

Robert Sanchez, Co-Chair
Douglas McCrory, Co-Chair
Education Committee
Legislative Office Building, Room 3100
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Hartford, CT 06106

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Regarding SB957 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

Testimony by: Darcy M Ronan, Ph.D. Assistant Professor of Teacher Education

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Good afternoon Mr. Sanchez and Mr. McCrory,

My name is Dr. Darcy Ronan from Sacred Heart University's Isabelle Farrington College of Education and a resident of the town of Fairfield. As a professor of teacher education and advocate for Computer Science education for all students, I support SB 957. I strongly advise the committee to take up amendments taken from the proposed bill from the CS4CT Committee of the Connecticut Chapter of the Computer Science Teachers Association.

I am honored to contribute to the state's readiness for Computer Science instruction in my role as Assistant Professor of Teacher Education at Sacred Heart University in Fairfield. As a former classroom teacher and district Science & Technology leader in Weston, I see the potential of Computer Science to achieve high-value outcomes for students in computer science, in other STEM-area subjects, and in life. As a teacher-educator, I recognize that whenever there is a gap between prospective teachers' experiences in schooling and what we expect from them as teachers, there is a need for special attention and intervention through teacher preparation. Given the recent emergence of Computer Science relative to other school subjects, Educator Preparation Programs will continue to receive candidates with little previous exposure to computer science for many years to come.

Right now, this gap in professional learning is being addressed by workshops provided by Computer Science curriculum providers to interested and/or designated in-service teachers. I stand behind the workshops Sacred Heart offers through Code.org as high quality. However, a donor-funded, on-the-job, ad-hoc approach it is not an ideal or sustainable model. Educator Preparation Programs need to engage.

We agree that Educator Preparation Programs in Connecticut in the 21st century should provide experiences in Computer Science to pre-service teachers so that they will be knowledgeable of the content, skills, dispositions, and pedagogy of computer science. The proposed bill SB 957 would require "any candidate in a program of teacher preparation ...to complete...instruction in computer science" however it does not specify the duration, depth, or objectives of such instruction. This language also fails to recognize the differing needs of teachers in general and those seeking positions as Computer Science specialists.

Please consider the following three suggestions, designed to recognize and meet the differing needs of generalists and specialists across the K-12 spectrum.

1. As we move away from Computer Science elitism, we recognize that Computer Science for ALL includes teachers, too. The Board of Regents shall amend their statewide master plan to require all pre-service teacher preparation programs to include a unit of computer science education. Such a unit should expose pre-service teachers to the principles and practices of computer science and draw explicit connections to computational thinking throughout the academic disciplines. The Board of Regents or a commission thereof should engage stakeholders from Education Preparation Programs in order to develop and implement this requirement in a manner which balances the need to include Computer Science instruction while recognizing that ill-considered or hastily-implemented program requirements can increase the duration and cost of teacher preparation.
2. The Connecticut General Assembly shall appropriate funds for eligible pre-service education programs in the state to develop and implement pathways for Computer Science Education as an additional certification or endorsement. Sacred Heart University has developed such pathways to meet the needs of in-service teachers who wish to deepen their content and pedagogical knowledge in Computer Science, while leveraging the candidates' backgrounds and expertise in other areas of pedagogy. These pathways lead to a unique endorsement from the State Department of Education. Other Educator Preparation Programs in the state should develop similar programs to meet the demand for high-quality Computer Science instruction.
3. The Connecticut General Assembly shall appropriate funds for eligible pre-service education programs in the state to develop and implement pathways for Computer Science Education as a primary initial endorsement. Whereas professional learning and secondary endorsements are critical in the movement to expand access to Computer Science instruction, there is an end-state to be envisioned where pre-service Computer Science teachers are developed alongside specialists in other already recognized subject areas. Connecticut's first initial certification teacher candidates are probably sitting in our K-12 classrooms right now. The state's Educator Preparation Programs and pursuant certifications should be ready for them when they arrive.

Thank you for your time and attention to this matter.

Darcy Ronan

Dr. Ronan is an Assistant Professor of Education at Sacred Heart University and co-director of SHU's Regional Partnership with Code.org with Dr. Erdil. Before joining the faculty at Sacred Heart University, Dr. Ronan taught science for over a decade in various public school-based roles including classroom teacher, instructional coach, and curriculum leader. She has worked in elementary, middle, and high schools in both urban and suburban settings across Connecticut, New York, and Massachusetts. Darcy previously taught education courses at Teachers College, Columbia University and biology courses at the John Jay College of Criminal Justice. Her research interests include identity development in STEM subjects for teachers and students, science research experiences, and authentic assessment. She is an active consultant and curriculum developer. She has a Ph.D. in science education from Teachers College, Columbia University, a graduate STEM certificate from Framingham State College, and a bachelors degree in biology and education from Boston College. She is a member of the National Association for Research in Science Teaching (NARST), Association of Science Teacher Education (ASTE), and the National Science Teachers Association (NSTA).