Biomedical and Translational Science

Master of Science in Biomedical and Translational Science (M.S.-BATS and M.D./M.S.-BATS)

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Overview

The aim of the M.S.-BATS program is to train students in the conduct of high-quality multidisciplinary clinical research to facilitate the rapid transformation of basic knowledge to clinical medicine. The program is designed for students from varying levels of training, including medical students, residents, fellows, physicians, nurses, and others who are interested in conducting clinical research to maximize interdisciplinary communication and understanding sufficient to carry out high-quality clinical research. The dual degree M.D./M.S.-BATS program is intended to integrate clinical research training skills with the medical school curriculum by allowing medical students to be enrolled in both degree programs concurrently. The program provides training in core competencies required to conduct clinical research including study design reflecting the breadth and complexity of clinical research applications, critical appraisal of multidisciplinary research literature, conduct and management of clinical research, medical statistics, research ethics, and the leadership of multidisciplinary research teams. Students who successfully complete the program receive the M.S. degree in Biomedical and Translational Science. Medical students receive two separate degrees and diplomas: an M.S.-BATS degree and an M.D. degree from the School of Medicine at the completion of School of Medicine work. The M.S.-BATS degree can be conferred before completion of the M.D., or concurrently with the M.D. degree.

Faculty evaluate applicants to the program on the basis of grades, previous course work, letters of recommendation, MCAT or GRE scores, and other relevant qualifications. All graduate students, including those from public health, nursing science, and pharmaceutical science are eligible to apply, but the program has a highly clinical focus and is specifically designed for those with a sufficient background in clinical sciences. Applicants should have successfully completed a B.S. degree or equivalent, and may be current medical students, residents, clinical fellows, faculty, or licensed physicians in the community.

The M.S.-BATS program will initially offer training in Evidence-Based Medicine/Clinical Research, which will focus on the conduct and interpretation of clinical research, synthesis of clinical literature, and the assessment and improvement of quality of healthcare. Additional fields of emphasis will be added, including Molecular Medicine, focusing on the molecular mechanisms and molecular physiology of human disease, and Population Medicine, focusing on the application of epidemiologic research and research methods and findings to clinical practice.

The M.S.-BATS program is a two-year curriculum. First-year students are required to enroll in core courses including Introduction to Clinical Epidemiology, Introduction to Medical Statistics, Design and Analysis of Clinical Trials, and Ethics in Clinical Research. Additional required courses include, Comparative Effectiveness Research, Health Politics and Policy, Measurement Science, Outcomes Research and Advanced Applied Methods, and Disparities in Health and Health Care. Optional additional courses include, Introduction to Medical Statistics II and Quality, Efficiency, and Cost-effectiveness. Training during the second year emphasizes research and culminates in a written thesis. Throughout the program, students enroll in the BATS Seminar Series. By exception only, medical students and some students entering the program with advanced degrees, clinical research experience, or those who have previously completed the four core courses may be able to complete the program in less than two years.