



BRIDGING BASIC CLINICAL / TRANSLATIONAL RESEARCH

# Medical Scientist Training Program

[gradstudies.musc.edu/programs/combined-degree/mstp](https://gradstudies.musc.edu/programs/combined-degree/mstp)



Changing What's Possible

# Medical Scientist Training Program

Bridging Basic 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, institutional funds and private donations. 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 for NIH NRSA fellowships. MUSC's MSTP ranks 3rd in the nation in per capita NIH National Research Service Fellowship Awards (NRSA) for M.D./Ph.D. programs. 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 training 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 our MSTP. The program currently has 60 students and enrolls approximately 7-8 students annually. The average completion time to obtain both degrees is 8 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.

**Nancy Klauber-DeMore, M.D., FACS**  
Director, Medical Scientist Training Program  
Professor of Surgery  
BMW Endowed Chair in Cancer Research  
Vice Chair of Entrepreneurship  
Department of Surgery

**Donald R. Menick, Ph.D.**  
Associate Director,  
Medical Scientist  
Training Program  
Professor of Medicine  
Professor of Biochemistry &  
Molecular Biology

## 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 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 SCTR Research Nexus 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 clinical study based on the discovery they made as a part of their Ph.D. 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.
- Students also have the opportunity to keep up their clinical skills during the graduate years by seeing patients in the CARES clinic, serving the medically indigent.
- Our MSTP also sponsors a Women's Advocacy Group that meets regularly to discuss issues relevant to women and men in the biomedical sciences.
- MSTP Students have the opportunity to take a course which teaches fundamentals of entrepreneurship.

## MSTP ADMISSION GUIDELINES

- Complete an application via AMCAS and a MUSC specific supplemental application
- Applicants who are considered competitive will be invited for an interview
- For more application information, see: [gradstudies.musc.edu/programs/dual-degree/mstp/mstp-application-information](http://gradstudies.musc.edu/programs/dual-degree/mstp/mstp-application-information)

We take a holistic approach to our selection process. GPA and MCAT scores are a large factor in obtaining an interview, at which point we are looking for the other traits essential to becoming great physicians.

These include:

- Evidence of a serious and enthusiastic commitment to the MSTP and an academic career as a physician scientist
- Evidence of a strong background in research
- Outstanding recommendations from faculty at the applicant's previous institutions and from research advisors

# MSTP Financial Considerations

Annual Stipend (\$30,500)  
plus paid health insurance and tuition



## MSTP Pathway

### MEDICINE, FIRST AND SECOND YEARS

- > Eighteen-month pre-clerkship phase of the FLEX curriculum which emphasizes an organ system-based approach with clinical integration
- > Students spend the summer before their first year conducting research
- > The USMLE Step 1 is taken by the beginning of March of the second year

### GRADUATE STUDIES, THREE TO FOUR YEARS

- > Pursue graduate studies leading to a Ph.D. degree.
- > Participate in the translational sciences clinic. This unique training experience combines medicine with science.

### MEDICINE, YEAR THREE

- > Provides the basic clinical experiences in the major medical disciplines.

### MEDICINE, YEAR FOUR

- > Required rotations and clinical electives that permit the student to further develop individual interests.
- > One Month in the SCTR Research Nexus.
- > Students apply for desirable internships at outstanding academic medical institutions. Our graduates consistently obtain their first or second choices for residency programs.

### SMOOTHING THE TRANSITIONS

- > There are quarterly meetings for the students in M1 & 2 with G1 & 2 and G3 & 4 with M3 & 4. These meetings facilitate transitioning along with opportunities to discuss issues of interest to the students.

# MSTP Departments and Programs

- During the summer prior to entering medical school, the students participate in a summer research rotation starting no later than July 1.
  - Dissertation research may be conducted in any of the following departments, interdisciplinary programs or research foci of excellence.
- |   |   |                         |
|---|---|-------------------------|
| ■ Biochemistry and Molecular Biology                            | ■ Developmental Biology                                   | ■ Neurosciences         |
| ■ Cancer Biology  | ■ Drug Discovery  | ■ Regenerative Medicine |
| ■ Cardiovascular Biology  | ■ Genomics  | ■ Signal Transduction   |
| ■ Cell Biology  | ■ Lipidomics  | ■ Stem Cell Biology     |
| ■ Cellular Injury and Repair                                    | ■ Microbiology and Immunology                             | ■ Structural Biology    |
| ■ Cell and Molecular Pharmacology and Experimental Therapeutics | ■ Molecular and Cellular Biology and Pathobiology Program |                         |
|   | ■ Pathology and Laboratory Medicine                       |                         |

## MEDICAL UNIVERSITY OF SOUTH CAROLINA

- > MUSC research facilities include the Hollings Cancer Center, a NIH designated cancer center, the Children's Research Institute, the Drug Discovery Building and Bioengineering Building. Combined these buildings house over one million square feet of research space.

Annual extramural research funds have steadily increased to its current level of over \$284 million. Student enrollment is over 3,000 in the six colleges: Medicine, Graduate Studies, Dental Medicine, Pharmacy, Nursing, and Health Professions.

## CHARLESTON, SC

- > It would be hard to imagine a place offering a more enjoyable environment in which to pursue an advanced degree. A bustling seaport city with about half a million people living in its metropolitan area, The historic district, in which the MUSC campus is located, presents a cosmopolitan, European style of living with quiet, winding streets, a varied range of historic architecture and great restaurants.

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:** Medical Scientist Training Program (MSTP)  
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