

PRESS RELEASE

Teachers and Students Pair Up to Widen the STEM Pipeline

NYU Tandon Opens Registration to New York City School Teams

October 20, 2016



National Science Foundation Funds Novel Summer Program to Teach Robotics and Entrepreneurship to Those Willing to Establish Elective High School Courses

The NYU Tandon School of Engineering is issuing a call for New York City high schools to join a novel summer program that will bring together teams of teachers and their students who will learn robotics then take their knowledge back to their schools to establish elective courses in the STEM subjects: science, technology, engineering, and mathematics.

The National Science Foundation's Innovative Technology Experiences for Students and Teachers (ITEST) program recently **awarded more than \$1 million** to the three-year project, which will combine robotics and entrepreneurial education to improve teacher practices and student outcomes.

Each summer, two teachers and four students from eight high schools across New York City will learn, build, and evaluate robots and related technology at NYU Tandon, then implement elective robotics classes and capstone projects at their schools. Twenty-four schools will participate in all.

After two weeks of robotics training at NYU Tandon, the student-teacher teams will embark upon a week-long challenge in which they will design, build, and test their robots. Industry experts will challenge the teams during the fourth week to build robots to address real-world problems — ones encountered in the medical or energy fields, for example.

“Thanks to Professor [Vikram Kapila](#) and our [Center for K12 STEM Education](#), NYU Tandon has a successful history of sharing our passion for engineering and technology with the broader community around us,” said Dean [Katepalli R. Sreenivasan](#). “This new program is particularly compelling because of the way faculty

from so many disciplines embraced the challenge of building sustainable STEM programs in underserved New York City schools. I look forward to their success in preparing a new generation of teachers in the use of technology for the larger good of society.”

“The project is a sophisticated model for the integration of engineering, robotics, and entrepreneurship in a program that prepares students for the real world,” said Dr. Robert L. Russell, NSF program director-Division on Research and Learning, Education and Human Resources. “Students and their teachers will learn together by designing solutions to real-world problems and they will learn how to take their ideas to market. Dr. Kapila and his team have designed a project that will make a real contribution by researching important factors for developing our future engineers.”

The NYU Tandon researchers heading the program previously demonstrated that robotics can indeed engage students: In a prior NSF-funded project headed by Kapila, **70 percent of middle and high school participants improved their performance by a half or a full letter grade.**

He and collaborators also conduct research experiences for teachers at NYU Tandon, including one NSF-funded summer program that introduces teachers to elements of entrepreneurship and deploys them in industry to gain first-hand knowledge of potential career paths for their students. This element is particularly important for the schools in **NYU Tandon’s teacher programs, which serve minorities traditionally under-represented in the STEM fields.**

The newest project, titled “ITEST: Promoting Robotic Design and Entrepreneurship Experiences among Students and Teachers,” will impact 1,200 students over the next three years and countless more in the following years.

Collaborating with Kapila is an interdisciplinary team of experts including NYU Steinhardt Professor of Science Education and Chair of the Department of Teaching and Learning [Catherine Milne](#); NYU Tandon Professors [Jin Kim Montclare](#) from the Department of Chemical and Biological Engineering, [Oded Nov](#) from the Department of Technology Management and Innovation, [Magued Iskander](#) from the Department of Civil and Urban Engineering, and [Maurizio Porfiri](#) from the Department of Mechanical and Aerospace Engineering; and the Tandon [Center for K12 STEM Education](#)’s Jenny Listman and Ben Esner.

Application Process

New York City’s public high schools may self-nominate by identifying two teachers with at least three years of experience in the physical sciences, mathematics, or pre-engineering. Schools will be evaluated on student demographics, STEM course offerings, STEM-focused co-curricular programs, and their ability and commitment to offering a two-semester robotics and entrepreneurship elective.

Winning schools will then select two male and two female students from among their sophomores and juniors. The students must demonstrate an aptitude for STEM studies or be promising young people with underdeveloped skills. Participating teachers and students will receive a stipend.

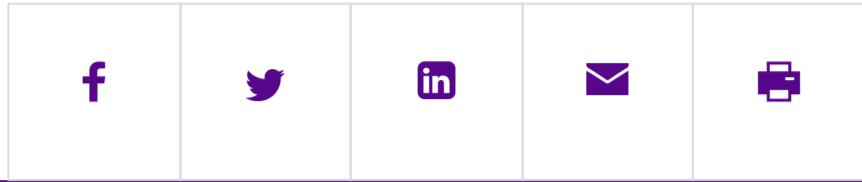
For more information or to apply, email ykapila@nyu.edu and k12stem@poly.edu with subject header “ITEST inquiry” or visit engineering.nyu.edu/mechatronics/ITEST.

Note: Images from prior NYU Tandon teacher programs at <http://dam.poly.edu/?c=1800&k=02c579dcef>

About the NYU Tandon School of Engineering

The NYU Tandon School of Engineering dates to 1854, when the New York University School of Civil Engineering and Architecture, as well as the Brooklyn Collegiate and Polytechnic Institute (widely known as Brooklyn Poly) were founded. Their successor institutions merged in January 2014 to create a

comprehensive school of education and research in engineering and applied sciences, rooted in a tradition of invention, innovation, and entrepreneurship and dedicated to furthering technology in service to society. In addition to its main location in Brooklyn, NYU Tandon collaborates with other schools within the country's largest private research university and is closely connected to engineering programs in NYU Abu Dhabi and NYU Shanghai. It operates business incubators in downtown Manhattan and Brooklyn and an award-winning online graduate program.



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