



DETROIT

## Detroit students make mark in national STEM contest

Holly Fournier, The Detroit News

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Detroit — Alia Cummings huddled over a tangle of metal and wires, carefully unscrewing a tiny computer chip from a half-finished robot in a high school classroom.

“It’s like surgery,” said the 16-year-old, flashing a quick smile before transferring the machine’s “brain” to an adjacent project on the table. Several other girls stood ready with tools of their own.

Cummings is a sophomore at Detroit Edison Public School Academy, where a team of 20 students in recent weeks built a sophisticated robot and programmed an app geared toward environmental conservation. Six team members this month took their projects to Houston for the [National C-STEM Challenge](#), which attracted nearly 1,000 students with projects reflecting the fields of science, technology, engineering and mathematics, or STEM.



Detroit Edison students Lauryn Bishop, 15, left, Monet Heath, 15, and Aloni Brantley, 14, built a robot that transports objects. Clarence Tabb Jr. / The Detroit News

Two Detroit Edison students won \$600 in scholarships and another took second place in coding.

Their presence at the event is part of growing efforts in Detroit and across the country to introduce students to creative STEM lessons, with an emphasis on young women and minorities who are historically underrepresented in those fields.

“You’ve got a lot of talent just sitting on the bench,” said Detroit native Reagan Flowers, who hosted the Houston competition through her initiative [C-STEM Teacher and Student Support Services](#). “If we don’t start early enough to close those achievement gaps, then you’ve got a lot of untapped individuals who aren’t able to contribute in this economic space.”

### Narrowing the gap

Flowers said she created C-STEM in 2002 to help close the achievement gap between African-American and white students by making STEM programs more accessible to underserved students. Around 90 percent of the students in the program are minorities and around 40,000 students will participate this year in C-STEM-sponsored activities at their schools.

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Female and some minority populations are vastly underrepresented in the STEM workforce, according to the [U.S. Census Bureau](#) and a [government study](#) released in November. In 2015, African-Americans made up 13 percent of the population but accounted for 9.5 percent of the STEM workforce; Hispanics made up 18 percent of the population but filled 5.5 percent of STEM jobs. Women make up nearly half the working population, but in 2011 represented 26 percent of STEM workers, according to the [Census Bureau](#).

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Meanwhile, the demand for STEM workers by 2022 is expected to outpace the number of individuals with related degrees by around 1 million, according to [government data](#).

That leaves room in the workforce for a diverse set of students with varying interests and skill sets, said Tonya Matthews, president and CEO of the Michigan Science Center. The science center has an initiative called the STEMInista Project, which engages girls in the fourth through eighth grades to increase their interest and skills with STEM experiences.



Dr. Reagan Flowers, (left) CEO, CSTEM teacher & student support services and Dominic Held, physics teacher and robotics coach, they are seen going over the C-STEM documents. Clarence Tabb Jr. / The Detroit News

“I don’t believe that STEM is the realm of geniuses. STEM is the playground of the creatively persistent,” Matthews said. “No doubt, there are Nobel Prize winners among us, but there are also people who are just curious, love the work they do and love the impact that their work has on the world.”

Matthews said students must be given the opportunity to approach STEM fields through the lens of their own interests.

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“We acknowledge that different types of children might have different doorways into the exact same conversation,” she said. “We have to create different ways to expose people to it, starting with their door; starting with what they’re interested in.”

Flowers often integrates the arts into her program to attract students who aren’t naturally drawn to the sciences, she said. This year, students in Houston could compete in a sculpture category by creating sea turtles but had to use a device called [Makey Makey](#) to transform their artwork into a musical instrument.

“Then I’ve got to have an engineering report. I’ve got to know how they designed this thing,” Flowers said of the competition rules. “They’re doing STEM but they’re not looking at it as STEM. They’re looking at it as art.”

Cummings and her classmates at Detroit Edison created the robot and app for the C-STEM competition as members of after-school robotics and programming clubs. Their trip to Houston was sponsored by RushCard, a prepaid debit card company co-founded entrepreneur and hip-hop mogul Russell Simmons.

