



SOM I3-15

Additional Degree Programs

MD/PhD Program

For students planning a career as a physician-scientist, the MD/PhD Program represents an integrated pathway for training in biomedical or population health sciences research and medicine. The program integrates the curriculums of the School of Medicine and the Graduate School of Biomedical Sciences (GSBS) to provide a structured foundation of diverse topics with the flexibility necessary to meet the needs of the individual student. Students in the UMMS MD/PhD program have the option to select research training in biomedical sciences or in clinical population health sciences. The expected outcome is the education of talented students for a career as physician-scientists prepared to make significant contributions to health care and to become the leaders in academic medicine.

Curriculum

The first two years of the program are based in the School of Medicine. MD/PhD students start with a research rotation in the summer prior to the first year of medical school. Students have the opportunity to select a laboratory rotation with one of our many graduate training faculty. Between first and second year of medical school, students experience full-time lab rotations with the goal of identifying a thesis advisor. In addition to the traditional School of Medicine curriculum, MD/PhD students participate in an MD/PhD-specific course throughout the first two years of

medical school; this class is taught by research faculty of the Graduate School of Biomedical Sciences and provides basics of the GSBS curriculum with topics that are coordinated with the medical school curriculum to enhance integration between medical knowledge and research advances.

After completion of the second year of medical school, and Step One of the Boards, MD/PhD students complete one 16-week block of the core clerkships before starting graduate studies. This clinical experience with an ongoing clinical tutorial helps to solidify and maintain clinical skills during the thesis research years. Students are expected to complete their qualifying exams within three to six months of starting research. Members of the Qualifying Committee will be chosen from members of that graduate school most qualified to ensure oversight of the student's academic development in the selected area of thesis research. The students spend the next three or four years performing research and working on their thesis project.

The Thesis Research Advisory Committee, which in many cases is the same as the Qualifying Committee, evaluates the student's progress in research biannually and convenes when the student has written their thesis for the defense. The MD/PhD program integrates clinical education and preparation for return to medical school throughout the graduate years. During each term (fall, spring and summer) of the graduate school years, students participate

in a self-selected clinical tutorial (minimum of 10 hours per semester). Students can round on the ward services with a member of the clinical faculty (usually a physician-scientist), attend an outpatient clinic or participate in supervised freestanding clinics in the area. Longitudinal training in clinical and doctoring skills is also provided through the mentors in the Learning Communities. After the thesis has been written, defended and the final copies submitted to the Office of Graduate Studies, the last two years of the typical program are spent completing the clinical curriculum of medical school. Students enrolled in the program can return to medical school at several points in the academic year depending on their curricular needs and previous schedule choices.

A monthly student seminar is held for all students enrolled in the program. Advanced graduate students of the program present their research to the group and receive feedback on their presentation.

Eligibility

Residents and non-residents of Massachusetts are eligible for admission to the MD/PhD Program through the Graduate School of Biomedical Sciences and the School of Medicine.

Financial Support, Tuition and Fees

Tuition is waived and fees are set forth in the general schedule. Out-of-state PhD/MD students are subject to the non-resident annual Special Program Fee for each year

of enrollment in the School of Medicine prior to completion of the PhD degree. The enrollment fee for years one and two may be different than years three and four of medical school enrollment prior to completion of the PhD degree.

Massachusetts residents are subject to an annual in-state Special Program Fee for each year of enrollment in the School of Medicine prior to completion of the PhD degree. The Special Program Fee is deferred and forgiven in full with the successful completion of the PhD and MD degrees. Students are eligible for graduate student stipends and health and disability insurance throughout the program.

Application Procedures

Candidates for the MD/PhD Program begin the application process by submitting an application to the School of Medicine through the American Medical College Application Service (AMCAS). After receipt of the AMCAS application, candidates will be sent an online link to a supplementary UMass Medical School application. Only the MCAT is required for application. Additional information about the program is available by contacting phdmd@umassmed.edu.

Master of Public Health Program

A Master of Public Health (MPH) degree is offered at UMMS and granted through and accredited by the School of Public Health and Health Sciences at the University of Massachusetts in Amherst. The courses are taught in Worcester by faculty from both campuses.

The curriculum for the MPH Program is designed to enable health care professionals to earn this advanced degree while engaged in professional activities. Classes are scheduled in the early evening to accommodate working students. The courses cover a wide variety of subjects in the fields of epidemiology, biostatistics, health policy and administration, research methods, managed care, program planning, environmental health and data management.

The requirements for the degree include a total of 42 credits. This may include an optional MPH Project for three or six credits. All MPH students are required to complete a three-credit practice experience as a degree requirement. However, a student can petition for a waiver for the practice requirement based on previous, documented experience. All students, including those who receive this waiver, must complete 42 credits. For more information on the practicum requirement, please see: http://www.umass.edu/sphhs/MPHPracticumStudentHandbook_000.htm

A typical student can complete the MPH program in two to four years and can accelerate completion by taking courses on the Amherst campus or through the Public Health Practice online program. Students who do not wish to pursue the degree may take courses in the program on a non-degree basis.

Master of Science in Clinical Investigation

The Master of Science in Clinical Investigation (MSCI) program emphasizes the development of strong clinical investigation skills based on a solid foundation in study design, conduct of observational studies and randomized trials, clinical epidemiology and biostatistics. Students will also acquire excellent writing and oral presentation skills through formal classroom work.

Trainees completing the MSCI Program will acquire the necessary skills to successfully design, conduct and analyze the results of clinical investigations at the individual and population-wide level as well as design and analyze the results of studies that provide insights into the molecular pathophysiology of disease.

Trainees are grounded in the principles of clinical investigation with a flexible multidisciplinary focus, providing a curriculum tailored to their needs and interests as young researchers aspiring to become successful independent clinical investigators.

The MSCI Program offers two concentration tracks: population-based clinical research and bench-to-bedside translational research. These concentrations allow students to enhance their knowledge based on their current interests and career objectives. The participating faculty—representing the interdisciplinary nature of the MSCI Program—come from the disciplines of epidemiology, biostatistics, clinical research, biomedical informatics and molecular medicine.

Requirements

Candidates for the MSCI degree should have a medical or nursing degree or a PhD in the social, physical or biological sciences. While no minimum grade point average is required for entry into the program, students applying for admission must have demonstrated superior academic performance and have prior research experience. A master's degree in clinical investigation is also available to UMMS medical students who are accepted and enroll in the Clinical/Translational Research Pathway Program. This opportunity builds on the Pathway core requirements and includes an additional "pull-out" year to allow for enrollment in the MSCI in the Graduate School of Biomedical Sciences. Candidates for this program option must be in their second or third year of medical school and officially enrolled in the Clinical/Translational Research Pathway program.