

## Clinical Studies: MSc, DVSc

The Department of Clinical Studies strives to improve individual animal health by fundamental and clinical research in a variety of species: companion animals (dogs and cats, as well as birds and exotic species), performance animals (primarily horses) and food-producing animals. Our clinical expertise encompasses Anaesthesiology, Cardiology, Emergency and Critical Care, Internal Medicine, Neurology, Nutrition, Oncology, Ophthalmology, Radiology, and Surgery.

[ovc.uoguelph.ca/clinical-studies/](http://ovc.uoguelph.ca/clinical-studies/)

### Program

The Master of Science (MSc) program requires a minimum of 3 graduate courses and the preparation and defense of a research-based thesis, to be completed in approximately 6 semesters.

The Doctor Veterinary Science (DVSc) Program involves applied clinical practice, graduate courses and research in a specific veterinary clinical discipline. Applicants that hold a DVM (or equivalent degree) are advised to consult the department website for more info about this program.



DVSc student in Medical Oncology, Chris Pinard, performs a physical exam prior to chemotherapy treatment on his patient that has been diagnosed with Hemangiosarcoma at the Mona Campbell Centre for Animal Cancer, Ontario Veterinary College, University of Guelph.

### COLLABORATIVE SPECIALIZATIONS: Admission Requirements

- *One Health*
- *Neuroscience*
- *Regenerative Medicine*

### Funding

The MSc is funded for 2 years, by the advisor or through scholarships and awards that are available on a competitive basis.

### Application Deadline:

Ongoing for the MSc Program

**Entry:** Fall for the DVSc Program

A Faculty Advisor should be identified before application to the MSc program. Applicants to the MSc program should have either an honours Bachelor's degree in a relevant field with at least a B- (70% Ontario equivalent) over the last 2 years of full-time study, or a DVM (or equivalent) degree with at least an overall B- (70% Ontario equivalent) in the DVM program. A letter of interest, CV and two academic letters of reference are required within the application.

### Faculty Expertise

- Anaesthesiology
- Cardiology
- Emergency and Critical Care
- Large and Small Animal Medicine
- Large and Small Animal Surgery
- Neurology
- Nutrition
- Oncology
- Ophthalmology
- Radiology

### ARE YOU INTERESTED IN:

- Research focused on improving animal health
- Comparative and translational clinical research

### CAREER OPPORTUNITIES:

- Veterinary Medicine
- Human Medicine
- Biomedical Research
- Government
- Animal health industry

### CONTACT INFORMATION

#### Graduate Program Coordinators:

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#### Graduate Program Assistant:

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## Faculty and Laboratories

At the present time, there are approximately 39 faculty, 12 staff and 50 graduate students. The graduate students work in a state-of-the-art facility consisting of the Department of Clinical Studies, the OVC Health Sciences Centre and the Comparative Clinical Research Facility. An additional resource that the Department of Clinical Studies has access to is the Veterinary Clinical Trials Program. Individual faculty laboratories include the Hemostasis Lab, the Body Composition Lab, the Respiratory Lab, the Comparative Bone and Joint Disease Lab, the Comparative Cancer Laboratory, and the Minimally Invasive Surgical Task trainer laboratory. Shared laboratories are fully equipped for proteomics and genomics research, including polymerase chain reaction, gel electrophoresis, Western blotting, enzyme-linked immunosorbent assay, and immunohistochemistry. Computational facilities are available for data analysis. Advanced clinical equipment includes computerized tomography, magnetic resonance imaging, scintigraphy, dual energy X-ray absorptiometry, pulmonary function test, dynamic and static airway endoscopy, high speed treadmill, specialized surgical suites, etc. Also the Comparative Clinical Research Facility provides 15,401 sq feet of laboratory space equipped for advanced diagnostic and surgical work. The Community Healthcare Partnership Program (CHPP) in the Department of Clinical Studies focuses on the concept of One Health, with the understanding that often welfare interactions occur between humans and animals. The CHPP focuses on the development of veterinary skills with people with limited access to animal care support, to improve animal health in urban and Indigenous communities.

## Meet some of our graduate faculty:



**Xiu Ting Yiew**

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My clinical and research interests include fluid stewardship, point-of-care ultrasonography, minimally invasive bedside monitoring technologies, acute kidney injury and renal replacement therapy. Fluid therapy has always been one of my main research interests because it is an imprecise clinical practice based on broad assumptions, species-to-species extrapolations, weak experimental evidence, and individual preferences. As a routine treatment of hospitalized patients, fluid therapy has the potential to cause significant harm, particularly in cats. I am part of a research group that examines the use of volume kinetics, i.e. pharmacokinetics of intravenous fluids, in cats and other species. My other research activities explore the utility of various point-of-care diagnostic modalities, such as non-invasive bladder volume estimation methods, non-invasive continuous hemoglobin monitoring devices, multi-frequency bioelectrical impedance spectroscopy, minimally invasive point-of-care hemoglobin analyzer, etc.

### How my research improves life

A greater understanding of the volume kinetics (pharmacokinetics) of intravenous fluid and body water physiology in animals under various physiological states would support safer, more effective fluid therapy practices with reduced risks of fluid overload. Successful validation of non-invasive or minimally invasive bedside technologies would lead to impactful clinical applications through the provision of rapid, real-time information that maximizes animal welfare.



**Allison Collier**

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My research centers around the gastrointestinal microbiota (or 'microflora') in pets with conditions such as inflammatory bowel disease (IBD), as well as investigating adjunctive treatments such as fecal microbiota transplantation (FMT). FMT offers a promising novel treatment option for pets with diseases such as IBD to better aid in controlling their clinical signs and quality of life, as unfortunately currently many pets with IBD have ongoing clinical signs despite conventional treatment options.

### How my research improves life

Development of adjunctive treatments for conditions such as inflammatory bowel disease and other gastrointestinal conditions (through methods such as FMT) will hopefully allow patients to have a better response rate and quality of life.