

BIOMEDICAL SCIENCES

Professional Program of Study

For professional curriculum in veterinary medicine leading to the degree doctor of veterinary medicine, see Veterinary Medicine

Biomedical Sciences

The Department of Biomedical Sciences provides a hands on educational experience in human and animal health sciences. Our courses include cadaver-based human and veterinary anatomy, histology, physiology, pharmacology and cell biology, emphasizing a One Health approach that recognizes the interconnection between human and animal health.

A solid foundation in anatomy, physiology, and pharmacology is necessary to understand both the mechanisms of disease processes in humans and animals as well as their treatment. Specimen-based study of anatomy and physiology prepares students with a background in the structural and functional activities of cells, tissues, organs, and body systems relevant to human and veterinary medicine.

An understanding of drug action is essential for rational drug therapy. Our general pharmacology courses provide students with a background in basic pharmacology to include pharmacodynamics, toxicology, and the clinical application of drugs. Special emphasis is placed on chemical agents and therapeutic practices specific to both human and veterinary medicine.

Graduate Programs

The department offers Master of Science and Doctor of Philosophy degrees with a major in Biomedical Sciences and specializations in Anatomy, Physiology, Pharmacology, and Cell Biology. Up to 10 credits of dual-listed veterinary courses may be applied for major graduate credit.

The objective of the department is to prepare graduate students for successful careers in biomedical research and professional service. The department is part of interdepartmental programs in neuroscience, toxicology, and molecular, cellular, and developmental biology. The combined Ph.D./DVM program is an option offered by the department.

Departmental research facilities allow for training in experimental anatomy, pharmacology, and physiology. Graduate studies are supervised by faculty members recognized in their areas of expertise. Current areas of research include: Alzheimer's disease, aquatic animal health, calcium and mineral homeostasis, diabetes mellitus, glia-neuron signaling, neurophysiology of pain, neurotoxicology, physiology and pharmacology of nematode ion-channels, Parkinson's disease, pharmacology of schistosomiasis, pharmacology of salmonellosis, physiology and pharmacology of thalamic neurons, physiology of the retina, Spinal Muscular Atrophy, and study of neural stem cells.