges faced by the United States and develop recommendations to address them, 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 ''National Strategy to Ensure American Leadership Act of 2021'' or the ''National SEAL Act of 2021''.

SEC. 2. FINDINGS.

Congress makes the following findings:

(1) In 1960, the United States was an undisputed leader in science and innovation, making up 69 percent of the world's research and development investments.

(2) The United States innovation system, including Federal support for research, has spurred development of critical technologies, including the internet, the Global Positioning System (GPS), supercomputing, speech-recognition, semiconductors, and Magnetic Resonance Imaging (MRI).

(3) By 2018, as governments and industry in other countries have increased their own investment, the United States' share of global research and development fell to 27.6 percent.

(4) In 2015, China launched the Made in China 2025 initiative, a 10-year strategic plan that includes promoting development in key sectors, such as next generation information technology, industrial robotics, electric vehicles, new synthetic material development, and biotechnology.

(5) From 2000 to 2018, China's share of global research and development rose from 4.9 percent to 26.3 percent and the United States' share fell from 39.9 percent to 27.6 percent.

(6) While the United States continued to fund more research and development than any other individual country, China, as the number 2 funder, was less than $28,000,000,000 behind United States investment.

(7) In 2005, Senator Lamar Alexander and Senator Jeff Bingaman requested that the National Academy of Sciences explore ''the top 10 actions, in priority order, that Federal policy makers could take to enhance the science and technology enterprise so the United States can successfully compete, prosper, and be secure in the global community of the 21st Century,'' along with an implementation strategy.

(8) The subsequent report, ''Rising Above the Gathering Storm,'' led to passage of the America COMPETES Act (121 Stat. 572; Public Law 110–69) and the America COMPETES Reauthorization Act of 2010 (124 Stat. 3982; Public Law 111–358) to increase investment in scientific research and enhance the science, technology, engineering, and mathematics workforce.

(9) The American Innovation and Competitiveness Act (130 Stat. 2969; Public Law 114–329) was enacted in 2017 to improve the Federal research process and provide incentives for private-sector innovation.

(10) The United States is in a period of rapid development of innovation, including disruptive technology like the internet of things, blockchain, autonomous vehicles, clean energy technology, energy storage, artificial intelligence, quantum information science, nanotechnology, and advanced genome editing.

(11) The United States is facing resource and national security challenges that will require advanced research and innovation.

(12) Advances in research and technology in other countries, like the growth of China in fifth-generation wireless networking technology, have presented national security challenges in United States infrastructure.

(13) The United States must maintain and grow its technological advantage in order to remain competitive and secure in the global economy.

SEC. 3. STUDY ON EMERGING SCIENCE AND TECHNOLOGY CHALLENGES FACED BY THE UNITED STATES AND RECOMMENDATIONS TO ADDRESS THEM.

(a) STUDY.—

(1) IN GENERAL.—The Secretary of Commerce shall seek to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine to conduct a study—

(A) to identify the 10 most critical emerging science and technology challenges facing the United States; and

(B) to develop recommendations for legislative or administrative action to ensure United States leadership in matters relating to such challenges.

(2) ELEMENTS.—The study conducted under paragraph (1) shall include identification, review, and evaluation of the following:

(A) Matters pertinent to identification of the challenges described in paragraph (1)(A).

(B) Matters relating to the findings in section 2.

(C) Matters relating to the recommendations developed under paragraph (1)(B), including with respect to education and workforce de-

velopment necessary to address each of the challenges identified under paragraph (1)(A).

(3) TIMEFRAME.—

(A) AGREEMENT.—The Secretary shall seek to enter into the agreement required by paragraph (1) on or before the date that is 60 days after the date of the enactment of this Act.

(B) FINDINGS.—Under an agreement entered into under paragraph (1), the National Academies of Sciences, Engineering, and Medicine shall, not later than 1 year after the date on which the Secretary and the National Academies enter into such agreement, transmit to the Secretary the findings of the National Academies with respect to the study conducted pursuant to such agreement.

(b) REPORT.—

(1) IN GENERAL.—Not later than 30 days after the date on which the Secretary receives the findings of the National Academies of Sciences, Engineering, and Medicine with respect to the study conducted under subsection (a), the Secretary shall submit to Congress a report on such study.

(2) CONTENTS.—The report submitted under paragraph (1) shall include the following:

(A) The findings of the National Academies of Sciences, Engineering, and Medicine with respect to the study conducted under subsection (a).

(B) The conclusions of the Secretary with respect to such findings.

(C) The recommendations developed under subsection (a)(1)(B).

(D) Such other recommendations for legislative or administrative action as the Secretary may have with respect to such findings and conclusions.

(c) INFORMATION FROM FEDERAL AGENCIES.—

(1) IN GENERAL.—The National Academies of Sciences, Engineering, and Medicine may secure directly from a Federal department or agency such information as the National Academies of Sciences, Engineering, and Medicine consider necessary to carry out the study under subsection (a).

(2) FURNISHING INFORMATION.—On request of the National Academies of Sciences, Engineering, and Medicine for information, the head of the department or agency shall furnish such information to

the National Academies of Sciences, Engineering, and Medicine.