Why GRADUATE STUDIES in BIOLOGY?

There is no end to the fascinating questions we can ask about how the natural world functions, from dissecting the molecular mechanisms at play in cells to understanding the complexity of interactions in the biosphere, the beauty and mystery of nature astounds. It is an incredibly exciting time to do biological research and we are learning about the natural world at a rate unprecedented in history. The remarkable power of modern research tools, from powerful gene-editing techniques to bioinformatics to ecosystem modelling, is driving exciting discoveries daily. These discoveries are made by graduate students. Regardless of your area of interest, there is something in biology for you, questions waiting to be answered, and riddles of nature to be solved.

Why QUEEN’S?

The Biology Department at Queen’s is one of the largest departments on campus with approximately 100 graduate students supervised by 32 faculty with research opportunities in a range of disciplines. Our faculty are world leaders in several research fields, including many Canada Research Chairs and Queen's National Scholars, and winners of national and international awards for research and teaching excellence.

“When I started my [Biology graduate degree] at Queen’s, all of a sudden I had this new network of friends who were interested in the same biological questions that I was- it was a ton of fun.”

– Rosyln Dakin, PhD

We offer a broad and challenging program in one of the top Biology departments in the country. We have an impressive range of sophisticated infrastructure for cell biology, biochemistry, molecular biology, ecology, and evolutionary research including: a confocal microscopy suite, DNA and RNA sequencing services, aquatic research facilities, and a state-of-the-art phytotron. Our field station, comprising more than 3200 hectares of woodland, fields and lakes is a short drive away and has excellent research facilities and living quarters.

Program STRUCTURE

MSc (2 years): 4 single-term courses with minimum standing of 70% in each, research thesis and defence.

Students who show exceptional promise in their research have the option to transfer to the PhD program after one year.

RESEARCH Areas

- Animal Physiology
- Cell and Molecular Biology
- Ecology, Evolution and Behaviour
- Plant Sciences
- Mathematical Modeling & Bioinformatics

We encourage you to identify an area of research interest and contact a potential supervisor before applying.
MSc MAP

MASTER OF SCIENCE (MSc)

ACQUIRE YOUR ACADEMIC GOALS

- Complete WHMIS safety training.
- Find your way through the academic process with help from departmental and Expanding Horizons professional development workshops, the department Grad Chair and the SGPS Habitat.
- Complete your coursework, begin to research and write your thesis.

MAXIMIZE RESEARCH IMPACT

- Consider participating in the 3 Minute Thesis (3MT) competition.
- Attend and participate in graduate seminars such as Departmental Seminars, EEB, Limnology, and MCIB seminars, as well as the AI Downe Lecture.
- Complete and defend your thesis.

BUILD SKILLS AND EXPERIENCE

- Participate in graduate and professional community through experiential opportunities on- and off-campus.
- Participate in your graduate and professional community through experiences such as student graduate outreach programs, organizing conferences, and research groups like Let’s Talk Science.
- Prepare for work or studies in a multi-cultural environment by taking the OUC and Four Directions Aboriginal Student Centre’s Training Certificate.

ENGAGE WITH YOUR COMMUNITY

- Explore how you can connect with your community through volunteer opportunities on- and off-campus.
- Explore different careers of interest by reading alumni profiles on the SGPS website, and using QueensConnects on LinkedIn to connect with Queen’s alumni, or find alumni in various careers through Ask an Alum.
- Participate in hiring committees and attend job talks. Start focusing on areas of interest. Research organizations of interest and start putting together your CV or resume for potential positions of interest. Get help from Career Services with job searching, resumes, or interviews.

LAUNCH YOUR CAREER

- Start thinking about the audiences for your research. If you will be continuing graduate studies, apply for NSERC and OGS funding.
- If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor.
- Diversifying your career options is an important career planning workshop. Get help from a Career Services workshop.

GETTING STARTED

- Check out professional development workshops from the Queen’s Journal, Expanding Horizons, and the CFRC SGS Blog.
- Check admission test deadlines, if needed for further studies.
- Set up a meeting with the School of Graduate Studies for a Grad Chat to discuss your research interests.

INTERMEDIATE STAGE

- Consider positions in student services, the SGPS, or media outlets like the Queen’s Journal, CPRC, and the SGS Blog. Look in the AMS Clubs Directory for more ideas.
- Serve on departmental, faculty or university committees. Talk to the Biology Graduate Student Council for tips on getting involved.
- Consider putting an article in The Conversation.
- Attend or present at a graduate conference such as those hosted by the Canadian Society for Ecology and Evolution, Society for Experimental Biology, Canadian Society of Plant Biology, or the many other national and international groups that feature graduate research.
- Complete your coursework; begin to research and write your thesis.

WRAPPING UP

- Find your way through the academic process with help from departmental and Expanding Horizons professional development workshops, the department Grad Chair and the SGPS Habitat.
- Complete and defend your thesis.
- Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, interviews. Get help from a Career Services workshop.
- Do some targeted networking with people working in careers of interest, through QueensConnects on LinkedIn, the Queen’s Alumni Association, professional associations, and at conferences. Get help from a Career Services workshop.

WHAT WILL I LEARN?

A graduate degree in Biology can equip you with valuable and versatile skills, such as:

- Knowledge and technical skills
- Effective communication skills in multiple forms for diverse audiences
- Information management: prioritize, organize and synthesize large amounts of information
- Time management: meet deadlines and manage responsibilities despite competing demands
- Project management: develop ideas, gather information, analyze, criticize, appraise findings, draw and act on conclusions
- Creativity and innovation
- Perseverance
- Independence and experience as a collaborative worker
- Awareness, an understanding of sound ethical practices, social responsibility, responsible research and cultural sensitivity
- Professionalism in all aspects of work, research, and interactions
- Leadership: initiative and vision leading people and discussion

WHERE CAN I GO?

A Master’s degree in Biology can take you in many directions. Many of our MSc students choose to continue their academic inquiry with a PhD. Our Master’s students are equipped with a strong foundation for careers in:

- Academia and teaching
- Agriculture
- Pharmacy and medicine
- Environmental law, patent law
- Government research centres and organizations
- Biotechnology industries
- Wildlife conservation and environmental consulting
- Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

Visit careers.queensu.ca/gradmaps for the online version with links!
Application FAQs

What do I need to know to APPLY?

**ACADEMIC REQUIREMENTS**
- Honours Bachelor’s Arts & Sciences degree.
- Grade requirements: minimum upper second class standing (B+ average).

**ADDITIONAL REQUIREMENTS**
- Correspond with potential supervisors (May require CV).
- If English is not a native language, prospective students must meet the English language proficiency requirements in writing, speaking, reading, and listening. The School of Graduate Studies requires the following minimum scores:
  - TOEFL (paper-based): 550
  - TOEFL iBT: Writing (24/30); Speaking (22/30); Reading (22/30); Listening (20/30), for a total of 88/120 (applicants must have the minimum score in each test as well as the minimum overall score), or
  - IELTS: 7.0 (academic module overall band score), or
  - PTE Academics: 65.

**KEY DATES & DEADLINES**
- Application due: March 1 (domestic students), February 15 (international students).
- Notification of acceptance: Students are accepted on a rolling basis as applications are reviewed.

Before you start your application, please review the Graduate studies application process.

What about FUNDING?

M.Sc. students in Biology receive minimum funding of $24,300 per year for the two years of the program.

Apply for external funding from OGS, NSERC and other sources. Queen’s will automatically issue a $5,000 top-up to Masters winners of federal government tri-council awards. For more information, see the School of Graduate Studies’ information on awards and scholarships, or see what awards are offered through the Biology Department.