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Grant Recipients Demonstrate Innovation

The new undergraduate grants will support a variety of projects to improve life-sciences education at research universities, including undergraduate-graduate-faculty research teams, recruitment of more women and minorities, interdisciplinary courses, and programs to train and motivate graduate students and postdoctoral fellows to teach undergraduates.

Emory University will establish teams of faculty members, postdoctoral fellows and graduate students to mentor undergraduates and work on new curricula incorporating emerging fields such as bioinformatics and new approaches such as the use of problem-based learning. Members of the Atlanta University Center, a consortium that includes historically black colleges and universities, will comprise the teams. Montana State University will focus on recruitment and retention of women and Native Americans through partnerships with the American Indian Research Organization and a consortium of the state's tribal colleges. To help attract more Native American undergraduates, the university plans a six-week summer research and development program for high school students and teachers from Montana's seven Indian reservations. Princeton University will develop an experimental course in molecular biology to introduce undergraduates in engineering, physics and mathematics to quantitative thinking in biology. It will emphasize measurement and data interpretation using mathematical modeling. The course could serve as a model of a biology requirement for engineering and physical sciences majors. Stanford University will develop interactive Web-based virtual laboratories and other teaching aids to supplement classroom instruction in biochemistry, genetics, and molecular, cell and developmental biology. Six interactive, Web-based units in physiology, already developed under a previous HHMI grant, will be made available to the public. At the University of California, Los Angeles, graduate students interested in undergraduate teaching careers will participate in a university teaching fellows program in which they will develop and teach introductory level undergraduate seminars in their fields, as well as general science seminars for non-science majors. The program's goal is to develop future college and university teachers and to create a unique scientific community of undergraduates, graduate students, postdoctoral fellows and faculty members. The University of Colorado at Boulder will establish the Genomics Teaching Place, a central laboratory-teaching facility where undergraduates and K-12 students and teachers can study genomics,

bioinformatics and computational biology. The University of Delaware will focus on improving the teaching skills of faculty, graduate students and postdoctoral fellows who participate in the Institute for Transforming Undergraduate Education, also developed by the university with HHMI support. Faculty and graduate students will develop new stand-alone investigative laboratories for introductory biology, biochemistry and chemistry courses. The laboratory courses will be taught by research faculty, and the experiments will be developed by postdoctoral fellows and graduate students who want curriculum design and teaching experience. The University of Maryland Baltimore County is developing an academic, research and community-support program for minority undergraduates to prepare them for graduate school, modeled after the university's successful Meyerhoff Scholarship Program, a top producer of science majors who go on to graduate study. The HHMI program will begin with laboratories for freshmen and progress to independent research in the lab of an HHMI investigator or another active research scientist. The University of Washington will expand the university's partnership with community colleges, bringing community college biology instructors to the university campus for summer workshops in current research, laboratory materials and teaching strategies in an area of biology of their choosing. Washington University in St. Louis will establish a science-education fellows program. After completing traditional summer research fellowships, science majors interested in education can spend another summer in classrooms developing educational materials. The fellows will pursue a novel, five-year combined degree program leading to a bachelor of arts in science and a master's degree in teaching.