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Program Offers Disadvantaged Teens a Gateway to Health and Science Careers

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At a time when employment is hard to find even for adult full-time workers, many high school students would consider themselves fortunate to secure a minimum-wage job for the summer. Only those with luck or connections might be able to obtain a position that helps them build experience toward a future career. But thanks to an innovative program that focuses specifically on those least likely to find such opportunities, a group of New York City teenagers spent the summer as research interns in some of the most prestigious laboratories and hospitals in the Northeast. And that's just one facet of a 4-year high-school program designed to prepare students for highly skilled careers in health and science.



Starting early has been a key to success in helping disadvantaged students pursue careers in medicine and science. The Gateway Institute for Pre-College Education enrolls students in the ninth grade to prepare them for college and postgraduate education. The Institute provides intensive studies, visits to colleges and research centers, and internships in labs and hospitals. (Photo credit: Gateway Institute for Pre-College Education)

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These students are enrolled in the Gateway Institute for Pre-College Education (http://www.gateway.cuny.edu/Gateway_Site/home.html), which has helped prepare low-income and minority high school students for careers in medicine, science, and technology since 1986. According to a recent survey of the 85% of Gateway graduates who have been tracked, about 80% of them have graduated from 4-year colleges and 10% have gone on to medical school—30 times the national rate for a ninth-grade cohort, said Gateway director Morton Slater, PhD, who has been with the program since its inception.

Inspired by this success, Gateway has launched a similar program in Boston, which has just recruited its third group of students. In the coming years, physicians and educators committed to the program hope to replicate the Gateway approach around the country. "This program is urgently needed in more areas," said Howard Hiatt, MD, a member of the Gateway Advisory Board who is former dean of the Harvard School of Public Health, professor of medicine at Harvard Medical School, and senior physician at Brigham and Women's Hospital, Boston.

EARLY DAYS

Hiatt, who has spent 5 decades working to improve the quality and delivery of health care around the world, has been on the Gateway board of directors for more than 10 years. He first heard of the program from his longtime friend and colleague, Alfred Gellhorn, MD, a noted oncologist and leader in medical education.

In 1973, Gellhorn came to City College of New York to establish a 6-year combined BS/MD program—the Sophie Davis School of Biomedical Education. The institution's goal was to create more opportunities for minorities and low-income students to pursue careers in medicine and to increase the number of physicians working in medically underserved communities.

However, it didn't take long to figure out that many of the students who enrolled in the program really didn't have the preparation that would enable them to succeed, said Slater, who served as chairman of the admissions committee from 1975. To address this lack of preparedness, these educational pioneers realized they needed to reach those students at a younger age. Gellhorn turned to Slater and the Sophie Davis director of recruitment, Elisabeth Iler, JD, to create the Bridge to Medicine, which introduced 12th graders to college-level math, science, and English courses.

Although successful, Slater said the Bridge to Medicine program was still "too little, too late." He noted that in the schools they were targeting, almost 90% of the senior-level students were female. "If you start in 12th grade, you're getting more focused students, but there aren't enough left in school, and most of the males have disappeared," he said. "So we said if we started earlier—in ninth grade—we could do a lot more for a lot more students."

And so, in collaboration with the New York City Board of Education, Slater, Iler, and Gellhorn introduced the Gateway to Higher Education Program in 4 high schools around the city. In each school, they enrolled 50 students in each school in the ninth grade each year, divided into 2 classes of 25 students each. Public funders, including the City University of New York and the New York State Department of Education, as well as private-sector supporters, such as the Aaron Diamond Foundation, provided funds to get the program started and keep it running. (Since its inception, Gateway has attracted numerous supporters, including the Robert Wood Johnson Foundation and Bristol-Myers Squibb Foundation.)

To enter the program, students had to score at least at the 50th percentile on New York City's Seventh

Grade Math test and the Degrees of Reading Power test, have regular attendance, and have grades of 80 or better on a 100-point scale.

"We put everything we could into it," said Slater. The program instituted smaller class sizes, a longer instructional day, after-school tutorials, enrichment activities on Saturdays, and a longer school year (11 months), as well as summer internships at high-level universities and research institutes.

