

UTC Spotlight

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Morgan State University with consortium members University of Maryland and Virginia Polytechnic Institute & State University



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Summer Transportation Institute Inspires Future Workforce

Would a workforce development initiative work with middle school students?

For 21 years, the National Transportation Center at Morgan State University has run its highly successful Summer Transportation Institute (STI), which gives 20 high school students a chance to experience the world of transportation professionals.

The free, 4-week program includes field trips, hands-on activities, contact with professionals in the field, SAT prep and recreation on campus. Over the years, several students have gone on to major in engineering or transportation studies.

This year the National Transportation Center and a new research, education and public outreach center at Morgan, the Urban Mobility & Equity Center, expanded the summer offerings to include a program for 17 middle school students. The program was sponsored by the Maryland State Highway Administration, which received approval from the Federal Highway Administration to use funding from an on-the-job training program.

While the high school students focused on aviation—including building a motorized airplane, touring aviation museums and even “flying” a plane in a flight simulator—the middle schoolers learned about bridge construction. They built bridges from paper and Popsicle sticks, and then used

the elements in the TRAC Bridge Module to construct bridges out of balsa wood. They tested the bridges, determining their weight capacity, during a final presentation

that was attended by FHWA officials and NTC staff. Students also visited the region’s bridges, whose construction and condition ranged from stately to dilapidated.

And it worked—the Middle School Summer Transportation Initiative (MSSTI) proved to be just as popular as the high school version.

Ariana Makumi, who will enter sixth grade in the fall, likes to draw and feels that would combine well with engineering or architecture.



Morgan State University

“There’s nothing that’s not involved in engineering,” she said. “When we built the bridges it was really fun. Engineers do everything you do—the food you eat has to be transported from all over the world so you can eat it.”

She enjoyed learning about Glenn L. Martin after a visit to the airport and aviation museum that bears his name. “It was really cool,” she said. “I had never been up close to a plane before. Some of the planes were actually used in World War II.”

Middle-schooler Janiyah Johnson said, “I thought building was only for boys, but, boy, was I wrong.”

Both programs concluded on July 28 with a banquet featuring keynote speaker Greg Slater, the administrator of the Maryland Department of Transportation State Highway Administration.

“We need you as a group of young, creative minds of all interests to shape this transportation field,” he told the students. “Careers in transportation matter—we shape communities ... we can degrade the quality of life or enhance it—it matters.”



Flight simulator.

The summer programs are not just enrichment for students, they introduce them to the field of transportation, creating the future workforce.



STI students.

“Everything is for free—that’s a plus,” she said. “I liked that it had SAT prep; I thought it would be a good opportunity.”

Said Kobe White, a junior at New Town High School, “I wanted to do something in science. After this, I developed a new love for transportation—it seems more interesting than I thought.”

Jawiyambe Thomas-James went through STI in 2012 and now is a majoring in civil engineering at Morgan.

“The most memorable thing was definitely the trip to Virginia Tech and visiting their SmartRoad,” he recalls. “STI influenced my decision to attend Morgan for engineering by exposing me to the staff and the environment in the engineering department. The program showed me how I would be treated and expected to perform here at Morgan. The program also gave me an insight on whether I wanted to focus on transportation engineering or civil engineering, and how I could possibly work in both focuses in the future.”

For the past eight summers, the National Transportation Center had offered a program for teachers, the Teacher Transportation Institute. Teachers learned how to translate STEM concepts for the classroom through transportation-related activities.

In recent years they studied roundabouts, which are becoming more common in Maryland. They visited roundabouts, performed traffic measurements, studied an intersection where a roundabout had been proposed but not built, and designed and built models of roundabouts.



Teacher Transportation Institute teachers.

After the 2016 program, Michael Canady Jr. said designing a roundabout gave teachers an insight into the specific interactive steps engineers use to organize their ideas.

Added Richard Quinn, “For me, being a math teacher, I’m always looking for real-life applications.”

Teachers earn continuing education credit for the two-week program, but this year, a glitch with a new computer system for the Baltimore City Schools prevented teachers from receiving information about the program in time to register and get the credits. The 2017 program was tabled due to lack of enrollment, but the computer problem was identified, and plans are underway for next summer’s Teacher Transportation Institute.



2017 STI students.

About This Project

The Summer Transportation Institute, Middle School Summer Transportation Initiative, and the Teacher Transportation Institute are free, non-residential programs developed by the National Transportation Center and the Urban Mobility and Equity Center, a Tier 1 Center, at Morgan State University. The programs are sponsored by the Federal Highway Administration, National Transportation Center at Morgan State University, the Urban Mobility & Equity Center, the Maryland Transit Administration, the Maryland Department of Transportation, the National Highway Traffic Safety Administration, and the Baltimore City Department of Transportation. For more information, contact Valencia Baker at valencia.baker@morgan.edu or 443-885-3969.

This newsletter highlights some recent accomplishments and products from one University Transportation Center. The views presented are those of the authors and not necessarily the views of the Office of the Assistant Secretary for Research and Technology or the U.S. Department of Transportation.



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