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Gilliam Fellowships Launch Five New Biomedical Research Careers

The numbers tell the tale: African Americans make up more than 12 percent of the U.S. population, but earn less than 5 percent of the science and engineering Ph.D. degrees awarded annually in the United States. More than 14 percent of the population is Hispanic, yet Hispanic students receive less than 4 percent of the science and engineering doctorates awarded annually. And immigrants who come to the U.S. with little grasp of English face an enormous barrier to pursuing education in the sciences.

As a biomedical research organization dedicated to transforming science education, the Howard Hughes Medical Institute (HHMI) is addressing this vexing problem head-on through its competitive Gilliam Fellowships for Advanced Study.

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— **Thomas R. Cech**

Today HHMI announced the recipients of five new Gilliam fellowships, which enable exceptionally talented young scientists to attend graduate school. The Gilliam fellowships provide support for up to five years of study toward a Ph.D. in the life sciences for students, underrepresented in the sciences. The fellowships are named for the late James H. Gilliam Jr., a charter Trustee of HHMI who spent his life fostering excellence and diversity in education and science.

2007 winners of the competitive fellowships and their undergraduate universities are:

Irene C. Blat, Duke University Nisha M. Broodie, University of Miami Veder J. Garcia, University of Maryland, College Park Eunha Kim, University of California, Los Angeles José A. Rodriguez, University of California, Los Angeles

"The Gilliam fellows are exceptional young people with enormous potential and a burning desire to do biomedical research." said Thomas R. Cech,

HHMI president. "Jim Gilliam would be proud to know that fellowships in his name are enabling these talented students to pursue scientific careers and help diversify the ranks of American science professors."

It is clear from their biographical profiles that the 2007 Gilliam fellows have already begun to chart stellar courses for their graduate studies. Blat has already published an article in a major research journal and plans to do molecular and genetic analyses of the effects of pesticides. Broodie's sights are focused on a career as a cancer biologist. She will begin by studying the roles of the enzyme called Polo-like kinase 1 (PLK1) as a tumor marker or an oncogene. Garcia plans to become a plant biologist, and his next step will be to study the function of a family of plant proteins called immunophilins. Kim wants to develop a genetic screen to identify mutations associated with chronic myeloid leukemia, and Rodriguez will investigate whether targeted delivery of antigens can reprogram the immune system to produce a strong response to tumor-associated antigens and infectious diseases such as HIV, or even bioterrorism agents.

"It's exciting to help students like the 2007 Gilliam fellows pursue such lofty goals," said Peter J. Bruns, HHMI vice president for grants and special programs. "They were chosen for their academic excellence, their scientific potential, and their commitment to a career in research."

Gilliam fellows are selected from a pool of students who participated in HHMI's Exceptional Research Opportunities Program (EXROP) as undergraduates. Over the past four summers, 188 EXROP students have conducted research in the labs of HHMI investigators and HHMI professors. Their research ranged from investigation of the role that a neurotoxic protein, p25, may play in neurodegenerative diseases such as Alzheimer's, to the molecular genetics of antibody formation.

In 2007, up to 60 more outstanding undergraduates will be selected to participate in EXROP and placed in HHMI labs to do summer research. They then will join the pool of students eligible for future Gilliam fellowships.