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C-STEM Midwest Challenge Designed to Bolster Tech Talent Pipeline



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Detroit's Cobo Center will host the **C-STEM Midwest Challenge** tomorrow, a competition for PreK-12 students meant to engage them in communications, science, technology, engineering, and math through hands-on projects. **C-STEM's** founder, Reagan Flowers, said exposing kids to STEM early is key to bolstering the tech talent pipeline.



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Flowers is a Detroit native. She spent her formative years in the Motor City before her "struggles with education and home life" took her to Mississippi, where she enrolled in college and became a science teacher, she said. In 2002, Flowers, then teaching science at Jack Yates High School in Houston, TX, received grant money from NASA to build a robot with her students. She began entering the kids into robotics competitions; despite their enthusiasm, the team struggled.

"I realized my students weren't prepared at all because I wasn't prepared," Flowers said.

As a result of that insight, she successfully pursued her doctorate, where C-STEM began as a research project. Flowers described C-STEM as an education nonprofit focused on reducing student achievement gaps in STEM subjects and getting elementary, middle, and high school students interested in science and technology through collaborative work projects. C-STEM also devotes a significant amount of time to training teachers. Flowers said that in the 10 years the C-STEM program has been operating, it has impacted more than 200,000 kids.

Flowers, who was named a **Champion of Change** by the Obama administration, takes her program on the road in the form of daylong contests. The Midwest Regional C-STEM Competition at Cobo is the culmination of seven months of preparation on the part of the participants. Schools around metro Detroit signed up and completed training to take part in the competition free of charge, and then spent the fall and winter working on robotics, computer programming, civil engineering, art, filmmaking, and photography projects. The competition is designed to get students of various age groups to work together to solve challenges that are project-based learning activities.

"Kids don't want to do busy work," Flowers said. "The learning activities cover overpopulation's burden on resources, transportation, and other themes based on real-world problems."

C-STEM Challenge schools are provided with a curriculum, STEM tool-kits, and workshops to help prepare. Dozens of schools from the Midwest region and Ontario are expected to participate in the competition, which consists of six timed challenges that involve programming wireless remote-controlled robots, creative writing, film, 3D printing, photography, and mobile tech. There is also a quiz bowl. Flowers worked with STEM organizations on the ground like **DAPCEP** and **TechTown Detroit** as well as the **Shell Eco-Marathon** to get the Midwest Challenge up and running.

Flowers said the competition aspect energizes the students, and schools bring their bands, cheerleaders, and mascots to add to the fun. The top team wins \$1,000, and winning schools can also score computers, 3D printers, and cash, but mostly, she said, the students are competing for bragging rights and trophies.

"You've got to get in the game—that's where it starts, and that's why exposure is critical," Flowers said of kids and STEM. "You turn the corner through immersion. When you give kids high-quality resources and materials so they can compete in an equitable way, they love that. They become a group of powerful people, and they get really passionate about the projects they're working on."



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