



College of Graduate Studies
College of Medicine

Medical Scientist Training Program

(MSTP)

Bridging Basic And
Clinical/Translational Research



Welcome

The Medical Scientist Training Program (MSTP) at MUSC has developed as an outstanding environment for training future clinician-scientists. It is funded by a combination of a training grant from the National Institute of General Medical Sciences, State funds and private donations. We are committed to maintaining the highest standards for both the Ph.D. and M.D. degrees. In addition to receiving many honors and awards, our students are extraordinarily successful in obtaining their own extramural competitive fellowships. Their success rate is over twice the national average. Graduates of our program have gone on to postgraduate training at the most prestigious institutions followed by careers in biomedical research .

The program offers maximum flexibility for the student to select a mentor and research experience. The size of the program provides the greatest range of opportunities for close interaction with other students, as well as the faculty and directors. We take great pride in the strong collegial spirit that is associated with the MSTP. The program currently has 60 students and enrolls approximately 7-8 students annually. The average completion time to obtain MD/PhD degrees is 7.7 years.

Our goal is to train the future leaders in academic medicine, and we pursue that goal by providing an environment in which each student's intellectual and personal potential is nurtured, encouraged and challenged. A major emphasis is placed on training our students to translate fundamental discoveries into improved patient care.

Unique features of our Program

Our MSTP offers several opportunities to learn how to integrate basic biomedical research into clinical/translational research. Our Translational Sciences Clinic provides an opportunity for students to work with a physician-scientist role model for one-half day a week in clinic for 1 to 2 semesters during one of the graduate school years. The clinical experience is often aligned with the student's dissertation research. The senior month in the Clinical and Translational Research Center provides an opportunity for the trainee to learn how basic and clinical research are integrated. As a part of this process, the students write a complete clinical study based on the discovery that he/she made as a part of their PhD dissertation research. The Translational Medicine Seminar series also highlights the integration of basic biomedical research into improved understanding of pathophysiologic processes and new therapeutic approaches.

Perry V. Halushka, Ph.D., M.D.

Director, Medical Scientist Training Program
Dean, College of Graduate Studies
Professor of Pharmacology & Medicine

Lina M. Obeid, M.D.

Associate Director, Medical Scientist Training
Program
Boyle Professor of Medicine

Louis Luttrell, M.D., Ph.D

Associate Director, Medical Scientist Training
Program
Professor of Medicine
Director, Division of Endocrinology & Metabolism



MSTP Admission Guidelines

Applicants to the M.D./Ph.D. Program must first complete an application via AMCAS. Once the AMCAS application and the letters of recommendation are received by our office, it is reviewed by the Admissions Committee for the MUSC MSTP. The supplemental application is not required for the initial evaluation. Applicants who are considered competitive in our applicant pool will receive an invitation by email to submit a Supplemental Application to the program. For more application information <http://www.musc.edu/grad/mstp/application/>. The following guidelines are used in considering applicants:



Recipients of the AFMR Student Travel Award

- Evidence of a serious and enthusiastic commitment to the MSTP
- Evidence of a strong background in research
- Grade-point average of 3.5
- Superior performance on MCAT
- GRE is not required
- Receipt of a Baccalaureate degree prior to matriculation into the program
- Record of courses in the biological sciences
- Outstanding recommendations from faculty at the applicant's previous institutions and preferably from research advisors
- Applicants deemed potential students by the Recruitment Committee are invited for an interview. Hotel accommodations are provided.

MSTP Financial Considerations

Annual Stipend
\$23,000

Plus Paid Health Insurance and Tuition

MSTP Pathway

Medicine, First and Second Years

The first two years of the program follow the medical school curriculum which emphasizes a systems based approach with clinical integration.

Students spend the summers before and after their first year conducting research.

The National Board Examination Part I is taken at the end of the second year.

Graduate Studies, Three to Four Years

Following the second year of medical school, students pursue graduate studies leading to a Ph.D. degree. During this period, students complete all of the research and didactic requirements for a Ph.D. degree. Students also participate in the translational sciences clinic. This unique training experience combines medicine with science. Students are mentored by physician-scientists who are also role models.

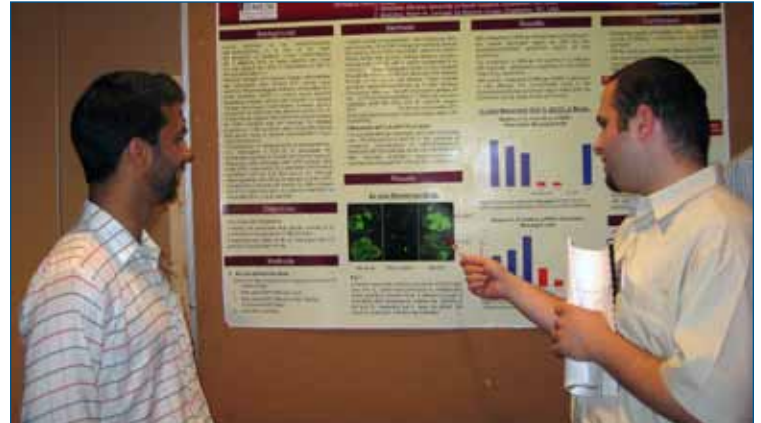
The MSTP Steering Committee requires that all laboratory work necessary for completion of the Ph.D. degree be finished before the student resumes clinical studies. The dissertation must be defended no later than December of the year that the student enters the third year of medical school.

