Models and Mentors

Kids give up their Saturdays to travel to Georgetown University—and a world of new opportunities.

Every Saturday morning, a band of determined middle and high school students make their way from the mean streets of Washington, D.C.'s Deanwood neighborhood—where in May this year an 8-year-old girl was killed by a stray bullet during a streetfight—to Georgetown University. Both literally and metaphorically, it's a long trip. Some students leave home before 7 a.m. and have to take two or three buses to get there. For some, the trip across town takes them as far west as they have ever gone.

What motivates these students to give up their Saturdays? The promise of a brighter future, for one. And two exceptional role models, Thomas Bullock and Charlene Brown-McKenzie, who inspire students' minds and spirits and help turn their lives around.

Bullock, a mathematician who grew up in D.C.'s Capitol Heights section, the son of school teachers, heads Georgetown's Institute for College Preparation (ICP), which has been supported by HHMI since 1992. Brown-McKenzie, a clinical social worker, is the program's only other paid staff member. Yet, with the help of dedicated volunteer faculty and students from Georgetown, determined parents from Deanwood, and alumni of the program itself, they have managed to send 92 percent of the more than 100 students who have participated in the ICP to college—from a school district where only one out of two students graduates from high school.

Once enrolled, an impressive number of ICP students stay to complete college. Of the program's first class, which finished high school in 1995, 85 percent have earned a college degree.

How do Bullock and Brown-McKenzie do it?

For one thing, "we make ourselves part of their communities, part of their lives," Brown-McKenzie says. They go to Deanwood's christenings, weddings, and funerals. They meet with parents and visit homes. They tutor seventh-graders at Ronald H. Brown Middle School, and Brown-McKenzie meets with seventh-grade teachers and special-education teachers there to help them design interventions for other at-risk students.

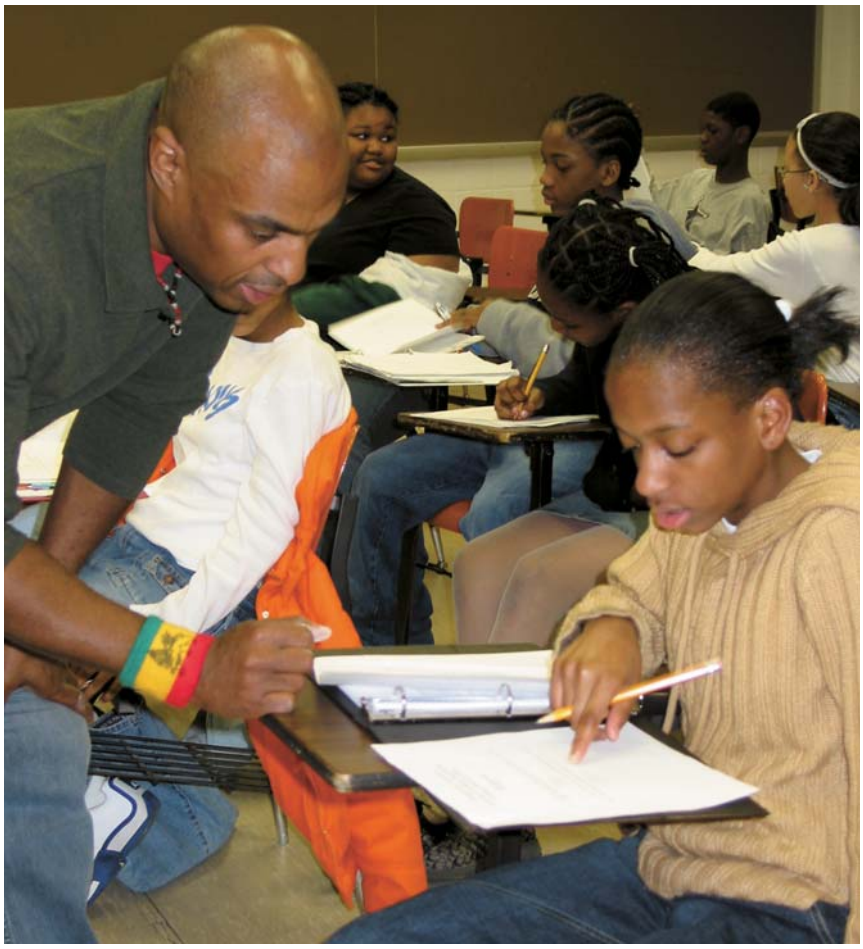
ICP's leaders inspired a Georgetown biology professor and her class to partner with the science teachers at the middle school. Twenty-five Georgetown sociology students are working with the middle schoolers to do what sociologists call "community asset mapping"—combing Deanwood for assets that might help it attract businesses and improve real-estate values. Two such assets are that the neighborhood is near a river and sits on a hill, much like affluent Georgetown. "What happened to Georgetown can happen to Deanwood too," Bullock tells them.

Basically, "the students see an environment around them that feels hopeless," says Bullock. "We give them hope."

At the ICP Saturday Academy, students study English, math, Spanish, chemistry, and Washington, D.C., history. In the class Success Skills, they learn how to manage their time, take notes, and apply for college and get financial aid. Once a month, parents attend the ICP, so that they can learn how to help their children prepare for, get into, and succeed in college. "We are trying to help parents face their fears and anxieties, to understand that college is a good and possible thing for their children," Brown-McKenzie explains.

