

HOWARD HUGHES MEDICAL INSTITUTE

MED
INTO GRAD
INITIATIVE

Integrating
Medical Knowledge
into
Graduate Education

**Program
Announcement
2009**

Register intent to apply by January 6, 2009

Application deadline: April 27, 2009

Award notification: September 2009

HHMI
HOWARD HUGHES MEDICAL INSTITUTE

Graduate and Medical Education Programs

OVERVIEW

HHMI's Graduate and Medical Science Education Program announces a second competition of the Med into Grad (MIG) Initiative. In September 2009, HHMI will grant four-year awards to institutions offering a Ph.D. in the biomedical sciences. These awards may be used to enhance existing graduate training programs or initiate new programs to develop a cadre of Ph.D. researchers who are prepared to conduct research at the interface of biomedical science and clinical medicine.

Applications will be accepted from any institution in the United States that offers a Ph.D. in one or more of the biomedical sciences. However, each program must have an affiliation with a medical facility that is engaged in medical education. Awards will range from \$400,000 to \$1 million over the four years of funding.

Applicants should access HHMI's online competition system at www.bhmi.org/competitions to obtain detailed information about this competition, register an intent to apply, access the online application materials, and submit applications.

ELIGIBLE INSTITUTIONS

Institutions in the United States offering a Ph.D. in a biomedical science may submit up to two applications for funding, although no more than one award will be made to a given graduate institution. Applications must be coordinated by the administration of the applicant institution to ensure that no more than two proposals are submitted. Designations must be made by an institutional official (e.g., president, dean, chancellor, provost) who is authorized to make this decision. Affiliation with a medical-training entity is required, either within the applicant's own university or by written agreement with another institution.

BACKGROUND AND GOALS

In 2005, HHMI launched the Med into Grad Initiative to address the growing gap between basic biology and medicine. Thirteen institutions were funded with four-year grants to enhance or initiate Ph.D. programs that would provide students with a better understanding of medicine and pathobiology. Based on the nascent but exciting successes of the varied institutional efforts, we are announcing a second competition to continue and expand this effort.

The explosive growth in biological knowledge resulting from the development of molecular genetics and modern cell biology has made it increasingly difficult for the biomedical community to incorporate this new information into medical practice. In addition, new fields of study, such as genomics and proteomics, have created fresh opportunities for understanding medically relevant biology. Thus, while an understanding of the biology of humans and their pathogens has grown, too little of that knowledge has been translated into applications for the treatment of disease.

The goal of this initiative is to develop an understanding of and an appreciation for medically relevant principles by future Ph.D. biomedical researchers. We expect this new cadre of investigators will recognize which biological problems are of the greatest clinical relevance and have the knowledge and skills necessary to facilitate the translation of new biological knowledge into tools to improve human health. Furthermore, we expect that these investigators will be able to create fruitful research partnerships with physicians.

PROGRAM DEVELOPMENT AREAS

HHMI intends to fund innovative, sustainable, and effective approaches to the integration of medicine and pathobiology into graduate study. We seek creative and cost-effective solutions to this training challenge and will support educational

innovations, which in turn can be disseminated to the biomedical research training community. While we believe that opportunities to change careers should be protected, it is not the purpose of this initiative to support programs that facilitate the movement of biomedical Ph.D. students or recipients into medical study. Conversely, we do not expect to fund programs to move medical students into biomedical science graduate study.

We recognize that there may be many ways to accomplish this goal and that projects will vary in focus, effort, and cost. HHMI has no specific program or strategy in mind, and intends to fund a diverse group of programs and institutions. For example, institutions with existing programs may wish to apply for funding to support a supplemental program leading to a certificate, master's degree, or other appropriate academic designation. One effort that might require the most resources could be developing new degree-granting graduate programs. Such a program might require recruiting faculty, establishing new curricula, and providing unique experiential medical training.

Though each program may have a different focus, we are looking to support programs that address the following areas, all of which are important in developing, enhancing, or maintaining graduate training programs.

- Curricular and Educational Activities
- Graduate Student Selection, Mentoring, and Support
- Program Sustainability and Institutionalization
- Program Evaluation
- Program Leadership
- Faculty Participation
- Program Administration

Curricular and Educational Activities

Curricular elements such as courses, laboratories, experiential learning, and research define the nature of graduate study. This initiative will support the development of exemplary graduate training programs with educational tools, resources, and activities designed to help Ph.D. trainees gain the knowledge and skills to work at the interface of the basic sciences and clinical medicine.

Graduate Student Selection, Mentoring, and Support

We wish to support the development of cohesive graduate training programs that go beyond simply supporting individual students in single laboratories. Students should be exposed to appropriate mentors who will guide them to conduct appropriate research at the interface between basic science and clinical medicine. These mentors will also help students understand the ethics, culture, regulatory environment, and language of medicine so that they can understand the challenges of conducting research in a clinical setting. In some circumstances, it may be appropriate to provide students with a stipend and very limited tuition support while they are engaged in certain aspects of the MIG program.

