Graduate Program in Immunology and Infectious Diseases

Translating Scientific Discovery into New Therapeutic Strategies

Welcome
Matthew B. Grisham, PhD.
Professor Chair

I am pleased to welcome you to the Department of Immunology and Molecular Microbiology at Texas Tech University Health Sciences Center. Our Department is composed of a group of faculty, students, postdoctoral fellows and staff all of whom are dedicated to promoting high quality and cutting edge research, outstanding teaching and service to the university. Our innovative and productive faculty has established outstanding research programs focused on mucosal and tumor immunology, microbial pathogenesis and infectious diseases, and vaccine development. A major theme of our department is translating cutting-edge scientific discoveries into new therapeutic strategies that may be used to treat immunological and infectious diseases. We believe that an emphasis on translational research fosters an exciting educational and research environment that will serve to produce the next generation of well-trained and highly competitive biomedical scientists. Currently, our department has been very fortunate to recruit a number of outstanding graduate students and postdoctoral fellows from throughout the U.S. as well as several countries from around the world. In addition, we offer laboratory research training to a number of undergraduate students. I hope that you will join us for what we believe will be an exciting and rewarding educational adventure. I look forward to meeting with you and discussing our outstanding graduate programs.

The Doctor of Philosophy Degree Program in Immunology and Infectious Diseases

The Doctor of Philosophy (PhD) Degree is the highest degree offered by the University. Our Doctoral program is designed to graduate exceptionally well-trained professionals who possess the necessary background and experience for a career as a faculty member in an academic institution; a research scientist, group leader, or program director in a research institute or in a biotechnology or pharmaceutical company. This individual will also be competent to teach immunology and microbiology at the undergraduate and graduate college or university level and exhibit competency to lecture in advanced degree programs. An individual who completes the Doctoral program will be competent to train graduate students, postdoctoral fellows and research associates in an academic or research institution as well as in pharmaceutical and biotechnology companies. The program of study for the PhD degree is determined by the student's advisor and appointed advisory committee. After completion of the course work, the student takes the qualifying examination for admission to candidacy. A PhD dissertation, based on the results of original research, is written and defended by the student. Completion of a Master's degree is not a prerequisite for entrance into the doctoral program. The PhD normally requires approximately four to five years of study to complete.
Why Attend Graduate School?

Graduate school provides college graduates with the opportunity to pursue and fulfill both their scientific and creative interests in a field of biomedicine that has well-documented relevance to medicine and healthcare. With the transformation of medicine and the resulting emphasis on patient care, it is apparent that most, if not all of the new drug discoveries and medical therapies will be made by biomedical research professionals. Thus, the future for a young person with a PhD in Immunology and Infectious Diseases is very promising. A doctorate degree from our graduate program will greatly influence how fast and how far you will advance in your career as well as substantially increase your career options and marketability. Finally, as a graduate with a PhD degree, you can expect to begin your career with a substantially higher starting salary when you enter the workforce and with a higher lifetime earning potential than college graduates with a Bachelor’s or Master’s degree. For example, the most recent salary survey released by the Association of American Medical Colleges states that the average salaries for faculty members at state university medical schools range from approximately $85,000-90,000/year for Assistant Professors to greater than $150,000/year for Professors. It should be noted that these salaries may be significantly greater for biomedical scientists who are employed by pharmaceutical or biotechnology companies.

Research Facilities

The Department of Immunology and Molecular Microbiology occupies more than 15,000 sq. ft. of laboratory space that contains state-of-the-art molecular, cellular and immunological instrumentation. In addition to the departmental equipment, faculty and students have full access to the two newly developed Molecular Biology and Imaging Cores which are located on the same floor as the department. In addition to departmental equipment, students and faculty have full access to the new state-of-the-art Image Analysis and Molecular Biology Core Facilities. Students and faculty also have access to the Flow Cytometry lab that is operated by the Cancer Center in the Shoool of Medicine. This state-of-the-art facility has a BD LSR II flow cytometer and a FACSAria cell sorter (BD Biosciences, San Jose, CA). Texas Tech University Health Sciences Center also maintains a modern and well-equipped animal care facility that occupies 31,000 sq. ft. of space within the School of Medicine. This facility houses procedural space, conventional housing for rodents, barrier housing for immuno-deficient and germ-free rodents, and housing for non-rodent species. A new and free-standing medical library is located next to the Health Sciences Center building and is readily available to all of our students, faculty and staff.