Medicine, Year Three

The third year of medical school provides the basic clinical experiences in the major medical disciplines.

Medicine, Year Four

The final year of medical school consists of a series of required rotations and clinical electives that permit the student to further develop individual interests. These electives last four to eight weeks. Four-week subinternships are required for medicine, pediatrics and surgery. MD/PhD students will also take a clinical research rotation in the Clinical and Translational Research Center. During this year, MD/PhD students apply for desirable internships at outstanding academic medical centers.



Departments and Programs

During the summer prior to entering medical school, the students participate in a summer research rotation.

Dissertation research may be conducted in any of the following departments, interdisciplinary programs or research foci of excellence.

- Biochemistry and Molecular Biology
- Bioengineering
- Bioinformatics
- Biostatistics and Epidemiology
- Cancer Biology
- Cardiovascular Biology
- Cell Biology
- Cellular Injury and Repair
- Cell and Molecular Pharmacology and Experimental Therapeutics
- Developmental Biology
- Genomics/Genetics/Gene Medicine
- Lipidomics
- Microbiology and Immunology
- Molecular and Cellular Biology and Pathobiology Program
- Pathology and Laboratory Medicine
- Neurosciences
- Regenerative Medicine
- Proteomics
- Structural Biology

MUSC

Medical University of South Carolina

MUSC is among the nation's oldest medical institutions and was the first established in the South. Founded in 1824 as the Medical College of South Carolina, its campus now forms the core of the state's largest medical complex.

MUSC research facilities include the Thurmond Biomedical Research Facility and Gazes Cardiac Research Institute, jointly occupying 180,000 sq. ft. of laboratory space and a 7-story Basic Science Building. The Hollings Cancer Center is an advanced facility for basic and clinical cancer research with a recent expansion of 112,000 sq. ft. of research, educational and clinical space. The Children's Research Institute is a 122,000 sq. ft. laboratory research building adjoining the Basic Science Building. The new Drug Discovery Building (114,000 sq. ft.) and Bioengineering Building (100,000 sq. ft.) will open in July 2011. The state of the art hospital, Ashley River Tower, opened in January 2008.

Both research support and generated income have been expanding dramatically at MUSC for many years. Annual extramural research funds have steadily increased to its current level of \$233 million. The entire university budget now totals in excess of \$1.2 billion. There are approximately 12,000 employees.



MUSC has a combined fulltime faculty of approximately 1,200 physicians, basic scientists and other medical professionals. Student enrollment is over 2,500 in the six colleges: Medicine, Graduate Studies, Dental Medicine, Pharmacy, Nursing, and Health Professions. There also are 621 resident physicians enrolled in 23 specialty disciplines.



Charleston

It would be hard to imagine a place offering a more enjoyable environment in which to pursue an advanced degree. Charleston combines the best that life has to offer: the historic charm of centuries-old homes, plantation gardens, lively arts festivals, symphony concerts, ballet, museums, libraries, art galleries, dozens of first-rate restaurants, miles of sandy Atlantic beaches, fishing of all kinds, some of the country's finest golf courses and much more.

A bustling seaport city with about half a million people living in its metropolitan area, Charleston is located on a peninsula formed by the Ashley and Cooper Rivers. The historic district, in which the MUSC campus is located, presents a cosmopolitan, European style of living with quiet, winding streets and a varied range of historic architecture that is aggressively protected by local preservation organizations. More than four million visitors come to Charleston each year to sample the historic flavor and enjoy the area's many attractions.

This is also a very walkable city surrounded by waterfront parks with sunny lawns, bright flowers and fountains that flow in all seasons. Charleston's famous Market Street is three blocks of open-air shops and stalls where you can browse for everything from handmade sweetgrass baskets to Lowcountry foods and original watercolor paintings.

Charleston is a year-round outdoor city with warm summers moderated by ocean breezes. Winters are mild and short, giving way to spectacular springtime displays of azaleas and flowering dogwood.

For more information, contact:

Perry V. Halushka, Ph.D., M.D.

halushpv@musc.edu

Medical Scientist Training Program

College of Graduate Studies/College of Medicine

Charleston, SC 29425

843-792-3012/877-364-2214

<http://www.musc.edu/grad/mstp>