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March 5, 2019

Rep. Robert Sanchez, Co-Chair
Sen. Douglas McCrory, Co-Chair
Rep. McCarty, Ranking Member
Sen. Berthel, Ranking Member
Education Committee
Legislative Office Building, Room 3100
300 Capital Avenue
Hartford, CT 06106

Regarding Raised Bill No. 957: An Act Concerning The Inclusion Of Computer Science Instruction In The Public School Curriculum, Programs Of Teacher Preparation And In-service Training Programs For Teachers.

Distinguished Leaders:

I am Norman Sondheimer, a retired computer scientist, a member of the State Department of Education Computer Science Advisory Committee, and the leader of the Computer Science for Connecticut initiative of the Connecticut Chapter of the Computer Science Teachers Association.

I would like to thank you for raising a bill that will help make computer science education a priority in Connecticut schools. I support Raised Bill No. 957 with the stipulation that it be strengthened considerably by creating a public-private partnership to manage a Computer Science for Connecticut Initiative. I state as evidence for this step the fact that in 2015 you passed a bill requiring schools to teach "computer programming instruction" by the 2016-17 school year. Yet in 2017-18, only 103 schools offered such a course. The new bill only changes the name of the subject to be taught and will have the same result.

Part of the reason for this is that Connecticut has failed to approach the issue as the cultural-change initiative that it must be in order to bring about change in our "local control" state. We must convince each School Board, Superintendent, Principal and Guidance Counselor of the value of teaching any new subject before we could have a realistic chance of a different curriculum being accepted. I personally know how difficult these sort of change initiatives are from leading GE's six-sigma software improvement effort. I am sure members of the committee have had similar experiences.

Other states working to integrate computer science into their curriculum face the same challenge. What they have done is to create or use existing entities outside the government to lead their change effort. These are often referred to as public-private partnerships. Virginia has CodeVA. North Carolina uses the Friday Institute. Maryland created the Maryland Center

for Computing Education. New York City has Computer Science for All (CS4All), a \$80 million partnership. Rhode Island has CS4RI.

Governor Lamont knows the challenge and has a model in mind. He ran on this platform: “I strongly support incorporating computer science and statistics into our K-12 curriculum, similarly to what our neighbors have done in Rhode Island.”

What you have in the submitted material (see below) is language which will create a CS4CT in the model of CS4RI. It was developed in collaboration with the leaders of CS4RI. We sent a short overview of the plan to three of the Lamont-Bysiewicz Transition Policy Teams: Education, Jobs/Economy and Digital Strategy. They all endorsed it leading the Governor to commit to “coding in K-12” in his State of the State address.

We suggest that you amend Raised Bill No. 957 to create a temporary Computer Science for Connecticut Initiative to work on collaboration with the Connecticut State Board of Education, Connecticut State Department of Education, institutions of higher education, the Department of Economic and Community Development, the schools, our teachers, and our business community. Give it the mandate to work with each district and school to understand their special requirements, obtain the training necessary for their teachers to begin to offer computer science, support recruitment efforts to improve the diversity of the students studying the subject, and leave behind a self-sustaining program of K-12 computer science education.

If we don’t, the terrible mismatch between what the students learn and what knowledge the world rewards shown here will continue:

2017-18 Enrollment from EdSight

1. Computer Programming	5,166
2. Probability and Statistics	13,443
3. Calculus and Pre-Calculus	24,060
4. Chemistry	41,358

Projected Connecticut job growth from P20 Win:

1. Computer Science	6,552
2. Statisticians and Actuaries	360
3. Engineers	4,345
4. Chemists	123

Other States have acted, Connecticut should, as well.

Yours truly,

Norman Sondheimer, Ph.D.

CREATION OF THE COMPUTER SCIENCE FOR CONNECTICUT INITIATIVE.

(a) There is hereby created in the Office of the Governor the “Computer Science for Connecticut Initiative” (Initiative), and its Board of Directors. The administrator of the Initiative shall be the official the Governor’s Office designates to coordinate and oversee implementation of computer science programs.

(b) In carrying out the powers and duties granted in this section, the Initiative shall work in collaboration with the Connecticut State Board of Education, Connecticut State Department of Education, Institutions of Higher Education and the Department of Economic and Community Development.

(c) The Initiative board shall consist of the following representatives:

- (1) the Connecticut State Board of Education;
- (2) the Connecticut State Department of Education;
- (3) Business and Industry Organizations;
- (4) Educational Nonprofit Organizations;
- (5) Connecticut Association of Public School Superintendents;
- (6) The Connecticut Governor’s Office
- (7) Institutes of Higher Education;
- (8) Citizen Advocates; and
- (9) Teacher leader from a statewide association representing computer science teachers.

(d) The purpose of the Initiative is to expand access to high-quality computer science education in grades kindergarten through 12th grade by strengthening the skills of educators and increasing the number of computer science teachers in elementary and secondary education.

(e) The Computer Science for Connecticut Initiative shall develop a state strategic plan for expanding computer science education in elementary, middle and high schools. The state strategic plan for a statewide computer science education program developed shall include the following:

- (1) a statement of purpose that describes the objectives or goals the board will accomplish by implementing a computer science education program, the strategies by which those goals will be achieved, and a timeline for achieving those goals. Goals should include:

(a) Beginning in the 2020-2021 school year, teacher training shall begin and shall be completed in the 2023-2024 school year such that each public high school or public charter high school shall offer at least one (1) computer science course.

(b) Beginning in the 2020-2021 school year, teacher training shall begin and shall be completed in the 2023-2024 school year such that each public middle school or public charter middle school shall offer instruction in exploratory computer science.

(c) Beginning in the 2020-2021 school year, teacher training shall begin and shall be completed in the 2023-2024 school year such that each public elementary school or public charter elementary school shall offer computer science instruction in the basics of computer science and computational thinking to all students.

(2) a summary of the current state landscape for K-12 computer science education, including diversity of students taking these courses;

(3) a plan for expanding computer science education opportunities to every school in the state within 5 years;

(4) a plan for defining high quality professional learning for teachers to begin teaching computer science;

(5) an ongoing evaluation process that is overseen by the board;

(6) proposed rules that incorporate the principles of the strategic plan into the state's public education system as a whole; and

(7) a plan to ensure long-term sustainability.

(f) On or before September 19, 2019 the board's state strategic plan described in Subsection (e) shall be presented to the relevant legislative committees.