

Noyce Explorers Scholars Teachers

Preparing the Next Generation of Exceptional Mathematics and Technology Teachers for New York City

NSF Awards a \$1.4M STEM Teacher Preparation Collaboration with Borough of Manhattan Community College

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The City Tech National Science Foundation Noyce Scholarship program Noyce Explorer, Scholar, Teacher (NEST) inaugurated in January 2014 to address the severe local and national challenge of staffing middle and high school classrooms with well-qualified mathematics, science, and computer technology teachers. A three-tiered structure programming, including an annual scholarship will be used to support outstanding students majoring in STEM disciplines who would like to become middle or high school mathematics or science teachers in high-need New York City schools. NEST will address teacher under-preparation by recruiting, retaining, and graduating a community of Computer Systems Technology and Applied Mathematics students who will both receive STEM degrees and be certified to teach the disciplines of math, science, and computer science to students.

Public schools in low-income neighborhoods such as central Brooklyn and the Bronx are often classified as high-



PHOTO BY DORIAN VALENTINE

NEST PROJECT DIRECTORS ANDREW DOUGLAS AND FANGYANG SHEN RECRUIT NOYCE SCHOLARS.

need because of their difficulties in attracting and retaining teachers. Often times, a significant number of STEM teachers are not certified to teach in the disciplines to which they are assigned. Since City Tech's multi-cultural student body reflects the demographic diversity of the New York metropolitan area, with a significant majority having graduated from the NYC public school system, NEST is likely to impact the race-ethnic disparity gap in STEM by increasing the number of under-represented minorities who teach and serve as role models and mentors for under-served students in STEM.

NEST has a three-tiered structure: Noyce Explorers are a cohort of associate-level STEM students from both Borough of Manhattan Community College (BMCC) and City Tech who receive stipends to participate in an accelerated hands-on summer program at BMCC (an in-house technical support internships at both colleges). Giving Explorers exposure to teaching as a profession is a primary aim of this program tier; Noyce Scholars are a cohort of baccalaureate-level STEM students who are competitively chosen to receive scholarships of at least \$10,000 per year, in exchange for a commitment to teach math or technology in NYC middle or high schools. For each year

of scholarship support, recipients must teach for two years; Noyce Teachers are a cohort of post-baccalaureate participants who receive ongoing support as they are inducted into the teaching profession and fulfill their required teaching obligation. The tiered project design will facilitate critical transition points for STEM students as they attain associate degrees, progress through the baccalaureate degree in a STEM discipline, obtain licensure as middle and high school STEM teachers, and enter the teaching profession.

The five-year Noyce grant builds upon a strong relationship between City Tech and the New York City Department of Education, including the long-standing partnership between the Career and Technology Teacher Education (CTTE) program and schools where students practice teach, the Early College partnerships with City Poly and P-TECH, and College Now programs.

The NEST project team started recruitment activities in Fall 2013, and has so far attracted more than 80 students at both City Tech and BMCC. To date NEST program has engaged 25 students as Noyce explorers, summer program participants. The three week summer program, June 2-19, 2014 will be held at BMCC.