

# BIOMEDICAL SCIENCES GRADUATE PROGRAM



## GENERAL INFORMATION

The [Texas A&M University School of Veterinary Medicine & Biomedical Sciences \(VMBS\)](http://vetmed.tamu.edu/graduate-programs) offers **Doctor of Philosophy (Ph.D.) & Master of Science (MS) degree programs in Biomedical Sciences (BIMS)**.

### Doctor of Philosophy (Ph.D.) & Master of Science (MS) Thesis

**Option:** These degree programs are designed for students seeking advanced study in biomedical sciences to develop skills related to critical inquiry, independent research, and teaching. The Ph.D. program is designed for students who demonstrate the potential to perform original research under guidance and have the goal of pursuing careers in research and teaching. Students must select either ***Biomedical Genomics & Bioinformatics; Diagnostics & Therapeutics; Infection, Immunity & Epidemiology***, or ***Physiology & Developmental Biology*** for their curricular training track.

There are also interdisciplinary programs with close ties to the VMBS, such as ***Genetics, Neuroscience***, and ***Toxicology***, through which students may pursue a master's or doctoral degree.

**Master of Science (MS) Non-Thesis Option:** This is a pre-professional degree program designed for students seeking advanced study in biomedical sciences and related subject areas. Students commonly aim to pursue a professional program of study in one of the various fields of medicine or gain advanced learning before moving forward in a field of biomedical-related research.

Please visit [vetmed.tamu.edu/graduate-programs](http://vetmed.tamu.edu/graduate-programs) for more information about these graduate programs, including required coursework, or contact an academic advisor at [resgrad@cvm.tamu.edu](mailto:resgrad@cvm.tamu.edu).

## ADMISSIONS INFORMATION

To apply for admission to the BIMS graduate degree programs, prospective students must have a minimum of a baccalaureate degree (or its equivalent) awarded from an accredited institution of higher education before beginning the first semester of coursework for the degree program. The typical competitive candidate will have a minimum 3.0 cumulative GPA in all previous degrees and demonstrate success in prior related coursework and research experience.

Scholarships and fellowships are available for competitive candidates (Ph.D. & MS THO only). More information about the admissions process, scholarships, and fellowships can be found here:

[vetmed.tamu.edu/graduate-programs](http://vetmed.tamu.edu/graduate-programs).





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## CURRICULAR TRAINING TRACKS (PH.D. & MS THO)

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**Biomedical Genomics & Bioinformatics:** Faculty are engaged in understanding the structure and function of genomes and the evolutionary relationships between genes and proteins. To understand these relationships, genomics investigators utilize computer science, mathematics, statistics, and engineering principles to interpret genomic data. Research areas include comparative, functional, conservation, population, and computational genomics, phylogenomics, genome evolution, immunogenomics, and epigenomics.

**Diagnostics & Therapeutics:** Faculty are engaged in research that involves the study of spontaneous disease in client-owned animals, research that can be directly applied to patients with spontaneous disease, the development of novel diagnostic tests, and the development of new therapeutic strategies. Research areas include clinical trials in neurology, oncology, cardiology, orthopedics/stem cells, internal medicine, and diagnostics and therapeutics for gastrointestinal, orthopedic/regenerative medicine, and reproductive disorders.

**Infection, Immunity & Epidemiology:** Faculty actively engage in research that integrates a multidisciplinary approach to epidemiology related to infection and immunity. This involves studying the frequency, distribution, and control of diseases in addition to mechanistic studies of microorganisms and disease, host-pathogen interactions, the immune system, and immunological disorders. Areas of research include infectious and zoonotic diseases; vaccines; adjuvants and diagnostics development; and comparative, developmental, and clinical aspects of immunology, bacteriology, virology, parasitology, and pathology.

**Physiology & Developmental Biology:** Faculty in this group study the functions of body systems and how specific genes govern the differentiation of cells, tissues, and organs with unique structures and functions. Both disciplines require a firm foundation in mathematics, chemistry, physics, biophysics, and molecular and cellular biology. Research areas include toxicology, neuroscience, reproductive biology, cardiovascular sciences, regenerative medicine, pharmacology, developmental biology, epigenetics, and cell biology.

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## PROFESSIONAL DEVELOPMENT OPPORTUNITIES

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The VMBS offers a variety of professional development opportunities for its graduate students. These include workshops such as scientific writing, grant writing, public speaking, teamwork, communication, and conflict management. Additionally, the school offers several experiential training programs that allow students to gain specific skills through hands-on training in well-known laboratories and high-caliber training courses. The VMBS also exposes its trainees to various career paths through seminars and career panels with former graduates of the VMBS.

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## PLEASE CONTACT US FOR MORE INFORMATION.

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