

## FIELD OF SPECIALIZATION

# Therapeutics, Drug Development and Human Toxicology

The focus of this field is on the effects, both beneficial and deleterious, of chemicals including drugs and environmental contaminants, on human health. Studies are conducted at levels ranging from specific target molecules to intact organisms and can be directed towards specific diseases, organs, organ systems, or disease processes.

## CAREERS

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

## COURSES

The Biomedical and Molecular Sciences MSc requires, at minimum, the completion of 12 credit units at the graduate level. BMED 860\* (3 credit units, Fundamentals of Academic Research and Research Proposal) and BMED 897\*(3 credit units, Biomedical Sciences Seminar Program). Additional required credit units for the Therapeutics, Drug Development, and Human Toxicology Field of Specialization are: MSc Students in this field must complete an additional 3 credit units from the Methods Modules. In addition, M.Sc. students must complete 3 credit units from one of PHAR 810\*, PHAR 811\*, PHAR 815\*, PHAR 853\*, or PHAR 854\*; the specific course will be determined in consultation with the supervisor. In cases where students do not have the necessary background in core pharmacology, PHAR 840\* and PHAR 850\* may also be required.

## FACULTY

**M. A. Adams:** Mechanisms of antihypertensive drug action and neural and vascular mechanisms of male and female sexual dysfunction

**B. M. Bennett:** Pharmacology of the nitric oxide/guanylyl cyclase/cGMP signal transduction system

**J. F. Brien:** Nitric oxide, carbon monoxide and vascular function

**S. P.C. Cole:** Anti-cancer drug resistance

**A. Ellis:** Allergic diseases

**I. Gilron:** Clinical management of pain

**T. E. Massey:** Biochemical and molecular toxicology of the lung

**D. H. Maurice:** Phosphodiesterases and vascular function

**K. Nakatsu:** Pharmacology of carbon monoxide and heme oxygenases

**C. J. Nicol:** Peroxisome proliferator-activated receptor (PPAR)-mediated influence on breast and colon cancer

**T. R.S. Ozolinš:** Developmental toxicology: ventricular septation defects

**E. O. Petrof:** Probiotics, microbial-epithelial cell interactions in the gut, and the effects of intestinal bacteria on inflammation

**J. N. Reynolds:** Neurotoxicology of alcohol

**M. Szewczuk:** Role of Toll-like receptors in inflammation and infection

**L. M. Winn:** Developmental toxicology

