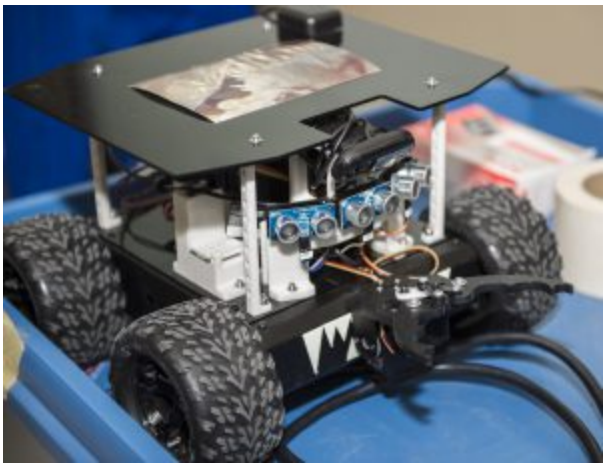
After winning last year's NASA Swarmathon virtual competition, a team of Montgomery College computer science and engineering students returned to the Kennedy Space Center in Florida to be a part of the more advanced physical competition for the first time. The NASA Swarmathon competition challenges students to develop cooperative robotics to revolutionize space exploration. For three days starting on April 17, the MC team networked with NASA professionals and tested robots that could someday explore the surface of Mars.

Leading up to the competition, the 23 students that make up the MC Swarmathon team faced no easy task: assembling the robots, getting them to communicate and uploading the code to run them.



The Swarmathon competition is designed to engage students in developing cooperative robotic algorithms. The students develop and test algorithms that could one day be used a future NASA mission to Mars. Robots are needed for "In situ resource utilization" (ISRU) by collecting materials such as water, ice, and useful minerals from the Martian surface to be used by astronauts who land on Mars.

The students built three robots for this year's physical competition. Hundreds of college students from minority-serving universities and community colleges competed in the event by programming teams of robots. In the competition, the robots collect cubes, but in actual outer space, they will operate much differently.

"When they get to work on Mars, they'll collect rocks, water, and all kinds of materials," Eren said. "The tough part is getting all of the rovers to move at once, as they are not individually controlled but reacting to a pre-set coding program built by the team."

Last year's run to the virtual title included victories over prestigious four-year universities City College of New York and the University of Houston. Despite not advancing to the quarterfinals this year, the Montgomery College Swarmathon team had the time of their lives at the Kennedy Space Center, and had the opportunity to see a SpaceX Falcon 9 rocket launch. The MC

Swarmathon team was active on social media throughout the process, including Montgomery College student Maksim Eren, who thanked the College via Twitter for the opportunity.

The team started building the robots in September and spent four weeks working on Fridays and Saturdays putting together the parts, and making some parts themselves. After they built them, the team split up to finish the robot.

“There are people who work on nothing but the algorithm that we use to collect the rovers,” Montgomery College student Charles Varga said. “There are people like me who work on the outreach. There are people who are writing the technical reports and the outreach reports.”
The Montgomery College team studies and competes under the guidance of Dr. David Kuijt, professor of computer science. The team also consists of students from Northwest High School in Germantown as part the Middle College Program, a partnership with Montgomery County Public Schools.

See more photos of the MC Swarmathon team’s trip to the Kennedy Space Center, sent to us by Sean Shagoshtasbi.