OPENING STATEMENT

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of the Subcommittee on Research and Technology

House Committee on Science, Space, and Technology
Subcommittee on Research and Technology
"STEM and Computer Science Education: Preparing the 21st Century Workforce"
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Thank you, Chairwoman Comstock, and thank you to all of the witnesses for being here today.

For the past 8 and half years I have had the privilege of serving as Chair and then Ranking Member of this subcommittee – formerly the Research and Science Education subcommittee – and co-chair of the STEM Education Caucus. These experiences, combined with my training as an engineer and my wife's training in math, have given me great insight into the importance of STEM education for the success of individuals in today's job market as well as for the success of our nation's economy. I'm not as well versed in computer science, but I do know that I spent much more time doing computer programming as a political science grad student in the 90s than I did as an engineering undergrad in the 80s. The importance of computer science and computer skills has exploded since that time. So I am glad we are having this hearing today to discuss the state of STEM and computer science education in our country.

Computers are becoming more and more integral to our daily live. With a device we carry around in our pocket, we can video chat with loved ones, order groceries, or even watch a live stream of a Congressional hearing. Looking to the future, artificial intelligence, mixed reality, and the Internet of Things will undoubtedly play larger roles in our everyday lives. Obviously none of this is possible without computer scientists and individuals with computer skills. The innovations coming out of Silicon Valley are inspiring, but industries beyond the technology sector are also integrating computer science and data analytics into their business models. With this increased reliance on computing and information technology, the workforce demand for computing and programming expertise has skyrocketed.

Code.org estimates that there are over a half million open computing jobs nationwide. These unfilled jobs amount to significant untapped economic value. This hearing is a great opportunity to discuss challenges and opportunities for producing a workforce equipped to meet the demand for computing expertise.

The National Center for Education Statistics reports that a record number of computer science bachelor's degrees were awarded in 2015. Colleges and universities are straining to expand their capacity to accommodate the surge in student interest. But we're obviously still not producing enough skilled computer scientists. What can we do to address this problem?

There are also barriers at the high school level to providing access to high-quality computer science courses. According to a 2016 research study by Gallup and Google, only 40 percent of schools teach computer programming. Computer science curricula vary from school to school as only 10 states have created K-12 computer science standards. Increasing the pool of qualified teachers has also proven to be a difficult challenge.

I am encouraged to see that each year more schools are offering computer science courses and allowing students to count them toward credit for graduation. In fact, last year the Chicago Public School system became the first in the country to add computer science to the list of requirements for graduation. The Chicago Public Schools class of 2021 will be the first high school class in the country to graduate with every student having taken a computer science course. These are all steps in the right direction, but there is more work to be done.

We need to provide opportunities for adults seeking career re-training and continuing education to have access to coding and computing skills through community colleges and employment training centers. To that end, I was pleased to see the Strengthening Career and Technical Education for the 21st Century Act pass the House unanimously last month, but as I regularly hear from employers in my district, demand for these skills still outstrips supply.

Finally, we need to work to ensure that all students no matter where they grow up, their background, their race, or their sex, have the opportunity to become educated in computer science and all STEM fields. Increasing the participation of women and under-represented minorities in STEM fields will not only increase our global competitiveness, but also help grow the STEM workforce.

I look forward to a fruitful discussion about measures that can be taken to ensure that graduates entering the workforce and adults retraining for new careers are equipped with the necessary expertise to meet overwhelming employer demand. Thank you again to our witnesses for being here and I yield balance of my time.