

EXPANDING OPPORTUNITIES

More than 80 aspiring scientists converged on our headquarters earlier this year for an unusual 3-day meeting—and it wasn't simply the exuberant ice cream social that set it apart from the many other meetings HHMI hosts each year. Gathered in the Great Hall were more than 50 undergraduates, selected from among the thousands of students who participate in research projects that HHMI funds each year at liberal arts colleges and research universities. They were about to commence an experimental—and experiential—adventure, a summer of research in the laboratory of an HHMI investigator or professor. Last year's veterans also joined the throng to present their work and share their experiences.

So what made this meeting exceptional? The very presence of these students and what they represent for the future of science. Three years ago, HHMI quietly began a new initiative called EXROP—the Exceptional Research Opportunities Program—in an effort to encourage minority and disadvantaged students to consider careers in science. Through all the planning, two individuals offered inspiration and encouragement: James Gilliam, Jr., who served as a charter trustee of the Institute from 1984 until his untimely death in 2003, and Freeman Hrabowski, president of the University of Maryland, Baltimore County (UMBC).

I met Freeman more than a decade ago when Harold Varbus, then director of the National Institutes of Health, suggested that we might have common interests. He was right. Raised and educated in Birmingham, Alabama, at the height of the civil rights movement, Freeman is a mathematician who was initially recruited to UMBC to create a bold new program. The Meyerhoff Scholars Program began with a goal of developing a new generation of African American engineers and mathematicians. It has since expanded to encompass students interested in a wide variety of scientific disciplines.

Like Michael Summers, an HHMI investigator at UMBC, I became a convert. Over the past decade, 16 Meyerhoff Scholars have spent summers in my lab in Boulder, Colorado, and each of them has gone on to medical or graduate school. The overall success rate of the program is equally impressive. Since 1993, when the first class graduated, roughly 80 percent of the more than 400 Meyerhoff Scholars have gone on to graduate or medical school. In biochemistry, UMBC is consistently among the national leaders in undergraduate degrees awarded to African Americans.

The success of the Meyerhoff program demonstrated to us that careful mentoring and high standards would



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be fundamental to expanding scientific opportunities to disadvantaged students. We quickly realized that it wouldn't work if we simply shipped our students cross country into high-powered labs: The scientists needed to have appropriate research projects and a commitment to mentoring, which typically involves both the investigator and a hands-on grad student or postdoc in the lab. A community of undergraduate students is essential, as is a good living environment. We began slowly. First, we asked those who administer our programs at the colleges and universities to nominate promising students from disadvantaged backgrounds or from groups traditionally underrepresented in the sciences. We believed they would know best who would benefit from the summer experience. Then we asked for volunteer mentors among HHMI investigators and the new HHMI professors.

That first year, we placed 32 students in the laboratories of 25 different scientists. As of this summer, a total of 143 students have participated in EXROP, along with 116 scientists. We're now looking at a variety of ways to foster community among this extraordinary group of young people by bringing them together in scientific symposia and through other activities.

That brings me back to Jim Gilliam, who long encouraged us to think creatively about how HHMI could increase diversity within the ranks of American science professors. The Gilliam Graduate Fellowships, created by HHMI in Jim's honor, will be awarded each year on a competitive basis to EXROP students pursuing a Ph.D. in the biomedical sciences. This issue of the HHMI *Bulletin* reports on the first six Gilliam Fellows (see page 49).

Jim Gilliam might seem like a remote figure to these young people. By the time they were born, he was long out of law school and well on his way to a distinguished career in government, business, and civic affairs. But the lesson of Jim's life carries a powerful message. As his 85-year-old father, known universally as "Senior," pointed out to the EXROP students, Jim Gilliam wasn't one to accept the status quo. That lesson holds as well in life as it does in science.