



May 16th, 2023

To:

Ohio Senate Finance Committee
Ohio Senate
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Chairman Dolan, Vice Chairman Cirino, Ranking Member Sykes and members of the Senate Finance Committee. Thank you for allowing me to submit testimony on House Bill 33 in regards to the computer science budget language and funding.

My name is John Dutton. I am President of the Computer Science Teachers Association of Ohio (CSTA Ohio) and a Computer Science and Engineering teacher at MC²STEM High School in Cleveland, an Ohio STEM designated school.

CSTA Ohio, founded in 2009, is one of 101 chapters of CSTA which boasts over 19,000 members, supporting and promoting the teaching of computer science (CS) by providing opportunities for K–12 teachers and their students to better understand computer science and to more successfully prepare themselves to teach and learn.

Computer science is often misunderstood to be simply “making computers work.” In fact, computer science is both much more technical and more applicable to all other workforce pursuits. By learning computer science, students learn how to break up big problems into smaller, more manageable ones while learning how to use the internal languages of computers, like Java, Python, C++ and JavaScript, in order to produce software that forms the foundation of cybersecurity and our collective national security.

Like many of you, I grew up in a small town. I studied computer science at Case Western Reserve, worked ten years in industry, then started teaching in high-need schools, which I have done for the last 16 years. I teach computer science so that I can provide students access to computer science and all of the rapidly growing and not-yet-invented careers associated with being able to program a computer.

We need to expand computer science education and access, but in doing so, we also need to build our computer science teacher workforce. To that end, we need “Teach CS” grants funded with \$8 million that will enable Ohio to have fully qualified and licensed CS teachers. Additionally, we are requesting that the current moratorium on computer science licensure is extended until 2025 which allows current teachers to teach computer science. We are also urging this body to provide \$8 million in funding for CS Promise, which will allow professionals to guide students toward and also teach computer science courses. As currently written, HB33 creates the mandate for CS Promise but does not provide the funding. Without this funding, already

cash-strapped schools in districts like Bowling Green, Brooklyn, Canton, Delaware, Lorain, Mansfield, Marion, Middletown, Mount Healthy and Paynesville will be placed under an even more severe financial burden.

As you may know, there are over 18,000 open computer science jobs in Ohio every month, but only 1800 college graduates in computer science available to fill those jobs. Tech companies will continue to either look elsewhere for employees or will look elsewhere to exist. Funding computer science education helps Ohio maximize business economic potential.

In addition to the tech sector, Ohio is experiencing rapid growth in the medical and quantum computing industries. New computing machines, like Cleveland Clinic’s Quantum System One, will need talented and brilliant programmers. If we don’t grow our own talent pipeline, Ohioans will be shut out of high-paying jobs in our own backyards; just look at Figure 1 included in my testimony, “Computer science funding in selected states.” Alabama, Arkansas and South Carolina provide computer science courses to almost all of their high school students, at an average cost of \$88 per student. Our neighbors in Indiana, Pennsylvania and West Virginia provide CS courses to about 80% of their high school students at an average cost of \$35 per student. Should this body elect to fund computer science in Ohio at \$12 million per year, we could do the same at an even lower cost per student.

State	% of high school students receiving computer science education	Annual Computer Science Funding	Total High School Students	Computer Science Funding per Student per year
Alabama	85%	\$17.5M (since 2017)	217K	\$81
Arkansas	92%	\$24.5M (since 2015)	144K	\$170
South Carolina	93%	\$3.1M (since 2017)	228K	\$14
Indiana	85%	\$12.6M (since 2020)	323K	\$39
Pennsylvania	77%	\$20M (since 2019)	548K	\$36
West Virginia	78%	\$2.4M (since 2019)	77K	\$31
Ohio	50%	\$0	503K	\$0
Ohio with Requested Funding	>75%	\$12M	503K	\$24

Figure 1. Computer Science funding in selected states.

<https://www.statista.com/statistics/1036120/public-high-school-enrollment-state-us/>

https://advocacy.code.org/2022_state_of_cs.pdf

We all want a talented, prepared workforce, ready for the tech, cybersecurity and national security challenges of tomorrow. The requested \$24 million and supporting amendment language will help ensure that high tech industries move to and stay in Ohio as our workforce becomes prepared to outcompete our neighbors. Thank you for allowing me to testify in support of HB 33. I welcome your questions.