Bullock and Brown-McKenzie, too, are willing to do whatever it takes to get "their" kids into college. When Christina Olukunle was accepted to Bennett College in North Carolina, her mother, a single parent with a younger daughter at home,

MATH MAPPING. ***African American mathematician Benjamin Banneker surveyed the land that is now the District of Columbia, laying out the streets on a grid similar to the x and y axes of the graph of an algebraic equation. That's the lesson that Tom Bullock, director of Georgetown University's Institute for College Preparation, shares with Gabrielle Alston, a student at Ronald H. Brown Middle School, during a Saturday Academy math class on the university campus.***



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lacked the resources to transport her there. So Bullock and Brown-McKenzie rented a van and drove Olukunle, accompanied by her mother and sister, to Greensboro. Now Christina has completed her junior year, and her sister Alice just finished her freshman year at Bennett. "We got two to college for the price of one," Bullock says with a grin.

If they stick with ICP—and most participants do—teenagers who have rarely ventured beyond their neighborhood go abroad during the summer between tenth and eleventh grades. One class went to Ecuador and another to Belize, where they studied biology, language, and culture. Now one student is applying for a music internship in Russia, another has traveled to Ghana, and a third is planning to enter the foreign service. "These are kids who had never been on a plane," says Bullock. "But now their career interests have just exploded."

ICP also takes students and their parents on college tours. Often they are hosted by ICP alumni, such as Nolen Wren, a junior at North Carolina Agricultural and Technical State University, and Cedric Southerland, a junior at Hampton University in Virginia.

DeAngelo Rorie is one of ICP's many success stories. When he was growing up in Deanwood the only thing Rorie knew about Georgetown University was that it had a good basketball team. Now he's a graduate of Georgetown, mentoring another generation of D.C. kids, and planning to apply to the police academy.

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Latonya Bell grew up in the same neighborhood. She attended Ronald H. Brown Middle School, where at least once a week a teacher's car was vandalized or stolen, and the playground faced a street where drugs regularly changed hands. By sixth grade, she had developed a "why bother?" attitude and was earning Ds and Fs. Now a junior at Georgetown, Bell is majoring in sociology and gaining fast on a 4.0 grade-point average. She spends one afternoon a week at her old middle school, working with seventh-graders.

Bullock and Brown-McKenzie, who see what they are doing as a successful model for urban school reform, are now hoping to use it to change an entire school system. Their plan is for nine of the D.C. members of the Consortium of Universities of the Washington Metropolitan Area to each adopt two high schools and their feeder middle schools. Partnering with businesses and philanthropies, they will spread the ICP model to all of the D.C. schools.

"We want D.C.'s kids to realize that they can go to college," says Bullock. "We want them to go. We want them to stay. We want them to graduate. And we want them to help the next generation do the same thing."

—JENNIFER BOETH DONOVAN

Tracking the Transgenic Fly

In a Harvard lab, local high school students learn—and teach.

It's an overcast March morning in Harvard Square—and a great day to go play with flies. In a darkened lab at Harvard University, a swarm of seniors from suburban Needham High School suck mutant *Drosophila* into cotton-plugged hoses. "Suck harder," urges one young investigator. "No, *you* do it," insists another. "Eww, gross," says a third.

It's not exactly standard chitchat for the lab, but then, this is not your standard lab session. The students are visiting Harvard to take part in an HHMI-sponsored outreach program run by the university's department of molecular and cellular biology (MCB). Over the course of three weeks, the MCB Outreach Program brings nearly 500 students from 31 high schools in Massachusetts, Rhode Island, and New Hampshire to Harvard for hands-on laboratory experiences.

Conducting experiments on fruit fly behavior, the Needham High students investigate whether *Drosophila* gravitate toward light—and, if so, whether they can be trained to do otherwise. The procedure involves loading the flies into mazes that allow assessment of the creatures' hypothesized preference for light, hence the need for the rubber transfer hoses (plugged with cotton because, as program coordinator Tara Bennett explains, "you can only swallow so many transgenic flies").

In addition to the fly lab, this year's students participate in workshops on the polymerase chain reaction (PCR), where they analyze their own DNA from cheek swabs, and workshops on cardiac physiology, where they dissect calf hearts and examine their own EKGs before and after doing jumping jacks and other exercises.

These experiences are structured to mesh with the high school curriculum, says Robert A. Lue, executive director of undergraduate education and senior lecturer at Harvard, who is the founder and director of the university's biology outreach program. Jennifer Woo, a teacher at Needham High who signed up her advanced-placement biology class to work with flies, uses the experience to supplement lectures on genetics and behavior. "It's a nice change of pace," she says of the outing, "and it exposes the students to science in the real world."

And real-world science it is. "This is the cutting edge in fly behavior," says Benjamin de Bivort, a second-year graduate student and outreach program teaching fellow. The experiments performed in the morning fly lab are virtually identical to those that de Bivort is doing for his Ph.D. thesis with Harvard professor Sam Kunes. The Needham students place flies in mazes that were designed by de Bivort and assembled just weeks before the workshop. "When we started, we weren't sure the experiments would actually work," says Kunes, who talked to the students about the biology of vision and then helped them analyze their experimental results.

Lue sees the program as a way to spark young people's imaginations, and its exercises in an actual lab give them access to materials and equipment that they might otherwise lack. "We don't have a single PCR machine in our lab," says Woo. Most of all, the class enjoys seeing how science happens "for real, in person," says Vicky Banchevsky, one of the Needham seniors. "It was so much better than biology class in school."

The program also benefits the Harvard students, postdocs, and faculty who run the labs. "The experience really enriches their view of teaching," says Lue, "and it gives them an opportunity to