Location

The Texas Tech University System (TTUS) is based in Lubbock and consists of Texas Tech University, Texas Tech University Health Sciences Center, and Angelo State University. With an annual operating budget of $1.4 billion, the TTUS educates approximately 43,500 undergraduate, graduate and professional students as well as employs more than 18,000 faculty and staff. Collectively, the TTUS contributes more than $2.6 billion in economic impact. The oldest and largest TTUS campus is Texas Tech University (TTU) which is located in Lubbock and home to almost 40,000 undergraduate, graduate and health sciences students. TTU occupies almost 1,900 acres making it the second largest contiguous campus in the United States. TTU is the only university in Texas to house an undergraduate and graduate university, law school, and medical school all at the same location. The Texas Tech University Health Sciences Center (TTUHSC) offers programs in Allied Health Sciences, Biomedical Sciences, Medicine, Nursing, Pharmacy and Public Health. The oldest TTUHSC campus is in Lubbock, but major campuses are also located in Abilene, Amarillo, Dallas, El Paso and the Permian Basin. The Texas Tech Red Raiders are charter members of the Big 12 Conference and compete in Division I for all varsity sports. Lubbock’s climate is semi-arid in nature (low humidity; mild temperatures) with roughly 277 days of sunshine per year. Lubbock and the surrounding community is home to more than 300,000 residents. In addition to Lubbock campus, TTU has campuses in Abilene, Fredericksburg, Highland Lakes and Junction. Angelo State University (ASU) is located in San Angelo and provides undergraduate and graduate programs in the liberal arts, sciences, and professional disciplines to more than 7,000 students in San Angelo.

Financial Aid and Other Benefits

Visit our website at http://www.ttuhsc.edu/SOM/Immunology/.
Student assistantships (currently $25,000/yr) are offered to all doctoral students in good academic standing. There is a financial aid office that assists students with financial aid as well as additional needs. Health insurance is available to students at a reduced cost. Other scholarships and awards are available to eligible students. All graduate students are automatically a part of the Graduate Student Association (GSA) that is run by graduate students and overseen by the Graduate School. Graduate students that meet GSA criteria can also apply for travel funds.

Department of Immunology and Molecular Microbiology
Faculty and Research Interests

**Immunology and Cancer**

**Bright**, Robert K., Ph.D., Associate Professor

**Siddiqui**, Afzal A., Ph.D., Professor
Research Interests: *Vaccine discovery, development and testing for human parasite Schistosoma mansoni*

**Grisham**, Matthew B., PhD., Professor and Chair
Research Interests: *Mucosal immunology, chronic intestinal inflammation, leukocyte trafficking, immune regulation, cell-based therapy.*

**Molecular Bacteriology and Infectious Diseases**

**Rolfe**, Rial D., Ph.D., Professor and Associate VP for Academic Affairs.
Research Interests: *Pathogenicity of Clostridium difficile; intestinal microbial ecology.*

**Fralick**, Joe A., Ph.D., Professor
Research Interests: *Molecular biology of Escherichia coli.*

**Hamood**, Abdul N., Ph.D., Professor
Research Interests: *Molecular biology of pathogenic bacteria.*

**Colmer-Hamood**, Jane A., Ph.D., MT(ASCP)SM, Research Associate Professor
Research Interests: *Molecular pathogenesis of Vibrio cholerae and Pseudomonas aeruginosa.*

**Parasitology**

**Siddiqui**, Afzal A., Ph.D., Professor
Research Interests: *Vaccine discovery, development and testing for human parasite Schistosoma mansoni; Strongyloides stercoralis hyperinfection.*
Applying to Immunology and Infectious Diseases

Students interested in a PhD Degree in Immunology and Infectious Diseases should apply to the Graduate School of Biomedical Sciences at http://www.ttuhsc.edu/gsbs/prospective/. Faculty begin reviewing applications as early as February for Fall semester admission. Those seeking admission for the Fall should apply no later than May 1. Applications must be complete and accompanied by two letters of recommendation. An email message confirming your interest in the department’s graduate program should also be sent to:

Ms. Lisa Moran (l.moran@ttuhsc.edu).

Students should have a BA or BS degree or equivalent from an accredited college or university and a strong background in biological sciences. Two years of chemistry, introduction to physics and math are also preferred.

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