

Biology PhD Map

Applying to and Navigating Graduate Studies

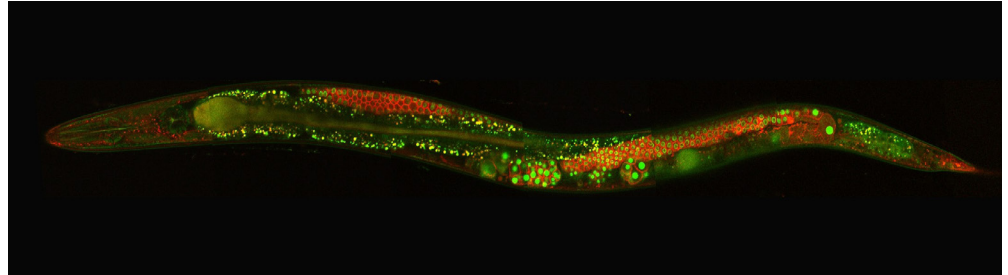
GRAD MAP FOR PhD STUDENTS →

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.

"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



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 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 3,200 hectares of woodland, fields, and lakes, is a short drive away and has excellent research facilities and living quarters.

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



GRADUATE STUDIES AND
POSTDOCTORAL AFFAIRS

queensu.ca/grad-postdoc

YEAR I

YEAR II

YEAR III

YEAR IV
& TRANSITIONINGACHIEVE 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/occupational goals, timelines, and any required accommodation plans.
- Attend and participate in numerous seminars, including Departmental Seminars and the Al Downe Lecture series.

- 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 (SGSPA) professional development and the SGSPA website.
- Seek experiential/professional development

- Continue to meet regularly with your supervisor, review research progress, and write your dissertation. Check out SGSPA writing camps, such as Dissertation on the Lake.
- Use conference presentations to create, discuss, and explore ways to disseminate research findings.
- Begin discussion of potential thesis defence examiners.
- Complete the Annual Research Progress Report (1/2)

- Plan date of thesis submission for examination.
- Present your research to graduate students and faculty or at conferences and work with supervisor to prepare for defence.
- Review submission and examination guidelines.
- Secure necessary oral defence accommodations.
- Discuss career pathways, references letters, and publication options with your supervisor.
- Complete the Annual Research Progress Report (2/2).

MAXIMIZE
RESEARCH
IMPACT

- Think about audiences for your research.
- Complete CORE online module on research ethics if doing research regarding sensitive topics.
- Apply to NSERC, OGS, and other funding.
- Attend conferences in your field.

- 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 groups that feature graduate research.
- Apply for the Graduate Dean's Travel Grant for Doctoral Field Research.

- Continue to present at conferences.
- Consider participating in the 3 Minute Thesis (3MT) or GRADflix competition.
- Contact the Queen's Media Centre for guidance on speaking to news outlets about your work. List yourself on the Arts and Science University Research website.

- Continue to attend conferences and connect with scholars in your field and with community partners.
- Continue public outreach through social media and the Queen's Media Centre.
- Consider being interviewed on the SGSPA radio show Grad Chat to talk about your research.

BUILD
SKILLS AND
EXPERIENCE

- Serve on departmental, faculty, or university committees. Talk to the Biology Graduate Student Council for tips on getting involved.
- Consider positions in student services, the SGPS, or media outlets like the Queen's Journal, CFRC, and the SGSPA Blog. Look in the AMS Clubs Directory.
- Use a Teaching Assistant or Research Assistant position to develop your skills and experience.

- Hone skills for non-academic employment by continuing involvement on committees and in the community.
- Start keeping an eportfolio of your skills, experiences, and competencies.
- For help with teaching, get support from the Centre for Teaching and Learning. Enrol in SGS902 or the PUTL Certificate for more professional development in teaching and learning.

- Begin teaching as a departmental Teaching Fellow.
- Investigate internships from MITACS and other sources. Find opportunities for extra training through CTL, SGSPA professional development, MITACS, or other sources to boost your skills.
- Prepare for work or studies in a multi-cultural environment by taking the Intercultural Awareness Training Certificate hosted by QUIC and Four Directions.

- Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews. Get help from a Career Services workshop.

ENGAGE
WITH YOUR
COMMUNITY

- Consider volunteering with different community organizations such as Science Rendezvous.
- Consider volunteering with different community organizations, such as the Kingston Field Naturalists.

- Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups.

- Do some targeted networking with people working in careers of interest, through Queen's Connects on LinkedIn, the Queen's Alumni Association, professional associations, and at conferences. Get help from a Career Services workshop.

- Join professional associations like Science for Peace, and the many discipline-specific societies that host annual meetings.
- Join groups on LinkedIn reflecting specific careers or topics of interest.

LAUNCH YOUR
CAREER

- Finding a career that fits starts with knowing yourself. Get help by taking a Career Services workshop or meeting with a career educator and coach.
- Start reading publications like University Affairs and the Chronicle of Higher Education. Browse non-academic labour market websites.

- Start building your teaching portfolio including student evaluations, and seek mentorship.
- Explore different careers of interest by using Queen's Connects on LinkedIn to connect with Queen's alumni. For more information check out Career Cruising.
- Investigate requirements for full-time jobs or other opportunities related to careers of interest.

- Participate in hiring committees and attend job talks. Research academic careers of interest. Craft your CV and job application materials.
- Start focusing on non-academic areas of interest. Research organizations of interest and start putting together your industry resume and begin your job search plan.

- 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 help from Career Services with job searching, resumes, 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.

Knowledge & Workplace
Skills

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

Career Possibilities

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 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.

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. To make your own custom map, use the My Grad Map tool: careers.queensu.ca/gradmaps.

Graduate Studies FAQs

How do I make the most of my time at Queen's?

Use the Grad Map to plan for success in five overlapping areas of your career and academic life. Everyone's journey is different - the ideas on the maps are just suggestions to help you explore possibilities. For more support with your professional development, take advantage of the SGSPA professional development framework and the new Professional Development Plan (PDP) process to set customized goals to help you get career ready when you graduate.

Where can I get help?

Queen's provides you with a broad range of support services from your first point of contact with the university through to graduation. Ranging from help with academics and careers, to physical, emotional, or spiritual resources – our welcoming environment offers the programs and services you need to be successful, both academically and personally. Check out the SGSPA website for available resources.

What is the community like?

At Queen's, graduate students from all disciplines learn and discover in a close-knit intellectual community. You will find friends, peers and support among the graduate students enrolled in Queen's more than 130 graduate programs within 50+ departments & research centres. With the world's best scholars, prize-winning professional development opportunities, excellent funding packages and life in the affordable, historic waterfront city of Kingston, Queen's offers a wonderful environment for graduate studies. Queen's is an integral part of the Kingston community, with the campus nestled in the core of the city, only a 10-minute walk to downtown with its shopping, dining and waterfront. For more about Kingston's history and culture, see Queen's University's Discover Kingston page.

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. For the 2025-26 academic year, Queen's will automatically issue a one time \$5,000 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.



Queen's
UNIVERSITY

DEPARTMENT OF
BIOLOGY

Graduate Assistant
(613) 533-6138
biologygradassistant@queensu.ca
biology.queensu.ca