In addition to visits to colleges and research centers, the students also took field trips to the theater, the opera, museums, and symphony concerts—experiences most would not have had but which were crucial to giving them the confidence to succeed in an environment that can often be intimidating.

One of the most memorable parts of the program to many students, said Slater, is the summer research program. "This opportunity to observe and work with excellence is phenomenal to them," he said. "Many of our kids had never seen anyone work at this level."

TWO DECADES LATER

Among the alumni from the first year of the Gateway program are 2 women who attended Jamaica High School in Queens: Myeshia Minter-Jordan, MD, MBA, now the chief medical officer of the Dimock Center in Boston, one of the biggest health centers in the inner city, and Darlene Gabeau-Lacet, MD, PhD, who is finishing her residency in radiation oncology at Brigham and Women's Hospital and Massachusetts General Hospital in Boston.

As an honor student in middle school, Minter-Jordan hoped to become a physician. She noted that her home—a 2-parent household in which both parents worked—was more stable than those of many of her fellow students who came from more disadvantaged backgrounds. But while several people in her family had been to college, "they were still lacking the structure and knowledge of how to navigate through the college system, how to pursue research opportunities, how to become a doctor," she said. "I knew that I was interested in medicine, but I didn't know how to get there."

Gateway showed her the way. During the summer, Minter-Jordan carried out research at a number of institutions, including Harvard and Columbia, and then was accepted into Brown University School of Medicine's program in liberal medical education, which combines premedical and medical education in an 8-year course of study.

Minter-Jordan pointed out that the Gateway program fostered not only academic excellence—through a dedicated faculty that closely monitored progress and provided tutoring whenever needed—but also personal relationships. She became part of a tight-knit group with several other young women from her class, 5 of whom now have either a medical degree or a doctorate. "We remain friends to this day, and this really enables us to depend on one another through our academic careers and beyond," she said.

Gabeau-Lacet entered the Gateway program in 10th grade and so was able to contrast that to the standard high school program. "The difference between the standard track and the Gateway program was dramatic in terms of what we were exposed to," she said. "There was a common sense of purpose among teachers and students alike, a sense of community around academics and academic success, and really a sense that everyone believed we could meet high standards."

After graduating from Wellesley College, Gabeau-Lacet went on to Yale School of Medicine for her MD and PhD. "Without Gateway, I think I would have gone to college, but I'm pretty confident I wouldn't have

pushed myself to get two doctorates," she said. But supported by the Gateway community, she felt she could do "anything I wanted."

BEYOND NEW YORK

Another dedicated Gateway coordinator is Jennifer Wu, PhD, who oversees the Boston program, officially called O'Bryant Gateway to the Longwood Medical Academic Area. In collaboration with the city of Boston, Gateway established this 4-year pilot program at the John D. O'Bryant School of Mathematics and Science with \$1.5 million in funding from the Massachusetts legislature.

While based on the New York City endeavor, Boston's Gateway program is developing its own character, reflecting the local resources. "I feel we've been given a fair amount of autonomy to customize the program," said Wu.

The majority of research institutions, hospitals, and colleges in the Longwood medical area in Boston provide hands-on learning opportunities for the O'Bryant students. "These institutions have been terrific in providing help and support for these kids," said Hiatt, who was instrumental in transplanting Gateway to Boston.

Minter-Jordan and Gabeau-Lacet worked with Hiatt to get the program started in Boston. As Gabeau-Lacet noted, "My role was to get the word out that this was the extension of a strong and successful program that has been working for more than 20 years to push students from lower socioeconomic and underrepresented minority populations to higher education, and we all needed to do our part to help these students and teachers succeed."

Hiatt would like to expand the Gateway approach around the country so that as many students as possible can be prepared to pursue careers in health and science. He, Slater, and others are working with school systems in Baltimore and Chicago to develop partnerships to bring Gateway programs there.

"There are so few things you can do to be constructive in life that when you find something in an area of such need that shows so much in the way of promise, it's almost an obligation to pursue it," said Hiatt.

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