THREE'S A CROWD, TEN'S A POSSE

ONE GROUP OF YOUNG SCIENTISTS AT BRANDEIS UNIVERSITY HAS AN UNBEATABLE SUPPORT NETWORK IN ALL AREAS OF COLLEGE LIFE.

BY SARAH C.P. WILLIAMS
PHOTOGRAPHS BY JÖRG MEYER

IT'S A MUGGY JULY MORNING, WEEKS BEFORE MOST BRANDEIS UNIVERSITY STUDENTS WILL HAUL THEIR BELONGINGS INTO DORMS.

Lecture halls echo with emptiness, and the buzz of construction permeates the hallways. But in one small classroom, 10 incoming freshmen listen intently to feedback on the lab reports they wrote the day before.

"Your conclusion can't be like the third Lord of the Rings movie where you have 11 endings," Marina Dang, a graduate student, tells the group. "But, don't worry, you guys all did a good job on yours."

When Dang finishes talking, the young men and women clump together and talk—about their dorm assignments and class schedules for the fall and how they spent the previous night. They laugh and gossip like old friends.

In fact, the group of high-achieving students from New York City has been deliberately matched up—with each other and with Brandeis—by the Posse Foundation, and they're spending two weeks of their summer at Brandeis for a "boot camp" designed to prepare them for the rigors of college science. They first met 7 months earlier.

The Posse Foundation has been establishing such groups for two decades—but this year's posse at Brandeis is the first to focus on science.

Shortly after his acceptance into the science posse, Usman Hameedi, who graduated from Benjamin Banneker Academy, a public school in Brooklyn, voiced high hopes for the program.

"I think it's going to be really beneficial to have good friends going into college," he said. "We're probably going to be the 10 nerds sitting in the library studying together all the time, but at least we won't be 10 nerds studying alone."

Deborah Bial, founder and president of the Posse Foundation (a Brandeis alum and 2007 MacArthur Fellow) launched the first posse in 1989 after counseling a student unable to finish college. "He said something that struck me," says Bial. "He said he never would have dropped out of college if he'd had his posse with him."

The Posse Foundation has helped more than 2,600 talented urban high school students through college by sending them to schools in groups of 10 to navigate the highs and lows of college life together. In 2008, the Foundation sent students from 6 cities to 33 top-tier schools across the country.

"It started with the idea of a support group, but it has become much more than that," Bial says. "It's also a leadership program, a diversity program, and a program that has transformative powers—both on college campuses and in the workforce." And though each posse is drawn from public high schools in select cities, applicants are not limited by race or gender. They're judged by motivation, academic achievement, and leadership. "Posse is not a minority program," she says, "it's a diversity program. You can see every kind of kid in posse, every race, every religion."

Unlike posses of the past, the 10 students gathered at the Brandeis summer boot camp share one additional quality: a love of science.

TOO FEW STAY IN SCIENCE

HHMI professor Irving Epstein received a $1 million grant from HHMI in 2006 for his plan to mesh the posse model with science education, but he was already an involved participant in the Brandeis posses. Epstein was Provost of Brandeis when Bial first approached him in 1996 about Brandeis joining the posse network, and he lobbied hard for the program. The Posse Foundation has since sent 11 traditional posses to Brandeis, but Epstein was concerned that the program produced very few science graduates.

"In a typical year, there are one, two, three, maybe even as many as four incoming students in the posse who express some interest in science," he says. By graduation, that number is typically down to zero. "Once every other year someone might graduate with a degree in the natural sciences," he says. Epstein saw room for improvement. In fact, he thought posses would be the perfect way to help students through the challenges of science.

"One of the big problems in the sciences is that students hit a wall," he says. "Typically you've done fine in high school, but the experience wasn't nearly as demanding as college-level work. And suddenly you've got to work really hard to keep up. And you begin to think 'I'm not sure I can do this,' and if you're alone it's very easy to convince yourself that you can't do it. Whereas if you have other people to talk to who say 'Yeah, we're going through this,' or 'Yeah we went through this and we came out the other side,' then you're more likely to be able to stick it out."

In 2005, Epstein called Bial at the Posse Foundation and told her he'd like to add a second posse to Brandeis each year—one devoted to science. After what Epstein describes as "a long pause on the other end of the phone," Bial enthusiastically voiced her support.

Two years later, Epstein's idea is playing out in the classroom, with support

SCIENCE POSSE, FROM LEFT TO RIGHT: NANA OWUSU-SARPONG, ANGEL GARCIA, GLORIYA NEDLER, REBEKAH LAFONTANT, VIRGINIA RAMOS, USMAN HAMEEDI, YVONNE PEREZ, ANDY SANCHEZ, EMMANUEL OBASUYI, JANAKI PATEL.

from HHMI. In that July boot camp, the first Brandeis science posse had already pulled all-nighters putting together scientific posters and learning the lessons it takes some college freshmen months to figure out.

