Pathobiology: GDip., MSc, PhD, DVSc

Research in the Department of Pathobiology addresses such diverse areas as pathogens of animals and how they interact with their hosts, emerging and zoonotic pathogens, antimicrobial resistance, immunologic and genetic bases of resistance to infectious disease, development and progression of cancer, and immune-mediated and inflammatory diseases. We work on diseases of farm animals, laboratory animals, fish, wildlife, zoo and companion animals, from the molecular level to that of the population.

http://ovc.uoguelph.ca/pathobiology

Program

Research-based MSc (2 years) or PhD (4 years) degrees are offered to non-veterinarians and veterinarians in all fields of study in the department. Veterinary specialty training is offered through DVSc (3 years) and Graduate Diploma (1 year) programs for applicants with a DVM degree.

Research Fields

- Comparative Pathology
- Immunology
- Veterinary Infectious Diseases
- Veterinary Pathology

Admission Requirements

- Applicants should have at least a ‘B’ average in a relevant undergraduate degree. A DVM degree is not required for MSc or PhD programs.
- Prior to applying, students should identify an advisor who will provide funding for a minimum of 2 years (MSc) or 3 years (PhD, DVSc).
- Numerous scholarships and awards are available on a competitive basis.

Faculty and Facilities

At the present time, there are 22 faculty, 16 staff members, 90 graduate students and 29 postdocs/research associates. Graduate Students will work in a new building that is well-equipped with shared laboratories and state-of-the-art equipment for quantitative RT-PCR, liquid-handling robotics instrumentation for preparing large numbers of samples, flow cytometry, fluorescent and optical microscopy, 2D protein gel electrophoresis, multiplex ELISA, laser capture microdissection, and tissue microarray. As well, our investigators have close interactions with other departments and other universities, and with the Animal Health Laboratory, Center for Public Health and Zoonoses, and the Public Health Agency of Canada.

ARE YOU INTERESTED IN:

- Infectious diseases of animals
- Immunology
- Advancing our understanding of how cancer develops and evolves
- Veterinary pathology diagnostics and research
- Zoo medicine, wildlife, and one health

CAREER OPPORTUNITIES:

- Veterinary and biomedical research
- Specialty veterinary practice
- Diagnostic activities in private and public sector laboratories

CONTACT INFORMATION

Graduate Coordinator:
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Graduate Program Assistant:
Donna Kangas
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Departmental Graduate Faculty with Research Areas

**Shayan Sharif (Chair):**
Immunology: Immunology and genetics of host disease resistance

**Patrick Boerlin (Graduate Coordinator):**
Bacteriology: Molecular epidemiology of infectious diseases and antimicrobial resistance

**John Barta:**
Parasitology: Protozoan parasites of the phylum Apicomplexa

**Janet Beeler-Marfisi:**
Clinical Pathology: Equine pulmonary disease, metabolic diseases of small and large animals

**Dorothee Bienzle:**
Clinical Pathology: Retroviral pathogenesis; Mechanisms of airway inflammation

**Byram Bridle:**
Viral immunology, cancer immunotherapy, oncolytic virotherapy, regulation of cytokines by type I interferon

**Jeff Caswell:**
Anatomic Pathology: Respiratory & cardiovascular pathology, Bacterial pneumonia of cattle and pugs, Innate immunity in the lung

**Robert A. Foster:**
Anatomic Pathology: Reproductive pathology, surgical pathology

**Claire Jardine:**
Comparative Pathology: Wildlife and ecosystem health; ecology of diseases in wild animal populations; Rodent and vector-borne zoonotic diseases

**Stefan M. Keller:**
Molecular techniques, diagnostic and therapeutic aspects of the lymphocyte antigen receptor

**Brandon Lillie:**
Anatomic Pathology: Lectins and innate immunity; mechanism of resistance to infectious diseases, genetics of disease

**John S. Lumsden:**
Comparative Pathology: Aquatic animal health, innate immunity of teleosts and corals

**Janet MacInnes:**
Bacteriology: Molecular analysis of virulence determinants of bacteria; bacterial interactions with tonsil; vaccine development

**Bonnie Mallard:**
Immunology: Immunogenetics of antibody and cellular mechanisms of host defense, livestock breeding for disease resistance, genetic regulation of the immune system

**Éva Nagy:**
Virology: Molecular virology of avian viruses, recombinant viral vaccines, viral epidemiology, diagnostic tests

**Andrew S. Peregrine:**
Parasitology: Epidemiology, impact and control of parasitic infections

**Brandon L. Plattner:**
Anatomic pathology: Innate immunopathology of Johne’s disease

**Leonardo Susta:**
Avian virology, poultry diseases and pathology, pathogenesis of high-consequence poultry viral diseases

**Scott Weese:**
Bacteriology: Emerging infectious diseases, infection control, MRSA, Clostridium difficile, antimicrobial resistance, mmi microbiome

**R. Darren Wood:**
Clinical Pathology; Hematologic diseases, canine hematology and hemostasis

**Geoffrey A. Wood:**
Anatomic Pathology: Pathology of neoplasia; Canine osteosarcoma; Prostate cancer; Mouse models of disease

**Sarah Wootton:**
Virology: Molecular virology; Pathogenesis of oncogenic retroviruses; Recombinant viral vaccines; Lung cancer; Gene therapy

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