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 over 30 faculty with research opportunities in a range of disciplines. Our faculty are world leaders in several research fields, including many Canada and Queen’s Research Chairs and winners of national and international awards for research and teaching excellence.

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

Visit the Biology Department website to read faculty profiles and learn more about faculty members’ research areas. When you find a faculty member with similar research interests to yours, contact them and tell them about your interest in graduate work and related experience.

Program STRUCTURE

PhD (4 years): research thesis and defense. (Some courses may be required).

RESEARCH Areas

• Animal Physiology
• Cell and Molecular Biology
• Ecology, Evolution and Behaviour
• Plant Sciences
• Mathematical Modelling & Bioinformatics
• Paleolimnology

“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.”

– Roslyn Dakin, PhD
2023-2024

Biology PhD Map

DOCTOR OF PHILOSOPHY (PhD)

YEAR I

ACQUIRE YOUR ACADEMIC GOALS
- Key priorities include forming your committee, coursework, field exams, and language exams.
- Meet early with your supervisor to discuss and set expectations, roles, responsibilities, program requirements, resources, research opportunities, timelines, and any required accommodation plans.
- Attend and participate in numerous seminars, including Departmental Seminars and the AI Downie Lecture series.

YEAR II

ACHIEVE YOUR ACADEMIC GOALS
- Write and defend your thesis proposal.
- Embark on your substantive research.
- Set up regular meetings with your supervisor to discuss progress and obstacles to timely completion.
- Find your way through the academic process with the help of School of Graduate Studies and Postdoctoral Affairs professional development and the SGSPA website.

YEAR III

YEAR IV

WHAT WILL I LEARN?
A graduate degree in Biology can equip you with:
- 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, critically appraise findings, draw, and act on conclusions
- Creativity and innovation
- Perseverance
- Independence and experience as a collaborative worker
- Awareness and 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 PhD in Biology can take your career in many directions. In Canada, less than 40% of all PhDs will work in post-secondary education – the majority will work in industry, government, or non-profits. Our PhD students are equipped with a strong foundation for careers in:
- Academia and teaching
- Agriculture
- Biotechnology industries
- Environmental law, patent law
- Government research centres and organizations
- Pharmacy and medicine
- Wildlife conservation and environmental management

Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

Build connections with faculty outside of your department. Pursue interviews for faculty positions and apply for post-doc fellowships and positions.
- Apply to jobs or make plans for other adventures. Get involved in Career Services with job searching, internships, and interviews.
- If considering jobs abroad, research possible immigration regulations. If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor.

How to use this map
Use the 5 rows of the map to explore possibilities and plan for success in the five overlapping areas of career and academics. The map just offers suggestions – you don’t have to do it all! To make your own custom map, use the My Grad Map tool.

© Career Services, Queen's University, 2023-2024
Graduate Studies FAQs

Application FAQs

What do I need to know to APPLY?

ACADEMIC REQUIREMENTS
- MSc in Biology or direct entry from BSc for exceptional candidates.

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 following minimum scores are required: (1) TOEFL iBT: Writing (24/30); Speaking (22/30); Reading (22/30); Listening (20/30). Applicants must have the minimum score in each test as well as the minimum overall score, or (2) IELTS: 7.0 (academic module overall band score and a 7.0 for each test band), or (3) PTE Academics: 65, or (4) CAEL CE -70 (minimum overall score).

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?

The minimum funding guarantee for Biology PhD students is $26,300 per year, throughout years 1-4. The funding package may be comprised of graduate awards and teaching assistantships. Current tuition and other fees can be found here.

Apply for external funding from OGS, NSERC, and other sources. Queen’s will automatically issue a one time $10,000 award to Doctoral students who have won federal government tri-council awards. For more information, see the School of Graduate Studies and Postdoctoral Affairs’ information on awards and scholarships.