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.

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 (for MSc applicants) or 'B+' average (for PhD applicants). A DVM degree is not required for MSc or PhD programs.
- Prior to applying, students should identify a faculty member who is willing to serve as advisor and who will provide funding for the research and a stipend for the student.
- Numerous scholarships and awards are available on a competitive basis.

Application Deadline:
Ongoing

Entry: Fall, Winter, Spring

Faculty and Facilities

Pathobiology includes 19 faculty, 16 staff members, 65 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, next generation sequencing, 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
- Cancer development and treatment
- Veterinary pathology diagnostics and research
- Zoo medicine and wildlife
- One Health

CAREER OPPORTUNITIES:

- Biomedical research
- Animal health research and development
- Diagnostic activities in private and public sector laboratories

CONTACT INFORMATION

Graduate Program Coordinator:
Dr. Jeff Caswell
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Graduate Program Assistant:
Jessie Beer
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Departmental Graduate Faculty with Research Areas

John Barta:
Parasitology: Protozoan parasites of the phylum Apicomplexa

Janet Beeler-Marfisi:
Clinical Pathology; Mechanisms of equine lower airway disease; Canine leukemia

Dorothee Bienzle:
Clinical Pathology; Mechanisms of Airway Inflammation; Diseases of the Hematopoietic System

Patrick Boerlin:
Bacteriology: Molecular epidemiology of infectious diseases and antimicrobial resistance

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, Innate immunity in the lung

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

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

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

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

Nicole Ricker:
Bacteriology: Comparative genomics and metagenomics; Antimicrobial resistance; Plasmid dynamics; Role of microbiome in disease resilience/development

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

Shayan Sharif:
Immunology: Immunology and genetics of host disease resistance

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, mnicrobiome

R. Darren Wood:
Clinical Pathology; Canine von Willebrand disease, Canine immune mediated hemolytic anemia, Storage lesion in transfusion products, MicroRNA in canine lymphoma, Applied hemostasis method validation

Geoffrey A. Wood:
Anatomic Pathology: Pathology of neoplasia; Cross-species cancer genomics; microRNA in cancer; Mouse models of cancer

Sarah Wootton:
Virology: Molecular virology; AAV gene therapy; Oncolytic viral therapy; Recombinant viral vaccines

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