



HOWARD HUGHES MEDICAL INSTITUTE

# UNDERGRADUATE SCIENCE EDUCATION PROGRAM

Baccalaureate and Master's  
Colleges and Universities

Program Announcement  
2008

Registration deadline: May 16, 2007  
Proposal deadline: October 17, 2007  
Awards notification: May 2008  
Grant term begins: September 2008

**HHMI**

HOWARD HUGHES MEDICAL INSTITUTE

**Undergraduate Science Education Program**

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MEDICAL INSTITUTE**

www.hhmi.org

The Howard Hughes Medical Institute, a nonprofit medical research organization that ranks as one of the nation's largest philanthropies, plays a powerful role in advancing biomedical research and science education in the United States. HHMI's program in biomedical research rests on the conviction that scientists of exceptional talent, commitment, and imagination will make fundamental biological discoveries for the betterment of human health if they receive the resources, time, and freedom to pursue challenging questions.

The Institute's parallel grants program supports initiatives with the power to transform education in the life sciences for all students. Just as today's researchers solve complex questions by working across scientific disciplines and integrating tools from those disciplines, HHMI seeks to support undergraduate science education by integrating a variety of different tools and approaches that will engage students as they make critical decisions about which career path to pursue.

## UNDERGRADUATE SCIENCE EDUCATION PROGRAM

HHMI's Undergraduate Science Education Program is announcing its seventh competition for baccalaureate colleges and master's colleges and universities. Awards are expected to range from \$800,000 to \$1.6 million over four years.

The mission and needs of each institution vary widely. HHMI grants therefore support a range of activities that engage students in research and broaden their access to science; create courses that convey the excitement of contemporary science; develop new, current, and future faculty members; and establish or expand outreach programs that extend to elementary, high school, and community college faculty and students. Through this competition, HHMI also seeks to buttress science departments' research capacity as it relates to teaching and to integrate life sciences education with other disciplines, including mathematics and computer science, in a way that reflects the increasingly quantitative nature of modern biological research.

### ELIGIBILITY

The competition is open by invitation to 226 institutions classified in 2006 by the Carnegie Foundation for the Advancement of Teaching as baccalaureate colleges (arts and sciences and diverse fields), master's colleges and universities, schools of engineering, and tribal colleges. The invited institutions have proven records in preparing students for graduate education and for careers in science research and medicine.

### PROGRAM AREAS

The undergraduate program provides funding in four principal areas: student research and broadening access to science; new, current, and future faculty development; curriculum, equipment, and laboratory development; and precollege and other outreach. Institutions may request support for any or all of these areas.

### PROGRAM OBJECTIVES

- To engage students in inquiry-based science.
- To prepare undergraduates, including women and members of minority groups underrepresented in the sciences, for graduate studies and careers in biomedical research, medicine, and science education.
- To promote science literacy in all students.
- To enable science departments to broaden their expertise in emerging disciplines.
- To support high-quality, innovative approaches and techniques in science teaching.
- To enhance precollege education by connecting college science departments with education majors, K–12 teachers, students, and schools.
- To disseminate successful science education approaches and tools.

## PROGRAM APPROACHES

Applicants are encouraged to develop their own approaches to meeting the objectives of this competition on the basis of their institutional mission and needs. The following are meant to illustrate, but not define, the kinds of approaches applicants may wish to consider for their proposals:

- Summer research experiences that engage students in the excitement of scientific discovery as early as their prefreshman summer.
- Honoraria for faculty who mentor undergraduates in summer research.
- New faculty appointments and the development of existing or future faculty, such as experiences for postdoctoral fellows to hone their teaching skills while contributing to scientific and research activities.
- Curriculum development and acquisition of new laboratory and technological resources to integrate new discoveries, ideas, and approaches into biological sciences education.
- Strengthening the quantitative and computing skills of science and related faculty.
- Collaborations among biology, mathematics, and computer science departments that result in new or revised courses.
- Interdisciplinary research collaborations for faculty and students.
- Laboratories and resources, such as shared technical personnel, that support the integration of faculty research and teaching.

## PROPOSAL SUBMISSION

Applicants must register and submit proposals using HHMI's password-protected online competition system. Each invited institution is provided with the URL and access code. Institutions must register their intent to submit proposals by 2:00 p.m. ET, May 16, 2007. The deadline for submitting proposals is 2:00 p.m. ET, October 17, 2007. *Only one proposal may be submitted per invited institution.*

## PROPOSAL EVALUATION

A panel of distinguished scientists and educators will review the proposals. They will be looking for programs that offer innovative strategies and those that build on proven success. (Note: Among the grants awarded in the 2004 competition, 12 percent were to first-time HHMI recipients.) The principal evaluation criteria are:

### Proposed Activities

- The degree to which the proposal addresses one or more of the initiative's objectives.
- The likelihood that the proposed activities will meet the applicant's stated objectives.
- The correlation between the proposed goals and activities and the applicant's overall scientific or educational mission and its capacity to achieve them.
- The degree to which the proposed program will enable the applicant to enhance or expand its ongoing activities or to undertake new initiatives.
- The relationship, if any, of the proposed activities to initiatives already under way at the applicant institution supported either by a previous HHMI award or other external funding.

### Budget and Administration

- The effectiveness of the plan for management and administration of the program, including distribution of grant funds.
- The appropriateness of the budget to activities specified in the proposal.

## Long-Term Impact

- Evidence of effective assessment of previous HHMI-funded activities or other activities related to the proposal's goals.
- The inclusion of a plan to assess the impact of HHMI-funded activities using measurable outcomes.
- Evidence that the applicant has a strategy for broad dissemination of effective practices and products resulting from the grant.
- Evidence of noteworthy innovations or compelling approaches for effecting long-term institutional or departmental change in undergraduate science education.
- Evidence of support by the applicant's administration and of substantial involvement of the relevant science faculty, particularly senior research faculty, in proposed program activities.
- Evidence that responsibilities for program development and administration are distributed among appropriate members of the faculty, administration, and staff.

## INFORMATION

For information about this competition, including a list of invited institutions and descriptions of programs funded in previous competitions, go to [www.hhmi.org/colleges](http://www.hhmi.org/colleges).

For inquiries, contact Patricia Soochan, program officer, or Mary Bonds, program assistant, at (301) 215-8872, or send an e-mail to [ugradcomp@hhmi.org](mailto:ugradcomp@hhmi.org).

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