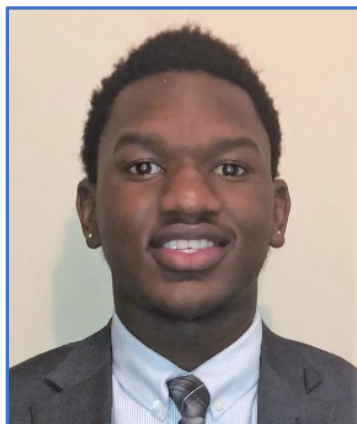


The Pathways to Student STEM Success Program (PTS<sup>3</sup>) is a five-year collaborative program that engages low-income and Hispanic senior and community college students in activities that lower barriers to student progress and success in STEM fields. Now in its third year, PTS<sup>3</sup> partners Lehman College with Hostos and Bronx Community Colleges. In addition to the program's innovations in student support, instruction, and curriculum, it includes a “cultural capital” element to increase students' knowledge about STEM education and careers as well as their connections with STEM peers, alumni, and professionals. Since its inception, PTS<sup>3</sup> has expanded from two institutions and a total cohort of 100 students to three institutions and a total cohort of 175. Approximately 750 students will have benefited from the PTS<sup>3</sup> initiative at the conclusion of the program.

In its first year, measured program outcomes demonstrated PTS<sup>3</sup>'s potential for transforming urban STEM education for underserved students. In addition to fostering a cohort-based learning experience, offerings included specialized advising, workshops to prepare students for college algebra, a summer research experience, a PTS<sup>3</sup> scholars' ambassador program, and the Pathways to STEM Success club. Nearly all students (95%) worked with an advisor during this period, and over half (61%) participated in the summer research experience. The cultural capital component also contributed to student gains.

By the second year of the program, PTS<sup>3</sup> demonstrated that its strategies, including its rigorous summer mathematics “boot camp” workshops, could make a significant impact on student success. Participating students were able to place out of College Algebra (MAT 104)—a prerequisite course for aspiring STEM majors that does not satisfy the math requirements for STEM degrees. Over two years, more than 91% of students in the program (123) improved their math skills well enough to test into higher-level courses. This model effectively relieves the bottleneck that frequently occurs in high-enrollment prerequisite courses like College Algebra by providing eligible students an immediate bridge to math courses that satisfy major requirements; strengthen the skills that they already possess; and assist them in developing skills in other topic areas.



PTS<sup>3</sup> was created not only to advance academic achievement but also to motivate students to excel in areas beyond focused academic study. Their own stories demonstrate the initiative's success. 20-year-old Bronx native Mohamed Magassa, who was in the first cohort of PTS<sup>3</sup> students, is a junior chemistry major at Lehman on a pre-medical track. Mohamed's experience in the program inspired him to help found and lead the Pathways to STEM Success club in 2017. The club benefits students who want to pursue STEM fields and includes important components such as mentorship, scholarship opportunities, and professional development. Mohamed currently does research with the Chemistry department and has recently been accepted as a 2018 Jeannette K. Watson Fellow.

Benefits of PTS<sup>3</sup> also extend to faculty members at collaborating institutions. The program provides professional development opportunities, including the Active Learning Institute, a two-day seminar on active learning strategies such as "flipped classrooms" that are proven to boost student success and engagement. The impact on faculty participants has been profound: 100% of faculty members who attended the institute the first year it was offered planned to make use of such teaching and learning strategies going forward. Overall, the program's success has had a ripple effect on STEM education at Lehman: a data science minor was recently developed, which will open the doors to STEM initiatives like PTS<sup>3</sup> for social science majors.

For more information about PTS<sup>3</sup> contact project director Christopher Milton [[christopher.milton@lehman.cuny.edu](mailto:christopher.milton@lehman.cuny.edu)] or call (718) 960-7294.