We want to support the development of a diverse population of talented students who will be able to learn the skills needed to work effectively in this area. We are especially interested in supporting programs that are working to attract individuals from groups underrepresented in the sciences.

Program Sustainability and Institutionalization

HHMI expects that applicants will work toward obtaining sustained institutional commitment to the Med into Grad effort beyond the grant term. Institutional commitment is key to success and sustainability and the application should contain strategies for integrating successful program elements into the curricular fabric of the institution.

Program Evaluation

Evaluating the effectiveness of a program's educational activities is essential in determining which elements should be eliminated, modified, continued, or disseminated. Each program is required to establish desired outcomes and identify how each program element will contribute to those outcomes. Formative and summative measures of the success of the elements should be developed and collected in the course of the program. This self-evaluation should be used to improve future activities and identify successful programmatic elements. It is also important that the proposal provide a longitudinal assessment plan that will follow trainees after graduation to determine whether the program was successful in accomplishing its goals.

The goal of this initiative is not only to establish strong graduate programs but also to solve problems inherent to training at the interface of biology and medicine. Consequently, HHMI will monitor and evaluate the overall initiative with the expectation that other institutions will employ successful strategies and educational elements in the implementation of future MIG training programs. All funded programs will be expected to participate in annual program directors meetings, share successful program elements, and collectively address common challenges. Awardee institutions must also agree to collect and provide data to HHMI for evaluation of the overall initiative.

Program Leadership

The success of a program depends on individuals who can provide the leadership to design, develop, implement, and manage the program effectively. We recognize that unique leadership arrangements may be needed to obtain effective participation across the interface between basic science and clinical medicine and want to support the development of appropriate governing mechanisms. However, HHMI will require the institution to identify a

primary program director who will assume academic and fiscal responsibility for the program.

Faculty Participation

A critical element in establishing an effective graduate program is the support and engagement of the appropriate faculty. It may be important to encourage participation of faculty with vibrant translational research activities or familiarize current basic science faculty with the clinical and regulatory aspects of medical research. Another opportunity to diversify faculty involvement may include expanding collaborations with other institutions or nonacademic entities.

Program Administration

Academic administration is important for the success of any graduate program. While this HHMI grant does not allow for indirect costs, up to 10% of the award may be budgeted for direct program administration. Appropriate activities include administrative support and development and distribution of recruitment and educational materials.

PROPOSAL SUBMISSION

Applicants must register their intent to submit a proposal by January 6, 2009, utilizing HHMI's Web-based competition system at www.hhmi.org/competitions. There is no limit to the number of interested parties from any one university who may register an intent to apply. However, no institution may submit more than two proposals as the primary program sponsor. If there are more than two registrants from an institution, HHMI will require the appropriate institutional official to designate which two applications will move forward in the competition.

We urge institutions that intend to submit a proposal register their intent to apply as early as possible in the proposal planning process. Important information regarding the application process will be communicated to those who are registered.

The deadline for submitting proposals and supporting materials is 2:00 p.m. ET, April 27, 2009. Application materials, instructions, contact information, and this program announcement can also be found at the competition system website.

PROPOSAL EVALUATION

An external review panel of scientists and educators will be convened to review the proposals. Proposals will be evaluated on how well they address the goals of this initiative and on the following criteria:

- Innovation, imagination, and vision of the proposed project;
- Perceived impact of the proposed project within and outside the institution;
- Commitment of the institution's, departments and academic units to the immediate success of the project and the continuation of successful elements of the project after HHMI funding has ended;
- Resources available that ensure success of the program, including; synergy with other programs and institutions; qualifications of the project director and team; and quality and characteristics of the students;
- Appropriateness of milestones and timeline for implementation;
- Quality of the program-assessment plan;
- Appropriateness of the budget; and
- Strategy for increasing the diversity of participating students.

AWARD NOTIFICATION

Successful applicants will be notified of their award in September 2009. Grant payments will be made in annual installments beginning March 2010. The grant awards will range from \$400,000 to \$1 million and will be allocated over four consecutive years.

REPORTING REQUIREMENTS

Grantee institutions will be required to submit annual progress reports of their program activities and annual financial reports, as well as an assessment of their programs. Institutions are encouraged to collaborate, as are units within institutions; however, the fiscal and reporting responsibilities must reside within a single institution and academic unit. HHMI funds will be provided to a single reporting unit, and any further disbursement of resources must be made through that unit.

INFORMATION

For information about this competition and a description of the programs funded in the first competition, please visit www.hhmi.org/grants/institutions/medintograd.html.

For inquiries, contact program staff at medintograd@hhmi.org.

HOWARD HUGHES MEDICAL INSTITUTE

The Howard Hughes Medical Institute (HHMI) is a medical research organization dedicated to biomedical research and science education. Its principal objectives are the advancement of fundamental knowledge in the biomedical sciences and the application of that knowledge to alleviate disease and promote health.

Through its grants and special programs, HHMI seeks to strengthen science education and biomedical research by supporting current and future leaders to advance scientific knowledge, develop educational products, and implement outstanding educational practices.