“We don’t value (STEM education) enough,” Simmons told The News. “We need to encourage children as much as we can to take part in it, especially in these underserved communities. We ought to make it fun and accessible.”

### The ‘underdog mindset’

Detroit Edison seniors Jakobi Tooks and Tanai Dawson, both 17, won a combined \$600 in scholarships at the competition, according to organizers. Sophomore Jaylen Austin, 15, helped design the team’s app and also took second place in a coding challenge in Houston.

Each student was presented a “very long” piece of broken code and asked to fix what they could within 30 minutes, Austin said.

“At first, I was kind of nervous but after looking at the code I had to fix, it turned out pretty well. I understood most of it,” said Austin, who wants to use his computer programming skills to start a business creating websites. “And the app turned out very well. Everything just turned out the way it should, and that’s a big relief when you get to see something come to reality.”



Jakobi Tooks, 17, a senior, he is seen testing the vex robot, the robot is used for transporting objects. Clarence Tabb Jr. / The Detroit News

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Cummings said it’s particularly important to encourage young girls to pursue STEM-related studies.

“You don’t usually see a lot of women doing this. They weren’t always raised to say, ‘I can do this,’ ” she said. “I would say to any little girl: The sky’s the limit. Engineering is more than just gender.”

Dominic Held, who teaches physics at Detroit Edison and runs the robotics club, said the charter school has actively recruited female students to “buck the trend” of male-dominated STEM fields.

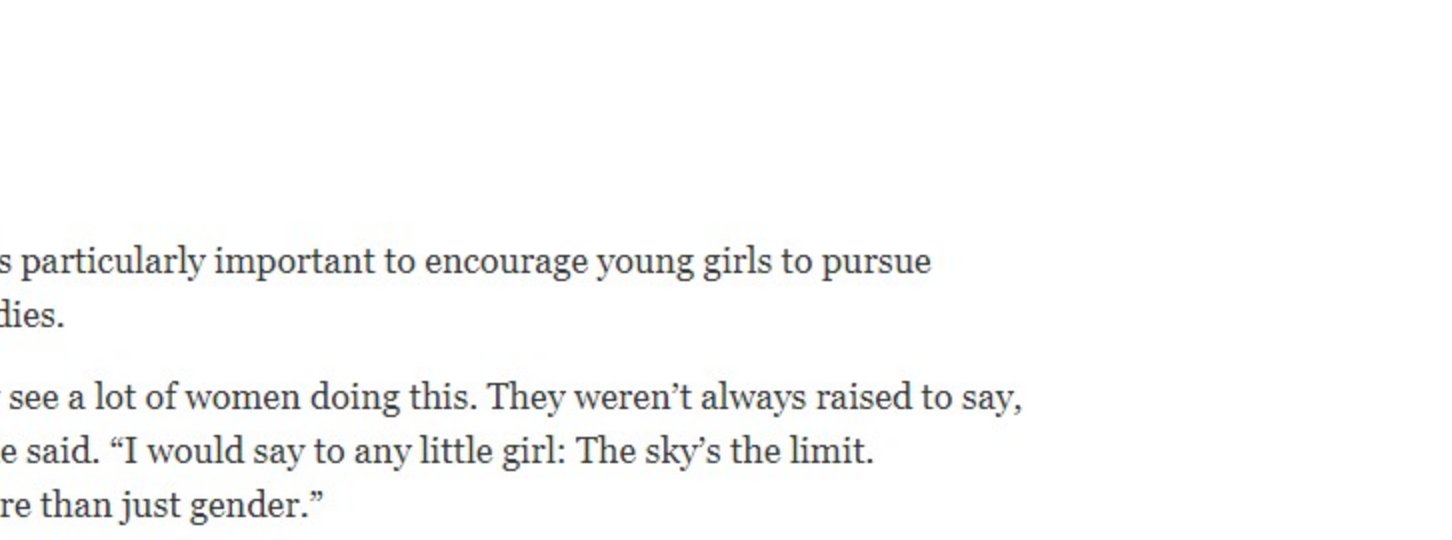
“We already have that underdog mindset (in Detroit) so (the girls) are used to that,” he said. “Our girls are just as valuable as the boys.”

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