

## FIELD OF SPECIALIZATION

# Experimental Medicine

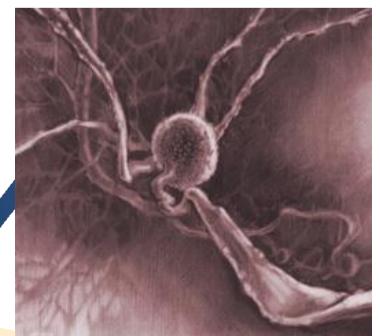
Researchers in this field employ interdisciplinary methods to explore the processes responsible for both the normal and diseased state. This includes the mechanisms underlying disorders of the cardiovascular, gastrointestinal, nervous, respiratory, and urogenital systems, as well as cancer. Molecular, cellular- and/or systems-based approaches are used to investigate cellular or animal models of disease as well as patient populations.

## CAREERS

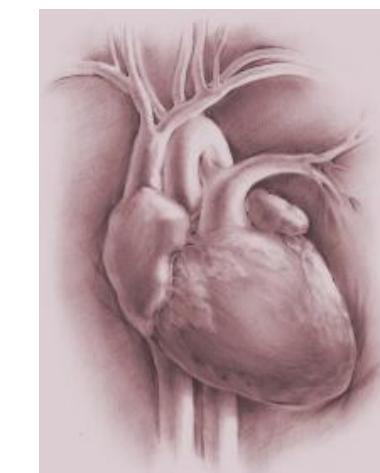
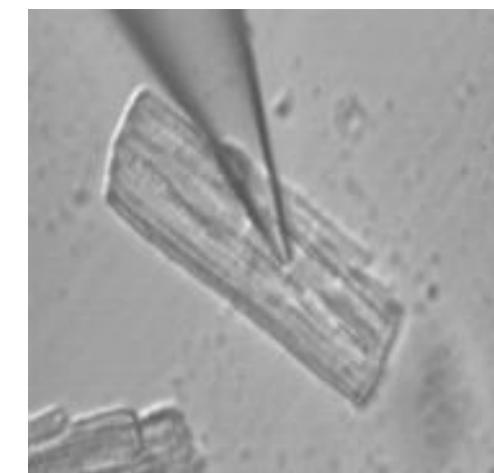
Career opportunities range from research technician, scientist, professor, administrator in academia, private sector (biotechnology or pharmaceutical industry, consulting firms), or government sector (Health Canada, Ministry of the Environment and Agriculture).

## COURSES

The Biomedical and Molecular Sciences MSc requires, at minimum, the completion of 12 credit units at the graduate level. This includes the required courses BMED 860\* (3 credit units, Fundamentals of Academic Research and Research Proposal) and BMED 897\*(3 credit units, Biomedical Sciences Seminar Program). In addition, MSc students in this field must complete 6 credit units from any of the graduate courses offered by the Department in consultation with their supervisor. For PhD students, there are typically no course requirements.



- FACULTY**
- M. A. Adams:** Cardiovascular, kidney disease, and sexual dysfunction  
**J. Allingham:** Structure and function of proteins  
**R. D. Andrew:** Electrophysiology of ischemia and head trauma  
**A. M. Baranchuk:** Sleep apnea and cardiac dysfunction  
**B. M. Bennett:** Activation of the cyclic GMP-guanylyl cyclase system  
**M. J. Beyak:** Function of the primary afferent nerves  
Innervating the GI tract and liver  
**M. G. Blennerhassett:** Intestinal inflammation  
**G. Blohm:** Computational neuroscience  
**A. Craig:** Signal transduction in hematopoietic cells  
**B. A. Croy:** Immune cells and pregnancy  
**E. C. Dumont:** Neurobiology of pain and addiction  
**A. Ellis:** Allergic diseases  
**P. A. Greer:** Proto-oncogenes in cancer  
**A. V. Ferguson:** Autonomic control of energy balance  
**J. T. Fisher:** Airway innervation and sensory feedback from the lung  
**M. F. Fitzpatrick:** Sleep and respiration  
**J. R. Flanagan:** Visual motor control of grasping  
**L. Flynn:** Tissue engineering and adipose-derived stem cells  
**A. B. Froese:** Allergies, acid reflux, and inflammation  
**C. D. Funk:** Cardiovascular inflammation  
**I. Gilron:** Clinical pain management  
**C. H. Graham:** Trophoblast and decidual cell interactions; biology of cancer  
**A. Y. Jin:** Stroke, drug design, and neurology  
**C. J. Justinich:** Pathophysiology and immunology of esophagitis  
**M. D. Kawaja:** Neuroplasticity in the adult mammalian brain



- A. E. G. Lomax:** Neuroimmune interactions during inflammation  
**M. D. Lougheed:** Symptom perception in asthma  
**R. J. MacLeod:** Non-canonical Wnt signaling in the intestine  
**N. S. Magoski:** Ion channel modulation and neuronal excitability  
**A. S. Mak:** Cell migration and cytoskeleton structure  
**D. H. Maurice:** Phosphodiesterases and vascular function  
**C. R. Mueller:** Role of BRCA1 in breast cancer  
**D. P. Munoz:** Using eye movements to probe brain function and dysfunction  
**C. J. Nicol:** Peroxisome proliferator-activated receptors and cancer  
**D. O'Donnell:** Pathophysiology of respiratory diseases  
**S. C. Pang:** Cellular pathophysiology in hypertension  
**M. Pare:** Neural basis of cognitive and active vision  
**C. M. Parker:** Cardiopulmonary interactions and mechanisms of dyspnea  
**W. G. Paterson:** Physiology and pathophysiology of the esophagus  
**E. O. Petrof:** Probiotics, microbial-epithelial cell interactions in the gut, and the effects of intestinal bacteria on inflammation  
**D. P. Redfearn:** Novel algorithm development and electrogram analysis  
**F. Rivest:** Mathematical foundation of artificial and natural learning  
**P. K. Rose:** Input/output properties of spinal neurons  
**S. H. Scott:** Brain regions involved in motor control and learning  
**C. Tayade:** Immune mechanisms in endometriosis and immunology of pregnancy  
**M. E. Tschakovsky:** Cardio-respiratory regulation in exercise  
**D. A. Van Vugt:** Neuroendocrine regulation of the menstrual cycle and appetite  
**S. J. Vanner:** Inflammation and autonomic control of the GI tract  
**C. A. Ward:** Myocardial electrophysiology and reactive oxygen  
**S. Zhang:** Molecular mechanisms of ion channel function in health and heart disease

