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Brooklyn Robots Travel to D.C., Teach Math and Science

By Mary Frost



NYU-Poly's 'Mechatronics Mania' Exhibits at Expo

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BROOKLYN — This past weekend the National Mall in Washington, D.C., was packed with hundreds of thousands of visitors taking in the latest generation of cyber technology, virtual reality and interactive robots at the first-ever USA

Science and Engineering Festival Expo.

And right up front were a handful of little robots from Brooklyn, in the “Mechatronics Mania” exhibit by Brooklyn’s Polytechnic Institute of New York University (NYU-Poly). The university was one of only 15 organizations chosen by the National Science Foundation to exhibit there.

Led by Vikram Kapila, associate professor of mechanical engineering and one of the founders of NYU-Poly’s robotics and mechatronics outreach program, graduate students demonstrated how they use the robots to raise students’ math and science grades and skills in Brooklyn’s economically disadvantaged neighborhoods.

The Expo was “massive,” Kapila told the Brooklyn Eagle Tuesday. “The graduate fellows interacted with youngsters on the street with a robot controlled by an iPhone, demonstrated a mechanical fish, built a scanner, and demonstrated a “smart home” where you can open your garage or control a security system using your iPhone.”

Kapila said that all age groups, from toddlers to 70 year olds, visited the NYU-Poly exhibit. “It was gratifying to see so many parents engaged in their children’s education. White, black, Asian, Hispanic kids – everybody was there. I saw a toddler with a baby bottle using the iPhone remote

to control a robot.”

In Brooklyn, teachers and NYU-Poly doctoral fellows use the kid-friendly robots to encourage students to learn skills that they will need to succeed in science, technology, engineering and mathematics (STEM). The robots help kids learn algebraic and statistical concepts, interpret graphs, solve problems and understand measurements.

Demonstrating the robots was an educational experience for NYU-Poly’s grad students as well, said Kapila. “They’re learning how to explain their research to non-scientists,” he said. “They’ll have to do this with venture capitalists or when they meet with congressional delegations.”

External evaluations of the program show that 74 percent of students saw their overall grades jump one-half or one full letter grade, and 80 percent saw their science and math grades improve one-half or one full letter grade. Students also gained other classroom skills.

The program started in 2007, when two members of what is now the Brooklyn Community Foundation urged NYU-Poly’s Kapila and Noel Kriftcher to create the Central Brooklyn Robotics Initiative (CBRI) and provided seed funding.

In addition to the Brooklyn Community Foundation, CBRI is supported by The Black Male Donor Collaborative, Motorola Foundation, J.P. Morgan Chase Foundation, NY Space Grant Consortium and other groups.

Demonstrating the robots in Washington were Kapila and Maged Iskander, associate professor of civil engineering, along with NYU-Poly students and Brooklyn teachers Cluny Lavache of Bedford Academy High School and Noam Pillischer of Urban Assembly Institute of Math and Science for Young Women.