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HHMI Awards \$50.3 Million in Undergraduate Grants

Fifty-three colleges and universities in 22 states and Puerto Rico will receive \$50.3 million in awards for undergraduate biological sciences education. The four-year grants come from the Howard Hughes Medical Institute (HHMI), the nation's largest private supporter of science education from elementary school through postdoctoral studies. Ranging from \$700,000 to \$1.7 million, the new undergraduate awards are designed to help institutions that grant bachelor's and master's degrees respond to a recent surge in enrollments in the biological sciences, as well as to the rapid advances in molecular biology, genetics and related life sciences. HHMI grants will enable colleges to expand and update laboratories, recruit new faculty members and provide research opportunities for undergraduates, including women and members of minority groups underrepresented in science. The awards support education programs that reflect the increasingly interdisciplinary nature of science and research, the central role that computers will play in post-genomic biology, and the growing need for biology majors to consider careers other than research, such as teaching science at the elementary or high school level. The grants will help colleges develop educational programs in the "new biology," which includes increased use of computers, sophisticated data analysis and the integration of biology and mathematics for studying molecular and cellular processes. Many colleges also will use their awards to create interdisciplinary programs linking biology and chemistry, physics and other fields of increasing importance to biologists. For example:

- Canisius, Harvey Mudd, Haverford, Kenyon and Occidental Colleges are developing new courses and hiring new faculty to add bioinformatics, bioengineering or computational biology to the undergraduate life sciences curriculum.
- Bates College, City University of New York Hunter College, Morehouse College and the University of Puerto Rico Mayaguez Campus will focus on attracting biology majors to science teaching and upgrading the knowledge and laboratory skills of existing teachers through outreach programs to their communities.
- Murray State University, Santa Clara University, Spelman College and Williams College will provide a variety of research opportunities

for undergraduates, both on and off campus.

"The colleges and universities receiving these grants contribute greatly to the education of both scientists and nonscientists," said HHMI President Thomas R. Cech. "These grants will help them do what they do best-providing undergraduate research opportunities and building bridges between the sciences and the humanities. I expect that these programs will serve as models for other undergraduate institutions." HHMI invited 224 colleges and universities to submit proposals. An external panel of distinguished scientists and educators reviewed the 204 proposals received. This is the fifth time that HHMI has awarded undergraduate science education grants to baccalaureate and master's degree-granting institutions. Four other competitions have made awards to research and doctoral-level universities to strengthen their undergraduate biological sciences programs. The latest round of grants brings to \$476 million the total awarded to 232 colleges and universities in 47 states, the District of Columbia and Puerto Rico since HHMI's Undergraduate Biological Sciences Education Program began in 1988. The undergraduate program is the largest of HHMI's grants initiatives. Among its accomplishments:

- Approximately 40,000 students have received Institute support for undergraduate research.
- Roughly 52,000 precollege teachers and 140,000 elementary and secondary school students have participated in science outreach programs supported by undergraduate grants.
- More than 6,700 new science courses have been developed.
- Over 270 new faculty in a variety of science disciplines have been appointed.
- Many colleges and universities have been helped to broaden access to science for women and minorities who are underrepresented in the sciences.

"Biology and technology are moving forward at an incredible rate," said Joseph G. Perpich, HHMI vice president for grants and special programs. "These grants build on previous HHMI awards to help ensure that the coming generation of scientists and educators will be able to tap the enormous potential of the Web, genomic databases, and other technological advances in biological research and teaching. These grants will help bring the extraordinary excitement of today's biology to undergraduates." HHMI's grants program supports science education in the United States and a select group of researchers in other countries, complementing its principal mission: the conduct of research in cell biology, computational biology, genetics, immunology, neuroscience and structural biology with its own scientific teams. About 350 investigators are employed in HHMI laboratories at 72

academic medical centers and research institutions across the United States. Altogether, the Institute has awarded more than \$850 million in grants, primarily to enhance science education from preschool through postdoctoral studies. Additional information is available at www.hhmi.org.

**Howard Hughes Medical Institute Undergraduate Biological Sciences
Education Program 2000 Grant Awards**