**Medical Sciences program**

**Doctor of Philosophy (Ph.D.) Degree**

**DEGREE INFORMATION**

**Program Admission Deadlines:**

**Fall:** February 1

**Minimum Total Hours:** 90

**Program Level:** Doctoral

**CIP Code:** 26.9999

**Dept Code:** MED

**Program (Major/College):** MSG MD

**Approved:** 1974

**Concentrations:**

Allergy Immunology & Infectious Disease (AII)

Anatomy (ANA)

Biochemistry and Molecular Biology (BMB) \*

Clinical and Translational Research (CTR)

Microbiology and Immunology (MMI) \*

Molecular Medicine (MLM)

Molecular Pharmacology and Physiology (MPY)

Neuroscience (NEU)

Pathology and Cell Biology ((PCB)

Pathology and Laboratory Medicine (PLM)

Pharmacology and Therapeutics (PAT)

Physiology and Biophysics (PAB)

\*Closed for admissions; not accepting applications

**CONTACT INFORMATION**

**College:** Medicine

**Department:** Medical Sciences

**Contact Information:** [www.grad.usf.edu](http://www.grad.usf.edu/)

**Website:** <http://health.usf.edu/medicine/graduatestudies/index.htm>

**PROGRAM INFORMATION**

The program is designed to provide students with a broad knowledge in the basic medical sciences, while preparing them for careers as effective and knowledgeable teachers, as well as productive and versatile researchers. To meet these objectives, students take courses in the medical sciences and related areas, participate in seminars, and receive individual research training. Departmental advisory committees counsel the entering students in planning their first year curriculum. In addition to course work and participation in seminars, first year students are expected to become familiar with ongoing research in their chosen department; when possible, they are encouraged to work on a part-time basis as research assistants in their department. Once the student selects a major professor, a formal dissertation committee is appointed. The dissertation committee assists the student in planning the research and course of study, evaluates the student’s progress, supervises the comprehensive examination, and conducts the final dissertation defense.

By the end of the second year, a student has usually completed sufficient course work and met the other research requirements to take the comprehensive qualifying examination. Successful completion of this examination leads to formal admission to candidacy for the Ph.D. degree. The final phase of the program emphasizes research and independent study and leads to a written dissertation. The Ph.D. degree is awarded upon successful completion and oral defense of the dissertation. Departments within the Morsani College of Medicine may have additional requirements that pertain to their respective training program. Contact the department for information.

**Accreditation:**

Accredited by the Commission on Colleges of the Southern Association of College and Schools.

**Major Research Areas:**

[Allergy, Immunology and Infectious Diseases](http://www.research.medicine.health.usf.edu/sp_aiid.html) [Cancer Biology](http://www.moffitt.org/Portal/Site.aspx?spid=B68789769F1D4DD69A1E85E6FDC02E78), [Cardiovascular Research](http://www.research.medicine.health.usf.edu/sp_cardio.html), Neuroscience & Neurodegenerative Diseases, Diabetes/Metabolic Disorders

**ADMISSION INFORMATION**

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

**Program Admission Requirements**

* A bachelor’s degree or equivalent from a regionally accredited university
* Minimum overall grade-point average of 3.00 out of a possible 4.00 with a minimum grade-point average of 3.00 in the sciences
* GRE- Graduate Record Examination (preferred at the 70th percentile or above) The GRE may be waived with MCAT scores and Graduate Director approval.
* Completed pre-requisites in:
  + General biology (1 year)
  + General chemistry (1 year)
  + General physics (1 year)
  + Organic chemistry (1 year)
* Three (3) letters of recommendation
* Personal Interview
* One-two page personal statement
* Research experience preferred

**Application Procedures**

Please refer to <http://health.usf.edu/medicine/graduatestudies/phd/apply_phd.htm>

**DEGREE PROGRAM REQUIREMENTS**

Total Minimum Hours: 90 hours

*(including 24 minimum directed research hours)*

**All students are required to successfully complete the following didactic courses:**

GMS 6001 Foundation in Biomedical Sciences 6

GMS 6091 Responsible Conduct in Research 1

GMS 6094 Experimental Design & Analysis 3

GMS 6002 Success Skills for the Biomedical Science Researcher 1

BCH 6935 Grant Writing & Scientific Communication 2

**Students are also required to complete at least one semester of:**

GMS 6942 Laboratory Rotations in Biomedical Sciences 1-3

Each student shall complete a minimum of 24 credit hours of didactic course work (excluding journal clubs, seminars, laboratory rotations, directed research, etc.). In addition to the required courses listed above (13 credit hours), the student shall fulfill the 24 credit hour minimum by completing coursework in their chosen concentration. The student will work with his/her advisory and dissertation committees to choose appropriate courses from the course list for their chosen concentration.

