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America Can Code Act of 2013

The Situation – More Jobs, Less Workers: According to the Bureau of Labor Statistics, there will be 1,000,000 more computing jobs than computer science students by 2020 (1.4 million jobs, 400,000 students). To meet this demand, the President's Council of Advisors on Science and Technology estimate that the United States will need to increase the number of students who receive undergraduate STEM degrees by about 34 percent annually. However, according to the National Science Foundation, 2 percent of STEM students are computer science majors, while 60 percent of STEM jobs are computing jobs. Additionally, for every American student receiving an engineering degree, about eight students receive engineering degrees in China and about five students earn equivalent degrees in India. This situation is unsustainable and we are falling behind. The America Can Code Act of 2013 is a solution to this critical problem.

America Can Code Act: The America Can Code Act is a bill that recognizes the importance of teaching computer science and engineering to American students in the classroom from K-12 and its positive impacts on the U.S. economy. The Department of Commerce projects that between 2008 and 2018 careers in science, technology, engineering, and math (STEM) will grow double the rate that of other fields. However, the vast majority of U.S. students will not be prepared to fill these positions due to lack of knowledge and skills in these sectors. Incorporating computer science and engineering into our K-12 education system is not only about training a competitive domestic workforce, but also about ensuring that these high-paying tech jobs stay in the U.S. and employ Americans.

This bill amends the America Competes Act to redefine the term "critical foreign language" to include "computer programming languages." This bill also includes a Sense of Congress that computer programing and engineering, particularly coding, are vital subjects of study that should be incorporated into the K-12 curricula. Additionally, it expresses that computer programming languages should be considered critical foreign languages due to the fact that reading and writing code is vital to our economic competitiveness. The bill also creates a competitive matching grant for state and local education agencies, collaborating with academia and nonprofit organizations, to incentivize innovative and effective ways of teaching computer science and engineering in K-12 schools. The bill also directs that Secretary of Education to establish the Task Force on Computer Programming and Coding to identify and prioritize challenges of educating and training a workforce equipped to fill jobs in emerging STEM fields, such as computer programming and engineering, through a consortium with participants from government, institutions of higher education, and industry.

Outline of bill:

Section 2: FINDINGS. Findings related to the growth of careers in STEM and America's failure to educate and train an innovative and competitive workforce. These findings depict the lack of academic focus on STEM education, particularly on computer science and engineering, and its negative effects on the vitality and competiveness of our future economy.

Section 3: SENSE OF CONGRESS. Sense of Congress expressing schools should not only be teaching STEM education but we should be actively applying these concepts in the classroom for a comprehensive and dynamic learning experience. Schools should focus on incorporating technology into the classroom and teaching the founding principles of computer programming and engineering in order to introduce students to the principles, concepts, and technical skills that are critical to fill future STEM jobs. Additionally, focus should be placed on changing the way society conceptualizes coding; learning to write and read code is critical to creating and innovating in cyberspace and thereby maintaining our global competitive edge.

Section 4. CODING AS A CRITICAL FOREIGN LANGUAGE. This section amends the America Competes Act to redefine the term "critical foreign language" as "a foreign language, including computer programming languages, which the Secretary determines, in consultation with the heads of such Federal departments and agencies as the Secretary determines appropriate, is critical to the national security and economic competitiveness of the United States."

Section 5. AMERICA CAN CODE GRANT PROGRAM. This section creates of a competitive matching grant in the Department of Education. The purpose of this is to assist local education agencies or states – working in partnership with higher education institutions and nonprofit organizations – to design and/or implement curricula to teach students computer science and engineering concepts to ensure that American students graduate from high school academically prepared to pursue STEM degrees in college. This grant is also intended to expose students to careers in STEM fields, particularly opportunities in computer science and engineering.

The grant gives preference to grant applications that include low-performing schools. The grant is for four years, with a possible one year extension, and can be used to support current efforts to create curricula or to implement newly created curricula. Grant funds can also be used for equipment and supplies to implement new curricula, participation in national competitions, and to expose students to STEM careers, particularly in computer science and engineering.

Section 6. TASK FORCE ON COMPUTER PROGRAMMING AND CODING. This section establishes the Task Force on Computer Programming and Coding to identify and prioritize challenges of educating and training a workforce equipped to fill jobs in emerging STEM fields,

such as computer programming and engineering, through a consortium with participants from government, institutions of higher education, and industry.

The Task Force will be composed of representatives from the Department of Education and other relevant agencies and departments, teachers, institutions of higher learning, and industry. It will create a national strategy to ensure that the U.S. remains competitive in STEM fields and will create an online portal that will contain resources for schools and stakeholders to access key information, data, reports, and materials to create or update curricula for primary and secondary education. The Task Force will report to Congress and terminate after the portal has been created and includes the Task Force's findings.