Support K-12 Computer Science Education in Mississippi

Computer science drives job growth and innovation throughout our economy and society. Computing occupations are the number 1 source of all new wages in the U.S. and make up over half of all projected new jobs in STEM fields, making Computer Science one of the most in-demand college degrees. And computing is used all around us and in virtually every field. It’s foundational knowledge that all students need. But computer science is marginalized throughout education. Only 45% of U.S. high schools teach any computer science courses and only 11% of bachelor’s degrees are in Computer Science. We need to improve access for all students, including groups who have traditionally been underrepresented.

In Mississippi, there are currently 1,504 open computing jobs with an average salary of $72,039.

Yet, there were only 201 graduates in computer science in 2018 and only 48% of all public high schools teach a foundational course.

Computer science in Mississippi

- Only 314 exams were taken in AP Computer Science by high school students in Mississippi in 2020 (24 took AP CS A and 290 took AP CSP).
- Only 38% were taken by female students (29% for AP CS A and 39% for AP CSP); only 19 exams were taken by Hispanic/Latino/Latina students (1 took AP CS A and 18 took AP CSP); only 56 exams were taken by Black/African American students (4 took AP CS A and 52 took AP CSP); only 1 exam was taken by Native American/Alaskan students (0 took AP CS A and 1 took AP CSP); no exams were taken by Native Hawaiian/Pacific Islander students.
- Only 47 schools in MS (27% of MS schools with AP programs) offered an AP Computer Science course in 2019-2020 (5% offered AP CS A and 26% offered AP CSP), which is 4 more than the previous year. There are fewer AP exams taken in computer science than in any other STEM subject area.
- Teacher preparation programs in Mississippi did not graduate a single new teacher prepared to teach computer science in 2018.
- According to a representative survey from Google/Gallup, school administrators in MS support expanding computer science education opportunities: 78% of principals surveyed think CS is just as or more important than required core classes.

What can you do to support K-12 CS education in Mississippi?

- Send a letter:
  - To your school/district asking them to expand computer science offerings at every grade level: [www.code.org/promote/letter](http://www.code.org/promote/letter)
  - To your elected officials asking them to support computer science education policy in Mississippi: [www.votervoice.net/Code/campaigns/58463/respond](http://www.votervoice.net/Code/campaigns/58463/respond)
- Find out if your school teaches computer science or submit information about your school's offerings at [www.code.org/yourschool](http://www.code.org/yourschool).
- Visit [www.code.org/educate/3rdparty](http://www.code.org/educate/3rdparty) to find out about courses and curriculum from a variety of providers, including Code.org.
Code.org's impact in Mississippi

- In Mississippi, Code.org’s curriculum is used in
  - 24% of elementary schools
  - 40% of middle schools
  - 27% of high schools
- There are 5,189 teacher accounts and 224,549 student accounts on Code.org in Mississippi.
- Of students in Mississippi using Code.org curriculum last school year,
  - 81% attend high needs schools
  - 75% are in rural schools
  - 49% are female students
  - 48% are students from marginalized racial and ethnic groups underrepresented in computer science (Black/African American, Hispanic/Latino/Latina, Native American/Alaskan, or Native Hawaiian/Pacific Islander)
- Code.org, its regional partner(s) Mississippi State University, and 13 facilitators have provided professional learning in Mississippi for
  - 788 teachers in CS Fundamentals (K-5)
  - 346 teachers in Exploring Computer Science or Computer Science Discoveries
  - 50 teachers in Computer Science Principles

What can your state do to improve computer science education?

States and local school districts need to adopt a broad policy framework to provide all students with access to computer science. The following nine recommendations are a menu of best practices that states can choose from to support and expand computer science. Not all states will be in a position to adopt all of the policies. Read more about these 9 policy ideas at https://code.org/files/Making_CS_Fundamental.pdf and see our rubric for describing state policies at http://bit.ly/9policiesrubric.

- **State Plan** - Mississippi has not yet created a state plan for K-12 computer science. A plan that articulates the goals for computer science, strategies for accomplishing the goals, and timelines for carrying out the strategies is important for making computer science a fundamental part of a state’s education system.

- **K-12 Standards** - Mississippi adopted K–12 computer science standards based on the CSTA standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.

- **Funding** - HB 1700 (FY 2021) allocated $300K for computer science professional development. HB 1643 (FY 2020) allocated $300K to develop computer science courses and professional development.

- **Certification** - In Mississippi, teachers with existing licensure can obtain an AP Computer Science Principles Endorsement by completing an approved AP training. Teachers can also obtain a K–8 or 7–12 add-on endorsement by completing coursework or approved professional development for specific courses.

- **Pre-Service Programs** - Mississippi has not yet established programs at institutions of higher education to offer computer science to preservice teachers. The computer science teacher shortage can be addressed by exposing more preservice teachers to computer science during their required coursework or by creating specific pathways for computer science teachers.

- **Dedicated State Position** - Mississippi does not yet have dedicated computer science positions in state or local education agencies. Creating a statewide computer science leadership position within the state education agency can help expand state-level implementation of computer science education initiatives. Similar positions at the local level could support districts’ expansion of course offerings and professional development.

- **Require High Schools to Offer** - Mississippi does not yet require that all secondary schools offer computer science. The state can support the expansion of computer science courses by adopting policies that require schools to offer a computer science course based on rigorous standards, with appropriate implementation timelines and allowing for remote and/or in-person courses.

- **Count Towards Graduation** - Beginning with incoming freshmen of 2018–2019, all Mississippi students must earn one credit in technology or computer science. Multiple computer science courses may satisfy the graduation credit.

- **IHE Admission** - All students applying to state institutions of higher learning in Mississippi for entrance in Fall 2022 must have earned one credit in computer science or technology, which aligns with the high school graduation policy.
Follow us!

Join our efforts to give every student in every school the opportunity to learn computer science. Learn more at code.org, or follow us on Facebook and Twitter.

Launched in 2013, Code.org® is a nonprofit dedicated to expanding access to computer science, and increasing participation by women and underrepresented youth. Our vision is that every student in every school should have the opportunity to learn computer science.

Who can you connect with locally to talk about K-12 CS education policy?

- You can reach Code.org’s policy contact for your state, Amy Roberts, at amy.roberts@code.org.
- The Expanding Computing Education Pathways (ECEP) Alliance (www.ecepalliance.org), an NSF funded Broadening Participation in Computing Alliance, seeks to increase the number and diversity of students in computing and computing-intensive degrees by promoting state-level computer science education. ECEP supports 22 states and the territory of Puerto Rico to develop effective and replicable interventions to broaden participation in computing and to create state-level infrastructure to foster equitable computing education policies. You can reach your ECEP point of contact Shelly Hollis at shelly.hollis@rcu.msstate.edu.

Data is from the Conference Board for job demand, the Bureau of Labor Statistics for state salary and national job projections data, the College Board for AP exam data, the National Center for Education Statistics for university graduate data, the Gallup and Google research study Education Trends in the State of Computer Science in U.S. K-12 Schools for parent demand, the 2018 Computer Science Access Report for schools that offer computer science, and Code.org for its own courses, professional learning programs, and participation data.