"It really exposed me to science at Brandeis," says posse member Emmanuel Obasuyi, who attended the Marble Hill School for International Studies, a small college preparatory high school in the Bronx. "[Boot camp] is very intense and very quick paced, so you have to keep up with the work. And we immediately learned that you have to be able to approach the professor if you're not understanding a topic."

Melissa Kosinski-Collins, a Brandeis biology professor, designed the boot camp with Epstein, drawing on her background as faculty advisor to the United States Biology Olympiad Team.

Along with learning content, she wants the students to get used to a very different type of day. "In college you have to be as on top of your game for a 6 p.m. lab as an 8 a.m. class," says Kosinski-Collins.

Students attended workshops on everything from laboratory methods and terminology to time management and note-taking and book reports. They took a trip to collect water samples from the nearby Charles River and wrote in-depth reports on genetic diseases.

"The two weeks is designed to bridge the gap between expectations and the reality that tends to drive students away from science," Epstein says.

FRONT ROW STUDENTS

Well into their second semester of college, on a blustery January morning when other area schools have canceled classes and roads are slick with ice, the students of the science posse filter into Epstein's 10 a.m. chemistry class, a prerequisite for any natural sciences major. It's a 200-person lecture, and Epstein has loud jazz blasting as students fill the aisles—it's part of his effort to make chemistry more fun.

The posse students nab seats in the front two rows (it's not hard, most of the class sits as far back as possible). And when Epstein, halfway through a lecture on acids and bases, dons a wizard hat and begins pouring different chemicals into glass vials on the lab bench at the front of the room, the 10 posse students have the best view. Epstein, gray-bearded and bushy-eyebrowed, looks the part of a wizard, and the posse students pay close attention to the liquids that turn shades of purple and green, showing how strong the acids and bases are.

Later that afternoon, these students have plenty of good things to say about their year so far. They even reflect on their summer boot camp with good memories.

"Boot camp opens up your eyes," says Nana Owusu-Sarpong, a pre-med biology major in the posse. "I think without boot camp, college would have just hit me on the head."

SUSANNAH GORDON-MESSNER, A FOURTH-YEAR BIOPHYSICS GRADUATE STUDENT, AND MENTOR OF THE SCIENCE POSSE, KNOWS THE NITTY-GRITTY OF THE STUDENTS' LIVES. HHMI PROFESSOR IRV EPSTEIN PROPOSED THE IDEA OF SCIENCE POSSES AFTER NOTICING THE LACK OF SCIENCE STUDENTS THAT CAME OUT OF PREVIOUS POSSES.

Yvonne Perez, another member of the posse, agrees. "When we had to write our first lab report in boot camp, I was clueless, I was like 'Oh my God, what am I doing here?' And now I feel like that's my greatest strength—lab reports."

And if grades and rave reports from faculty members are anything to go by, the posse had a successful first semester.

"They're outstanding students," says Kim Godsoe, dean of academic services at Brandeis. The students all know how to use support resources, she notes, and they all know when to come to her for advice and help.

But the students have a different, at times less positive, take on that first semester—college is an adjustment for any freshman and they are no exception. There's no doubt though, in their minds, that their posse helped them through.

Obasuyi, who hopes to major in neuroscience and minor in philosophy, found his first semester at college especially challenging. "Stuff like managing free time and socializing took their toll," he says. But having his posse there added some security. "Most of the time I was really frustrated, but they were always there. When I see them working, their success is my inspiration, so I keep working. I know that they're having the same experience I'm having. It makes me feel not alone."

Hameedi, now a pre-med student interested in health policy and hospital administration who dreams of becoming U.S. Surgeon General, says the posse provided support to students outside the group, too. "One of my friends would always come to us for help," he says. "She automatically saw us as a resource, even though she didn't even know our grades, she just saw our motivation and would come to us."

A SECOND FAMILY

One night a week, the posse gathers for two hours with their group mentor, Susannah Gordon-Messer, a fourth-year biophysics graduate student. They have academic workshops, talk about their classes, or discuss problems they're all having. Sometimes, says Gordon-Messer, "they just sit there and vent, or discuss whatever social drama has gone on in the past week."

Gordon-Messer is their confidante, the one who knows the nitty-gritty of what is going on in their lives both in and out of the classroom. "I play every role from mom to therapist to academic mentor," she says.

