

Promoting Access to and Interest in STEM Fields

CHALLENGE: Develop tools for parents and students that promote students' interest in STEM and empower them to pursue STEM education locally.

PROBLEM: Today, too many of our Nation's K-12 and postsecondary students lack access to high-quality STEM education, and thus are at risk of being shut out from some of the most attractive job options in the growing United States economy. Courses in Computer Science are especially scarce in too many schools and communities, despite the job opportunities that these skills create. Nearly 40 percent of high schools do not offer physics and 60 percent of high schools do not offer computer programming. Of the nearly 17,000 high schools that were accredited to offer Advanced Placement exams in 2015, only 18 percent were accredited to teach Advanced Placement Computer Science (AP-CS). Minorities and students in rural communities often have even less access to Computer Science education. Nationwide, only 34 percent of African American students and 30 percent of rural high school students have access to a Computer Science class. Furthermore, even where classes are offered, there is a serious gender gap: less than a quarter of the students who took the AP-CS A exam nationally in 2016 were girls.

WHY IS THE PROBLEM IMPORTANT: With the growing role of technology in driving the American economy, many jobs increasingly require skills in science, technology, engineering, and mathematics (STEM) — including, in particular, Computer Science. These skills open the door to jobs, strengthening the backbone of American ingenuity, driving solutions to complex problems across industries, and improving lives around the world. As part of the Administration's commitment to supporting American workers and increasing economic growth and prosperity, it is critical that we equip America's young people with relevant knowledge and skills that will enable them to compete and excel in STEM fields.

VISION: Students and families are excited about what a STEM education can mean for them and have the information and resources they need to translate enthusiasm into skill-building. Digital tools to solve this problem could focus on STEM (including computer science) offerings in communities across the country at the K-12 and postsecondary level.

TARGET AUDIENCE: Parents, students, and/or STEM advocacy groups

POTENTIAL DATASETS:

- Civil Rights Data Collection (CRDC)
- National Assessment of Education Progress (NAEP) assessment data
- National Assessment of Education Progress (NAEP) survey data
- Program for International Student Assessment (PISA)
- Trends in International Mathematics and Science Study (TIMSS)
- Integrated Postsecondary Education Data System (IPEDS)
- Education Demographic and Geographic Estimates (EDGE)