

HHMI Med into Grad Scholars (HMGS) Program



Penn Medicine



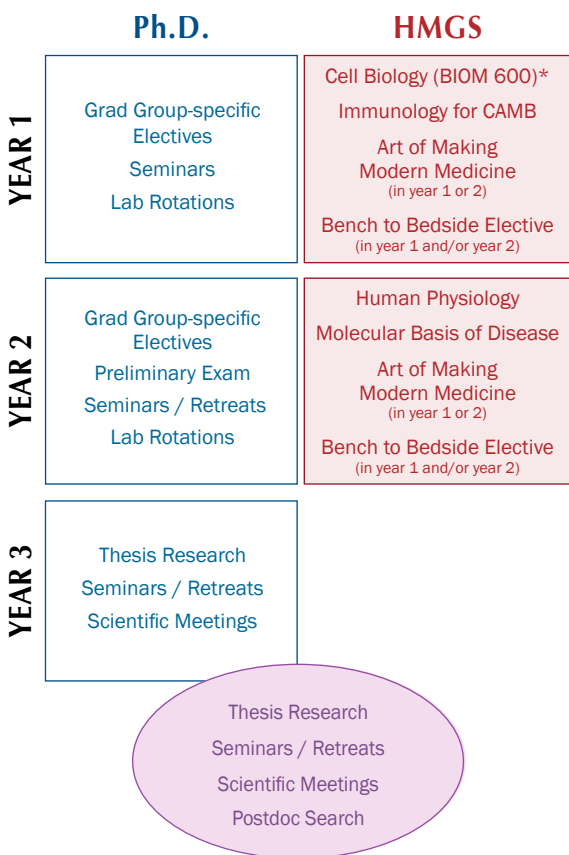
OVERVIEW

Acknowledging that the future of translational research depends upon the basic science community being well versed in human disease, the University of Pennsylvania School of Medicine, in conjunction with Penn's Biomedical Graduate Studies Program (BGS), has created the HHMI Med into Grad Scholars (HMGS) Program. The HMGS curriculum integrates focused medical education into the doctoral curriculum and experience, affording Ph.D. students an appreciation of medicine and human biology not formerly available. The program aims to promote clinically relevant research by producing basic scientists who not only have a clearer understanding of human biology and pathology, but who can effectively interact with clinical scientists to tackle medically relevant research problems. Upon successful completion of the program, students receive a Certificate in the Medical Sciences in addition to their doctoral degree.

CURRICULUM

The HHMI Med into Grad Scholars (HMGS) Program complements our existing doctoral programs at Penn Med. It was specifically designed for students who want to explore human biology and pursue research training at the interface of basic science and medicine. The HMGS program augments graduate training by offering courses that bridge basic and medical science and provides a foundation in the molecular basis of disease. The HMGS program also includes a clinical experience to encourage translational research and furnish students with a better understanding of disease processes and their consequences.

The HMGS program consists of 6 courses plus a clinical experience. The courses for the HMGS program count towards the elective requirements for the student's graduate group. Detailed descriptions of the courses are provided below. The distribution of the courses is outlined in the chart below:



* If Cell Biology is not required for a graduate group, it must be taken and will count as one of the two "Bench to Bedside" electives required for the program.

COURSES

Molecular Basis of Disease (BIOM 502)

The main purpose of this course is to introduce students to the basic pathologic processes that underlie disease, and demonstrate how research about these mechanisms may lead to discoveries that further our understanding of the disease and / or can lead to innovations in treatment that are clinically relevant. By using a selected group of diseases, this course will demonstrate how research on the basic mechanisms of disease can go from “the bench to the bedside” and enhance clinical care.

The Art of Making Modern Medicine (BIOM 503)

This course is designed for graduate students who are interested in translational biomedical research and/or the drug discovery/development process. This course is intended to provide an overview of how advancement in basic research is translated into new therapeutic interventions. The impact of “omics” technology on reforming the current drug discovery/development paradigm and its impact on personalized medicine will be discussed. Finally, students will see that drug discovery and development is a collaborative effort that requires strategic and critical thinking, decision-making, effective communication skills and team work.

Cell Biology (BIOM 600)

BIOM 600 is an intermediate level graduate course designed to introduce students to the molecular components and physiological mechanisms that underlie the structure and function of cells. The course is designed as an in-depth survey to cover general concepts central to the field of biochemistry and cell biology and to emphasize these concepts within the context of current scientific research questions and technical approaches.

Immunology for CAMB Students (CAMB 510)

The purpose of this course is to give a thorough grounding in Immunology to Cell and Molecular Biology graduate students with an emphasis on the role of the immune system in combating infectious and neoplastic disease and its role in immunopathological states such as transplantation rejection, autoimmunity and allergy.

Human Physiology (CAMB 532)

This course will present a survey of the physiology of most of the major organ systems. It will integrate knowledge of cellular and molecular mechanisms into an understanding of function at the tissue, organ and organism levels.



John Morgan Building

The University of Pennsylvania was the first institution in the country to offer formal training in the biomedical sciences. For the past 240 years, Penn has been known for its ability to successfully integrate science and medicine. Today, Biomedical Graduate Studies (BGS) is the academic hub for biomedical graduate education at Penn comprising seven interdepartmental cross-school graduate groups: Biochemistry and Molecular Biophysics, Cell and Molecular Biology, Epidemiology and Biostatistics, Genomics and Computational Biology, Immunology, Neuroscience, and Pharmacological Sciences. Over 600 scientists and educators represent more than 30 basic science and clinical departments in five schools throughout the University. Approximately 40% of the faculty are M.D.s or M.D./Ph.D.s housed within clinical departments, making Penn uniquely qualified to train tomorrow's leaders in translational research.



ADMISSIONS

HMGS admits up to six students per year. Candidates apply to a Ph.D. program and the HMGS Program concurrently. Only students accepted to a BGS graduate group will be considered for admission to the HMGS Program. A Statement of Purpose not to exceed 1500 words should be included with the application. Previous undergraduate and/or post-baccalaureate research experience is strongly recommended. Accepted students will be provided with full financial support in the form of a stipend, fees, tuition and health insurance. The application deadline for entrance in the following fall term is December 15 for domestic applicants and December 1 for foreign applicants.

Interested individuals are encouraged to apply via the BGS website: www.med.upenn.edu/bgs

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