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PREPARING FOR STEM-DRIVEN CAREERS
* SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH

COVER STORY
THE LURE OF THE LAB: Larry Andrade leads research and development
The path to an Engineering degree and career is not the same for every student: Nelzir Louiseize’s path led him through the intensive first-year college program at Northeastern, Foundation Year, to build his academic strength for the rigors ahead.

Northeastern University College of Professional Studies created Foundation Year in 2009 for students like Louiseize, to improve college persistence among City of Boston high school graduates. In a city renowned for higher education, data show that the four-year persistence rate for high school graduates in 2007 who were enrolled in a two-year college was only 22 percent.

Northeastern University designed Foundation Year to address three key barriers to students’ success: a lack of academic preparedness; a limited understanding of the college system; and financial constraints.

A promising student focused on athletics

As Nelzir Louiseize prepared to graduate from Boston’s John D. O’Bryant School of Mathematics and Science, the faculty and counselors at the school recommended that he apply for the program. “Both of my parents were born and raised in Haiti and came to the United States around 1990,” said Louiseize, who grew up in Dorchester. “In high school, I was more focused on playing football and doing track and field. I was one of those kids cruising by, not really thinking too much about what I was going to do after high school.”

A bridge to college

Foundation Year accepted Louiseize and gave him a second chance to improve his academic preparation, while earning college credits and getting acclimated to the demands and environment of campus life. With a low student-to-faculty ratio of 8:1 and rigorous support, including writing and math tutors, Foundation Year provides a vital bridge to students who might otherwise have difficulty making the transition to college.

“I didn’t really have a backup plan if I didn’t get in,” said Louiseize. “I probably would have gone to Bunker Hill or another community college and then possibly transferred to one of the state schools.” >>>
Why do so few Boston high school students go on to complete a university degree? This is the answer that Foundation Year was created to address—and to rectify. The program began accepting students into its one-year intensive program in 2009.

Foundation Year students follow a rigorous curriculum, including math, English, psychology, history, and sociology, with electives in business, STEM, or the liberal arts track. Students are offered considerable support as they enter the world of academia, attend workshops on college preparedness, and are given email and phone access to faculty, tutors, and counselors, whom they can contact at any time. It’s a program designed to make the academic world relevant and accessible to traditionally underserved students, regardless of their ability to pay—and it is working.

While college persistence among Boston public high school graduates is low, students who completed Foundation Year are persisting at rates almost triple that of their peers. It is a program of which Northeastern is particularly proud, with program leaders and faculty sharing results, methodologies, and resources in the national conversation on how best to give students the chance to succeed academically.
Instead, Nelzir Louiseize is attending Northeastern University and working toward completion of his Bachelor of Science degree in Electrical Engineering next May.

A key to Foundation Year’s success is the extra attention each student receives. In addition to completing the Foundation Year program, Louiseize was advised to strengthen his Physics background with another course and attend the College of Engineering Summer Bridge program before starting his Engineering studies, which he did.

**Co-ops provide real-world experience**

Nelzir Louiseize has also benefited from Northeastern’s co-op program. At architectural engineering firm KlingStubbins in Cambridge, Massachusetts, he assisted the firm’s electrical engineers in designing and specifying electrical systems for building designs.

“We created the electrical blueprints for the building,” he explained. “The electrical engineers would mark up the plans by hand, and I would make the changes in the AutoCAD software.”

His second co-op was at LTX-Credence in Norwood, Massachusetts, a leading provider of semiconductor test systems. Tasked with modifying testing solutions to fulfill customer needs, Louiseize worked closely with engineers in a collegial atmosphere to fine-tune and test systems to ensure they met customers’ requirements. Again, it was valuable experience.

“The co-ops helped me discover what I want to do in my career,” said Louiseize. “I really like working with people, and I don’t want to be stuck in a lab. I’m thinking of becoming a sales engineer, which will enable me to meet people and travel while also doing engineering.”

In the meantime, Nelzir Louiseize is adding to Foundation Year’s impressive record of success. To date, 61 percent of the first group of Foundation Year students have persisted in pursuing their degrees—more than triple the rate of the Boston public high school graduates from the same year.

“My main advisor, Oyenike Balogun-Mwangi, kept telling me that she saw the potential I had and kept me motivated to apply myself,” said Louiseize. “Foundation Year showed me that if I concentrated on academics and applied myself, I could achieve something.”

With the calendar about to turn to 2016, Northeastern’s May commencement is now in sight for an aspiring electrical engineer.
The Northeastern College of Professional Studies Alumni Magazine is published for the alumni of the College of Professional Studies, the School of Professional and Continuing Studies, the Boston Evening School, Lincoln College, the Lowell Institute School, and the School of Education.