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Report Finds Gaps and Inequities in Computer Science Courses for Massachusetts High School Students

Data shows too few students in the Commonwealth are taking CS courses, a high demand skill in Massachusetts and beyond.

March 28, 2023 (Boston) – Despite booming demand for workers in the good-paying computer science sector, just 5.8% of Massachusetts high school students are taking a computer science course, according to a [new report](#) commissioned by the [Massachusetts Business Alliance for Education](#) (MBAE). The study also finds urban high schools lag their suburban and rural counterparts in offering computer science, and just 28.4% of students enrolled in a computer science course are female.

“Despite the huge economic opportunity to connect students from every corner of Massachusetts to careers with high wages, far too few high school students are taking computer science,” said Ed Lambert, Executive Director of MBAE. “Massachusetts can and should lead on this. With the expected influx of revenue earmarked for education, we should seize this chance to make computer science education a top priority and require every public high school in the Commonwealth to offer at least one foundational computer science course.”

Demand for computer and information technology professionals is growing at a rapid pace not only in the Commonwealth, home to a burgeoning technology and science sector, but across the United States. Nationally, the median annual wage for computer and information technology occupations was \$91,250 in May 2020, while the median annual wage for all occupations was \$41,950.

“Improving diversity in the tech sector is an urgent priority for employers, yet Black, Hispanic/Latino and female students are underrepresented in computer science classes. That’s got to change,” said Ed Lambert, Executive Director of MBAE.

The report, titled [Expanding Access and Participation in Computer Science Across Massachusetts](#), uncovered data from the 2020-2021 school year finding that:

- Only 5.8% of high school students were enrolled in a computer science course. Only 28.4% of students enrolled in a computer science course are female.
- Just 71% of urban high schools offer a foundational computer science class.
- In all, 78% of Massachusetts schools offer a foundational computer science course. While that’s ahead of the national average, it lags behind national leaders like Maryland (98%), South Carolina (93%), and Arkansas (92%), as well as other New England states like Rhode Island (86%) and New Hampshire (82%).

- Massachusetts is suffering from a shortage of qualified computer science teachers.

Expanding Access details a state-level strategy to expand computer science study in the Commonwealth which includes the implementation of making a foundational CS course a graduation requirement, a strategy some states have adopted. A newly-filed legislative proposal, [An Act to Expand Access to Computer Science Coursework](#), would require every public high school in MA to offer at least one foundational computer science course and to ensure that all students are able to access that course by the start of the 2025-26 school year.

"CSforMA, Inc. is very excited about the release of this report by MBAE," said Executive Director Deborah Boisvert. "Our state is lagging in Computer Science Education, both in the number of teachers prepared for and licensed to teach and in the ability for all students to have the opportunity to take and be successful in this vital content area. We look forward to working with MBAE to address the issues identified within this report and more broadly across K-12."

"In an increasingly digital world, understanding the basics of computer science is no longer a nice to have. Altruistically, these foundational learnings can increase opportunities for economic mobility like no other. From a business standpoint, it is critical to build a pipeline for the future of work," said Sara Fraim, CEO of the Mass Technology Leadership Council.

"As this report indicates, there are tens of thousands of tech-related job openings in Massachusetts that employers are eager to fill. These good-paying jobs support the state's innovation economy, as well as many other industries in Massachusetts, but there are too few workers that have the skills required for these jobs," said Elizabeth Mahoney, Vice President of Policy and Government Affairs at the [Massachusetts High Technology Council](#). "Increasing access to computer science education for all Massachusetts students is one important way that the state can expand career opportunities for its high school graduates, promote a more equitable Commonwealth, and ensure the state's employers have access to the skilled workforce they need."

An amendment in the 2022 economic development bill (Chapter 268 of the Acts of 2022) allocated \$2.5 million for the recruitment and training of educators to teach computer science. It also requires the Department of Elementary and Secondary Education to submit a report to the legislature on a strategy to ensure access in every high school, increase participation rates particularly among those traditionally underrepresented, and to evaluate whether a foundational computer science course should be a requirement to graduate high school.

About MBAE

The [Massachusetts Business Alliance for Education](#) is a non-profit, non-partisan organization that, together with our members, promotes and supports continuous improvement in our schools and innovation that is needed to ensure that EVERY student receives a high-quality education that prepares them for success in college, career, and citizenship.

MBAE is a member of the [Student Pathways to Success](#) coalition, a cross-sector partnership of organizations committed to educational equity and that represent students, parents, educators, and employers. It aims to universalize access to a meaningful and relevant high school education for all students that puts them on a pathway to college and career success.