**CONCENTRATIONS:**

**ALLERGY, IMMUNOLOGY & INFECTIOUS DISEASE**

Research and education in the Ph.D. in Medical Sciences Program, concentration in Allergy, Immunology & Infectious Disease is focused on interdisciplinary approaches to the study of how the immune system functions properly to rid the body of foreign pathogens and how the immune system can go awry in autoimmunity. The process by which microbes interact with the host to cause disease is also a focus of this program.

**ANATOMY**

**BIOCHEMISTRY AND MOLECULAR BIOLOGY**  - **Closed for admissions; not accepting applications**

**CLINICAL AND TRANSLATIONAL RESEARCH**

Cardiovascular disease is the leading cause of death, in the United States Atherosclerotic coronary artery disease, valvular heart disease, diseases of the heart muscle, electrical disturbances of the heart rhythm, high blood pressure, stroke, and peripheral vascular disease all contribute to this morbidity. According to current estimates, coronary heart disease, high blood pressure, congestive heart failure and stoke affect nearly 58 million Americans. The USF Signature Interdisciplinary Program in Cardiovascular Research is a comprehensive program that brings together resources in heart care, research and education to fight against cardiovascular disease. Clinicians and researchers at USF are working to improve our knowledge of cardiovascular disease in order to develop new methods of prevention and treatment that will make a difference in the lives of patients with cardiovascular disorders.

**MEDICAL MICROBIOLOGY AND IMMUNOLOGY** - **Closed for admissions; not accepting applications**

**MOLECULAR MEDICINE**

Research and education in the Ph.D. in Medical Sciences Program, concentration in Molecular Medicine is focused on interdisciplinary approaches to the study of bacteriology, biochemistry, immunology, molecular biology and virology as it relates to human health and disease such as allergy and immune dysfunction, cancer, cardiovascular disorders, infectious diseases and inheritable defects. Training will include a unique interdisciplinary blend of didactic coursework, journal clubs, seminar series, as well as significant research experience.

**MOLECULAR PHARMACOLOGY & PHYSIOLOGY**

Research and education in the Ph.D. in Medical Sciences Program, concentration in Molecular Pharmacology and Physiology is focused on interdisciplinary approaches to the study of the nervous and cardiovascular systems and related disorders, including Alzheimer's disease and other neurodegenerative disorders, cardiovascular disease and stroke, diabetes, and neuropsychiatric disorders such as depression and drug addiction. Training will include a unique interdisciplinary blend of didactic coursework, journal clubs, seminar series, as well as significant research experience.

**NEUROSCIENCE**

Research and education in the Ph.D. in Medical Sciences Program, concentration in Neuroscience is focused on interdisciplinary approaches to the study of the nervous systems and related disorders, including Alzheimer's disease and other neurodegenerative disorders, stroke, and neuropsychiatric disorders such as depression and drug addiction. Areas of expertise include biochemistry and cellular and molecular neuroscience, neural systems and computational neuroscience, behavioral neuroscience, developmental neuroscience, neuroimmunology, and neuropsychopharmacology, among others. Students are encouraged to carry out research during their entire period of study. Training will include a unique interdisciplinary blend of didactic coursework, journal clubs, seminar series, as well as significant research experience. The interdisciplinary structure permits considerable flexibility in training; each student's training is tailored to meet individual requirements.

**PATHOLOGY & CELL BIOLOGY**

Research and education in the Ph.D. in Medical Sciences Program, concentration in Pathology & Cell Biology is focused on interdisciplinary approaches to the study of cancer, reproductive pathobiology, neurological disease & injury and related diseases, including cancer biology, angiogenesis and morphogenesis, gene discovery, neurobiology, cell biology and new educational technologies.

**PATHOLOGY AND LABORATORY MEDICINE**

**PHARMACOLOGY AND THERAPEUTICS**

**PHYSIOLOGY AND BIOPHYSICS**

**Electives**

Some of the electives include:

BCH 6746 Structural Biology 3

GMS 6115 Medical Parasitology & Mycology 3

GMS 6708 Neuroimmunology 3

**Dissertation**

**COURSES**

See [http://ugs.usf.edu/course-inventory](http://www.ugs.usf.edu/sab/sabs.cfm)