

NOVEMBER 17, 2009

Grants Push Grad Schools to Bring Research and Medicine Together

Many graduate students choose a career in biomedical research because they want to be involved in curing diseases and improving human health, but few schools provide training that can help students identify pressing medical problems and develop treatments for human disease. The Howard Hughes Medical Institute is trying to change that by making grants to 23 schools that are developing new graduate programs or enhancing existing programs that prepare scientists to translate laboratory discoveries into new medical treatments and diagnostics.

The Institute is awarding a total of \$16 million through its Med into Grad Initiative, which encourages graduate schools to integrate medical knowledge and an understanding of clinical practice into their biomedical Ph.D. curricula. Each school will receive up to \$700,000 over four years to develop a program that brings clinical medicine into the graduate school curriculum. Twelve universities are receiving Med into Grad grants for the first time.

"It is important for Ph.D. biomedical scientists to gain an understanding of the real life medical problems faced by physicians in practice," says William Galey, director of HHMI's graduate education and medical research training programs. "Too few biomedical scientists appreciate how their research can help change the practice of medicine or public health."

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HHMI began the Med into Grad Initiative in 2005 as an experiment to find out how graduate schools could provide doctoral students the skills necessary to investigate the scientific mechanisms of disease and translate scientific

discoveries into clinically relevant treatments, diagnostics, and public health practices—and whether such programs would attract students. As a result of the initial competition, 13 schools were awarded a total of \$10 million.

“We need to increase the number of scientists who can work at the transition between science and medicine by doing high quality, medically relevant research,” says Peter J. Bruns, HHMI’s vice president for grants and special programs.

The Med into Grad Initiative has been a resounding success, Bruns says. For example, schools participating in the program are attracting top graduate students from within their departments – and students are applying to some of these schools because they have a Med into Grad program. “We’ve found this is something students are really hungry for. And it’s interesting because most of the programs require that students do work above and beyond the normal graduate curriculum, adding an extra measure of effort without eliminating anything from the basic curriculum,” he says.

Graduate students at all participating Med into Grad institutions collaborate with physician-scientists, choose medically relevant thesis topics, and publish work in medical journals. Beyond that, each institution works toward the program’s goals in a different way. Some schools, such as Baylor College of Medicine and Cleveland Clinic/Case Western Reserve University, have created entirely new doctoral programs that teach clinically relevant topics in the classroom, in the clinic, and in the laboratory. Others, such as the University of California, Davis, designed a series of extra classes and clinical experiences for students interested in clinical research. Some schools have designed classes that introduce students to the unsolved medical problems physicians face every day, while others focus on providing doctoral students with first hand experiences working with doctors and patients.

The Med into Grad programs are also catalyzing collaboration by encouraging basic science and clinical faculty to work together, both to design and teach classes and mentor students. “We are bringing scientists together who would not be working together otherwise,” Galey says. By working together, these faculty members not only promote students to work on important medical problems, but they may also move their own research in a new direction.

Any university in the United States that offers Ph.D. training in a biomedical science was eligible to apply for a Med into Grad grant. A distinguished panel of graduate educators, biomedical researchers, and physician-scientists selected the 23 awardees from among 103 applications submitted by 92 institutions.

The Med into Grad Initiative is part of a long-term effort by HHMI to increase the number of researchers who are able to turn basic science discoveries into improved treatments for patients. HHMI also supports

medical, dental, and veterinary students for one or two years of full time research training through the HHMI-NIH Research Scholars Program and the HHMI Research Training Fellowships. Physician-scientists are also an important part of the HHMI Investigator Program.