ANIMAL SCIENCE

About Animal Science

The Department of Animal Science provides exciting challenges to graduate students in the areas of:

- Animal Breeding and Genetics;
- Animal Models for Human Medical Applications;
- Dairy Cattle Welfare;
- Epigenetic Modelling;
- Food Safety;
- Genome Editing (CRISPR tools);
- Large-Data Analyses;
- Metabolomics;
- Reproductive Physiology; and
- Ruminant and Non-Ruminant Nutrition and Metabolism

as they relate not only to livestock production, but also lead into the fields of human nutrition and medicine via animal models for human disease, infertility, and obesity. Official options in Biotechnology are also available.

Departmental researchers have excellent wet-lab facilities at their disposal; large-animal studies can be carried out at the Large Animal Research Unit on the Macdonald Campus farm, where other livestock species are available for research trials as well. Research can make use of the Small Animal Research Unit for studies involving rodent animal models, guinea pigs, neonatal piglets, and rabbits. Expertise is also available in applied information systems, management-software development, and large-scale data analyses. Close collaboration with the *Quebec Centre for Expertise in Dairy Production* (Lactanet) allows for large-scale data-mining projects, software development, and the production of advising tools for the industry. The Department also has significant expertise in food safety, environmental studies related to animal production, and global food security. Our staff's many connections via research networks allow for rich learning environments for our graduate students.

Animal Science Admission Requirements and Application Procedures

Admission Requirements

M.Sc. (Thesis)

Candidates are required to have either a bachelor's degree in Agriculture or a B.Sc. degree in an appropriate, related discipline with an equivalent cumulative grade point average (CGPA) of 3.0/4.0 (second class–upper division) or a grade point average (GPA) of 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

M.Sc. (Applied)

All candidates are required to have a B.Sc. degree or equivalent.

Ph.D.

Candidates are normally required to have an M.Sc. degree in an area related to the chosen field of specialization for the Ph.D. program.

Qualifying Students

Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, **but not as candidates for a degree**. Only one Qualifying year is permitted and can only be recommended at the discretion of the Department. **Successful completion of a Qualifying program does not guarantee admission to a degree program.**

Financial Aid

Graduate students pursuing **thesis-based programs** within the Faculty of Agricultural and Environmental Sciences (AES) benefit from diverse funding sources throughout their studies at McGill University. Financial support may come from a combination of guaranteed funding, prospective funding, and employment salary.

Upon admission to a **thesis-based program** in the Department of Animal Science, a student will be offered a **funding package** which will include a certain amount of guaranteed funding and may include additional prospective funding. The proposed funding arrangement will be outlined in a departmental funding letter addressed to the student, in supplement to the offer of admission from the University.

Students admitted to **non-thesis** graduate programs in the Department of Animal Science are responsible for procuring funding (e.g., scholarship or personal funds) to cover their tuition, fees, and living expenses for the duration of their program. Students should give serious consideration to financial planning before submitting an application.#You can find tuition and fee information on McGill's Student Accounts Graduate Fee Calculator or you may contact the Graduate Program Coordinator for your program of interest. Applicants may wish to consult theFund your Studies web page#for#financial aid#or#external scholarship#possibilities.

English Language Proficiency

For graduate applicants whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized Canadian or American (English or French) institution or from a recognized foreign institution where English is the language of instruction, documented proof of English proficiency is required prior to admission. For a list of acceptable test scores and minimum requirements, visit mcgill.ca/gradapplicants/international/proficiency.

Application Procedures

McGill's online application form for graduate program candidates is available at mcgill.ca/gradapplicants/how-apply.

See University Regulations & Resources > Graduate > Graduate Admissions and Application Procedures > Application Procedures for detailed application procedures.

Additional Requirements

The items and clarifications below are additional requirements set by this department:

- Acceptance to all programs depends on a staff member agreeing to serve as the student's supervisor.
- The GRE – not required, but highly recommended.

Application Dates and Deadlines

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Department of Animal Science and may be revised at any time. Applicants must verify all deadlines and documentation requirements well in advance on the appropriate McGill departmental website; please consult the list at mcgill.ca/gps/contact/graduate-program.

Information on application deadlines is available at mcgill.ca/gradapplicants/how-apply/application-steps/application-deadlines.

Admission to graduate studies is competitive; accordingly, late and/or incomplete applications are considered only as time and space permit.

Available Programs

- Animal Science (Non-Thesis) (M.Sc.A.) (45 credits)
- Animal Science (Non-Thesis): Sustainable Agriculture (M.Sc.A.) (45 credits)
- Animal Science (Ph.D.)
- Animal Science (Thesis) (M.Sc.) (45 credits)
- Animal Science: Bioinformatics (Ph.D.)

Program Overview

Master of Science (M.Sc.) Animal Science (Thesis)

Two one-semester courses and three seminar courses at the postgraduate level complement an area of research (resulting in a thesis) under the supervision of one of our staff—many of whom are leaders in their respective fields. Entrance to this program is highly competitive, requiring an excellent B.Sc. and letters of reference. Graduates of this program are well prepared for careers in the animal industry, the pharmaceutical sector, and many varied fields in biotechnology.

Master of Science, Applied (M.Sc.A.) Animal Science (Non-Thesis)

The Applied Master's program must be taken with the Sustainable Agriculture concentration. Please see the respective program description for the Sustainable Agriculture option.

Doctor of Philosophy (Ph.D.) Animal Science

Since the Ph.D. is primarily a research degree, the amount of coursework required will normally be considerably less than is the case for the M.Sc. It depends on the background of the individual student and must be approved by the student's advisory committee. At a minimum, it includes two seminar courses at the graduate level and the Ph.D. Comprehensive Examination as an admission to candidacy for the Ph.D. As with the M.Sc. (Thesis), admission is based on an excellent track record. Suitable candidates are encouraged to contact potential supervisors within their chosen area of interest. Applicants should, however, be aware that no professor is in a position to accept students without formal approval of the application by the Graduate Admissions Committee.

Doctor of Philosophy (Ph.D.) Animal Science: Bioinformatics

Bioinformatics research lies at the intersection of biological/medical sciences and mathematics/computer science/engineering. The intention of the Bioinformatics Option is to train students to become researchers in this interdisciplinary field. This includes the development of strategies for experimental design, the construction of tools to analyze datasets, the application of modelling techniques, the creation of tools for manipulating bioinformatics data, the integration of biological databases, and the use of algorithms and statistics.

Location

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