The collaborative specialization is the focal point for graduate teaching and research in toxicology. Students wishing to undertake graduate studies at the masters or doctoral level with emphasis on toxicology will be admitted by a participating department and will register in both the participating program and in the collaborative specialization. The participating programs include Animal Biosciences, Biomedical Sciences, Chemistry, Food Safety and Quality Assurance, Human Health and Nutritional Sciences, Integrative Biology, Molecular and Cellular Biology, Pathobiology, Plant Agriculture and Environmental Sciences.

**Administrative Staff**

**Director and Graduate Program Coordinator**
Dr. Richard Manderville (SCIE 3243, Ext. 53963)
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**Graduate Program Assistant**
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**Graduate Faculty**

*This list may include Regular Graduate Faculty, Associated Graduate Faculty and/or Graduate Faculty from other universities.*

Wojciech Gabryelski  
B.Sc., M.Sc. Technical Gdansk (Poland), PhD Alberta - Associate Professor  
Graduate Faculty

Beverley Hale  
B.Sc., M.Sc. Toronto, PhD Guelph - Professor and Associate Vice President Research (Agri-Food Partnership)  
Graduate Faculty

Ronald Johnson  
B.Sc., DVM Guelph, PhD Michigan State, Dip. ACVCP - Professor  
Graduate Faculty

Bettina E. Kalisch  
B.Sc., M.Sc., PhD Queen's - Associate Professor  
Graduate Faculty

Niel A. Karrow  
B.Sc., Guelph, M.Sc., PhD Waterloo - Professor  
Graduate Faculty

Jibran Khokhar  
B.Sc. Queen’s, PhD Toronto - Assistant Professor  
Graduate Faculty

Gordon M. Kirby  
DVM Guelph, M.Sc. Surrey, PhD Guelph - Professor  
Graduate Faculty

Francesco Leri  
BA, MA, PhD McGill - Professor  
Graduate Faculty

Richard A. Manderville  
B.Sc., PhD Queen's - Professor  
Graduate Faculty

Mario A. Monteiro  
B.Sc., PhD York - Professor  
Graduate Faculty

Derek O'Flaherty  
B.Sc., PhD Concordia - Assistant Professor  
Graduate Faculty

Cynthia D. Scott-Dupree  
B.Sc. Brandon, MPM, PhD Simon Fraser - Professor  
Graduate Faculty

Paul K. Sibley  
B.Sc., M.Sc. Guelph, PhD Waterloo - Professor  
Graduate Faculty

E. James Squires  
B.Sc., M.Sc., PhD Memorial - Professor  
Graduate Faculty

Glen J. Van Der Kraak  
B.Sc., M.Sc. Manitoba, PhD British Columbia - Professor  
Graduate Faculty

**Masters Collaborative Specialization**

**Admission Requirements**
Masters students in the collaborative specialization in toxicology must meet the masters admission requirements of the participating program in which they are enrolled.

**Program Requirements**
Masters students in the collaborative specialization in toxicology must complete a minimum of 1.50 graduate credits, which must include the toxicology courses TOX*6000 Advanced Principles of Toxicology and TOX*6200 Advanced Topics in Toxicology and courses required by the participating program in which they are enrolled. It is expected that students’ research (MRP or Thesis) or at least 30% of the courses in a course-based program be in the area of toxicology.

**Doctoral Collaborative Specialization**

**Admission Requirements**
Doctoral students in the collaborative specialization in toxicology must meet the doctoral admission requirements of the participating program in which they are enrolled.

**Program Requirements**
Doctoral students in the collaborative specialization in toxicology must meet all the academic requirements specified by the participating program in which they are enrolled. They must also complete the courses TOX*6000 Advanced Principles of Toxicology and TOX*6200 Advanced Topics in Toxicology if they, or equivalent courses, were not taken as part of a masters program. It is expected that the students’ doctoral research be in the area of toxicology.

**Courses**

**TOX*6000 Advanced Principles of Toxicology**  
Summer Only  [0.50]  
An intensive course in the principles of modern aspects of toxicology, taught in a lecture/case study format.  
Department(s): Department of Chemistry  
Location(s): Guelph
TOX*6200 Advanced Topics in Toxicology Winter Only [0.50]
Advanced topics in toxicology will include oral presentations by students, faculty members, and guest lecturers. The emphasis will be on advanced concepts and techniques in toxicology research with particular relevance to mechanistic, molecular and interpretive toxicology. Offered in conjunction with TOX*4200. Extra work is required of graduate students.
Restriction(s): Credit may be obtained for only one of TOX*6200 or TOX*4200
Department(s): Department of Chemistry
Location(s): Guelph

TOX*6590 Biochemical Toxicology Fall Only [0.50]
The molecular mechanisms of action of carcinogens and other toxic compounds. Enzymes of biotransformation, including a detailed study of cytochrome P-450. Interactions of reactive species with DNA and other macromolecules. Offered in conjunction with TOX*4590. Extra work is required of graduate students.
Restriction(s): Credit may be obtained for only one of TOX*4590 and TOX*6590
Department(s): Department of Chemistry
Location(s): Guelph

Other Courses

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