Gordon-Messer also sees the pressure the group is under in the role as the first pilot science posse. "Everyone wants to meet them, and take them out to lunch, and hear about their lives," she says. "They feel so much on display, it makes them think they have to be perfect. But they're human, and they are 18 year olds who are off on their own and they deserve to be college freshmen."

In the first semester, some students began doubting their choice of major, pondering careers other than medicine

and research. Perez, a graduate of the Bard High School Early College—a selective public school in Manhattan—began college with dreams of medical school. She's not so sure now.

"I still love the sciences," Perez says. "However, I've noticed that medical school is precisely not for me, and the natural sciences might not be for me. Chemistry was my least favorite class and my grades show it. Same goes for lab, and I was just thinking about this and I'm not sure I want to spend my next three years doing labs."

Perez is leaning toward public health and sociology now, hoping to combine science with her love of interacting with people. She credits her posse with helping her keep science in the picture at all. "There have been many times I've wanted to drop chemistry, that would make my life easier, but in the long run I know I would regret that, because I know I want to do something related to science. I feel like my posse is what's keeping me in."

The mentors—Epstein, Godsoe, Kosinski-Collins, and Gordon-Messer—agree that it's the student's decision whether to stick with the natural sciences. "We won't talk any of them into anything, or out of anything," says Gordon-Messer. "We'll give them the information they need to make their own choices."

To give them a taste of science, Epstein places most of the students in active scientists' labs for hands-on lab work their first semester. "There is this illusion out there that science is an isolating vocation," he says. "That if you go into the sciences you'll never see people. And in fact, a research group in the sciences is a real community. So part of the plan was to get the posse scholars into labs as early as possible and let them get a sense of that."

Perez, for one, says working in a psychology lab is what spawned her new interest in the social sciences. "This lab is showing me that I want to be out in the world interacting with people rather than just be in a lab where pipettes are my best friends," she says. "And that there's research where I can be in the sciences and figure out how things work, but still get that interaction with people."

ROUND TWO

The 10 members of Brandeis's first science posse were chosen from among roughly 3,000 New York City high school students nominated for Posse scholarships in the fall of 2007—the beginning of their senior year. The first-round interviews were conducted in groups of 100 students. "Instead of it being a pencil and paper test, it's like speed dating," says Bial. "Kids are going through all these crazy activities—building robots out of Legos, having discussions on genetic testing—and all the time we're looking for leadership and problem-solving skills, for the ability to work well on a team. We're looking for the stand-out kids."

When the field was narrowed down, a select group of students was asked whether they'd be interested in the science-only posse instead of one of the more traditional liberal arts groups. Eventually, the Posse Foundation submitted the applications of 20 finalists to Brandeis, which selected the final posse of 10.

Already, this process has repeated itself, and the second class of Brandeis science posse scholars has been chosen. Epstein's original plans called for a two-year pilot program, and the success of this year's class gives him high hopes that the program will continue much longer.

"After one semester it has more than fulfilled my hopes and expectations," he says, "both in terms of how they're doing academically and the contributions they make to the university."

Bial says she considers the science posse a success so far and has had interest from other schools in starting their own subject-specific posses. "We're actually talking to a few schools about an arts posse," she says. "And we have enormous interest from other colleges and universities in science posses. Our big challenge is to make sure that we spend the time we need developing the program before we expand it like crazy."

Meanwhile, the Brandeis posse instructors appreciate the students' large and small accomplishments.

Throughout the students' first semester, says Gordon-Messer, they all learned that working with their peers often led to better grades and a better understanding of material. "When I asked them what was helping them get through their difficult classes," says Gordon-Messer, "they all said the same thing—it was the posse that pulled them through." ■

WEB EXTRA: Visit the *Bulletin* online to hear the Brandeis science posse students and mentors talk about their experiences.

AN ACADEMIC FRATERNITY

Epstein's inspiration to build a science posse was shaped by his own observations of students, by programs at other universities, and by a landmark education study on college calculus. ¶ **In the late 1970s,** Uri Treisman, a mathematics graduate student at the University of California, Berkeley, wanted to know why some students performed so much better than others in calculus. ¶ **His initial survey of the students** eliminated all the leading theories of the time: low income, lack of motivation, poor high school preparation, and lack of family support did not always translate to poor math scores. So he followed 40 students around, videotaping their lives and study habits. His efforts revealed an explanation, epitomized by one group of Asian friends all at the top of the calculus class. "In the evenings, they would get together," Treisman recalled. "They might make a meal together and then sit and eat or go over the homework assignments. They would check each others' answers and each others' English.... A cousin or an older brother would come in and test them. They would regularly work problems from old exams.... They knew exactly where they stood in the class. They had constructed something like a truly academic fraternity, not the more typical fraternity: Sigma Phi Nothing." —*S.W.*