BOLOGICAL SCIENCES GRADUATE





habitat selection.

Our award-winning, internationally recognized faculty study biological processes ranging from microbial antibiotic resistance, to polar bear

DIVERSITY

WE OFFER MSC and **PHD PROGRAMS** that investigate fundamental biological problems from molecular pathways to global ecological scale, and across geological time.

Our graduate students study existing and ancient life forms including viruses, bacteria, fungi, nematodes, plants, insects and other invertebrates, fish, birds, and mammals, as well as extinct plants, fish, reptiles and dinosaurs.

We offer the opportunity to use unparalleled interdisciplinary approaches that encompass proteomics, genomics, structural biology, chemical biology, next generation sequencing, molecular biology, genetics, biochemistry, mathematical modelling, GIS analysis, quantitative and population genetics, behavioural, population, community, evolutionary, and molecular ecology, state-of-the-art wildlife monitoring, habitat modelling, mathematical/simulation modelling, and field camps.

WORLD-CLASS FACILITIES

THE DEPARTMENT OF BIOLOGICAL SCIENCES is home to world-class facilities that support unparalleled multidisciplinary research approaches. In addition to nine superb biological collections, our facilities include the following:

Bamfield Marine Sciences Centre

Advanced Microscopy Facility

Aquatics Facility

GIS Facilities

Biogeochemical Analytical Laboratory

Drosophila Service Unit

Greenhouses

Low-Level Mercury Analytical Laboratory

Microarray and Proteomics Facility

Molecular Biology Service Unit

EXCEPTIONAL PROFESSIONAL DEVELOPMENT

MANY OPPORTUNITIES EXIST FOR PROFESSIONAL DEVELOPMENT INCLUDING:

Conference participation, attendance, and organization

Outreach to community organizations, government agencies, stakeholder groups, service agencies, local and national media, grade school children, and undergraduates

Graduate teaching and learning certification

The chance to be involved in teaching undergraduate students at all levels of their program, including senior research projects

A variety of workshops and courses sponsored by campus organizations





A STRONG COHORT OF EVOLUTIONARY BIOLOGISTS AND ECOLOGISTS

in the Department of Biological Sciences study living and ancient microbes, plants, and animals, and the ways in which they adapt, evolve, and interact with each other and the environment to establish ecosystems.

The manner in which anthropogenic influences and climate change affect ecosystems is a major area of investigation.

RESEARCH AREAS:

Arctic and Northern Ecosystems

Biogeochemistry and Ecology of Wetlands, Streams, and Lakes

Climate Change impact on Ecosystems

Chemical Ecology

Conservation Biology

Ecosystem Function and Change

Evolution

Landscape and Spatial Ecology

Mathematical Biology and Modeling

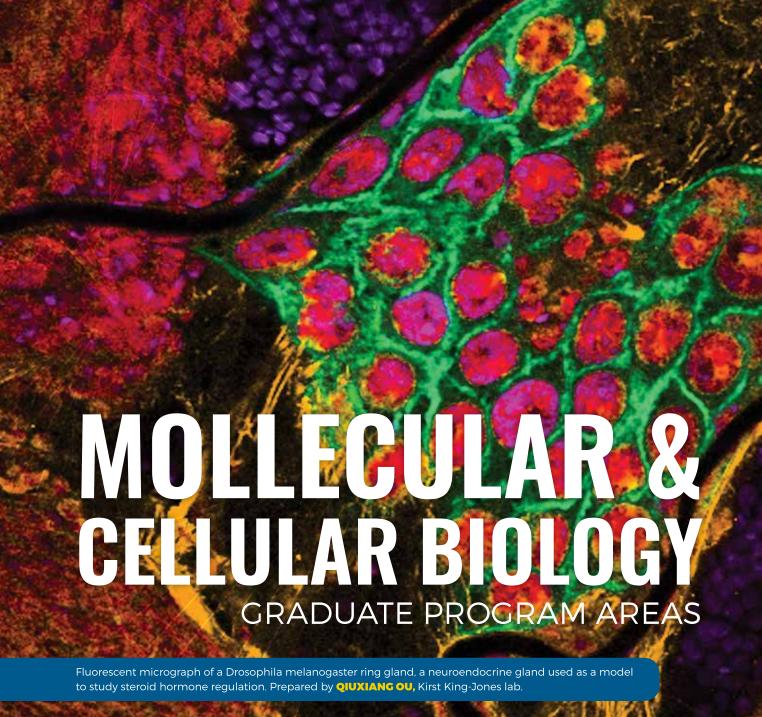
Microbial Ecology and Evolution

Paleontology

Plant-animal Interactions

Population Ecology

Systematics





THE DEPARTMENT OF BIOLOGICAL SCIENCES is home to many scientists who use bacterial, plant, and animal models to understand the molecules and mechanisms responsible for fundamental biological processes.

RESEARCH AREAS:

Cellular and Organismal Adaptation

Cellular Biogenesis

Chromatin Structure

Developmental Genetics

Hereditary Disease Origin and Progression

Host-pathogen Interactions

Immune System Evolution and Function

Nervous and Endocrine System Function

Microbial Disease Causation and Antibiotic Resistance

Plant Biotechnology and Genomics

Regulation of Metabolism

Sex Determination







SUPERB COLLECTIONS & MUSEUMS

WE ARE HOME TO OUTSTANDING COLLECTIONS that span the biological sciences and serve as excellent teaching and research resources:

Cryptogamic Herbarium

E.H. Strickland Entomological Museum

Freshwater Invertebrate Collection

Jim van Es Invertebrate and Malacology (Molluscs) Collection

Museum of Zoology

Parasite Collection

Paleobotanical Collection

Vascular Plant Herbarium

Laboratory for Vertebrate Paleontology

EXCELLENT FUNDING OPPORTUNITIES

MAJOR SCHOLARSHIPS ARE AVAILABLE TO GRADUATE STUDENTS through national agencies, as well as Alberta Innovates Health Solutions and Alberta Innovates Technology Futures. Our graduate students also have access to University of Alberta entrance awards, including MSc and Doctoral recruitment scholarships, the Walter H. John's Graduate Fellowship, and the President's Doctoral Prize of Distinction.

A number of smaller general awards are also available at the university and departmental level. Most graduate students accepted to the Department of Biological Sciences receive graduate teaching assistantships, and all students are guaranteed funding for a set period of time upon acceptance.

FUTURE CAREERS

OUR GRADUATE STUDENTS GO ON TO AN ARRAY OF CAREERS that span multiple sectors, including government agencies, industry, education, non-governmental organizations, and academic institutions. Noted careers include:

Biologists

Consultants

Photo-Journalists

Academic and Industrial Post-Doctoral Fellowships

Professors and Instructors

Course Coordinators

Professional Schools (Medicine, MBA, Law)

Research Technicians. Scientists. Associates

Science Writers/Reporters

DISCOVER BIOLOGICAL SCIENCES

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