Sarah Silverman Testimony

Ohio Senate Education Committee

October 11, 2017

Chair **Lehner**, Vice Chair **Huffman**, Ranking Member **Sykes**, and members of the **Senate Education committee,** thank you for the opportunity to testify before you today.

My name is Sarah Silverman. I’m excited to be here today, in part, because I grew up in central Ohio, just a few miles from here, and am a proud graduate of The Ohio State University. I’m now an educational psychologist and consultant to education innovators and technology companies across the United States. Because I see the importance of computer science education in my daily work, I partner closely with Code.org, a national nonprofit dedicated to expanding access to computer science education--especially for women and minorities. I’m here today to express strong support for House Bill 170 and to laud the work of the co-sponsors in bringing attention to a critical need in Ohio’s schools.

There is unprecedented interest in computer science education: According to a recent poll by Google/Gallup, 93% of parents want their child’s school to teach computer science. A survey by Horizon Media found that 75% of Americans believe computer science is “cool” --no longer just the purview of an elite few. And 50% of Americans rank computer science as one of the two most important subjects of study after reading and writing.

However, fewer than half of all schools offer computer science.

* Ohio had only 1,137 computer science BA graduates (from public or nonprofit institutions) in 2015; only 18% were female. The problem begins in the K-12 pipeline. Girls in particular learn early that science and math are mostly male-dominated professions--but we can combat that by helping them develop skills and competencies that can lead them to enjoy the may STEM desciplines.
* Today, there are fewer AP exams taken in computer science than in any other STEM subject area. Few students begin the study of computer science in K-12 at all--both because they’re unaware of the opportunity and because learning options are limited.
* And today’s CS learners are mostly male and mostly White. Out of the 1,149 students who took the AP CS exam in 2016, only 20% were female, less than 3% were Hispanic or Latino, and less than 4% were Black.

Compare this with astounding jobs data:

* According to the Conference Board’s Help Wanted Survey, Ohio currently has 14,202 open computing jobs, which is 3.5 times the average demand rate.
* The average salary for a computing occupation in Ohio is $79,972 (according to BLS), which is almost double the average salary in the state ($44,750). The existing open jobs alone represent a 1.2 billion dollar opportunity in terms of annual salaries.

And these jobs are across all industries. This isn’t just about tech companies -- this is about all of Ohio. While nationally, ⅓ of computing jobs are in the tech industry, the other 2/3rds are in other fields -- think agriculture, manufacturing, banking, government -- all of which have increasing roles in computing. We need to support these opportunities for Ohio students to thrive in their home state.

Early access to fundamental computer science skills can be a game-changer for students both in terms of inspiring interest in computer science education and in giving students alternative routes to core academic skills. Take, for example, sequencing. By intentionally introducing students to the very basic concept of ordering in a step-by-step sequence as early as first grade, we can begin to build skills that are relevant across domains--but that also serve as a foundation for understanding computer science.

**The pathway to building skills over time is high quality learning standards.** Consistent standards for learning help ensure that all students have access to the same learning progressions and are working toward the same knowledge and skills. While standards across states should aim to meet a consistent level of quality, states should also have the flexibility to define skillsets that are most essential to their students’ and workforce needs. To support that aim, five leading computer science organizations led development, along with 22 writers from fourteen states and four school districts, of a framework for standards development. Computer science educators, academic researchers and industry professionals were among the hundreds of reviewers who helped develop a toolkit and guide for states like Ohio to use in building high quality standards. Code.org and others also provide technical assistance and support to states developing and implementing standards. That resource, the K-12 Computer Science Framework, is cited in the legislation, and we believe it will be a helpful tool to the Ohio Department of Education as well as the schools and districts across Ohio that choose to take advantage of the opportunity to expand access to CS education.

Today, Idaho, South Carolina, California, Colorado, Virginia, Wisconsin, and Wyoming are all using the Framework to build standards and several others are looking to the Framework for upcoming standards efforts.

In summary, House Bill 170 makes great forward progress toward helping more students get access to the skills they need for success--and also helps strengthen Ohio’s economy by ensuring more Ohioans have the skills they need for Ohio jobs. I hope you’ll strongly support this bill to Governor Kasich’s desk--and along the way as it is implemented across the state.

Thank you for inviting me to testify before this committee and for your efforts to increase access to computer science education in Ohio. After my colleague’s testimony, I’m happy to answer any questions.