Why GRADUATE STUDIES in PATHOLOGY & MOLECULAR MEDICINE?

Graduate students and their work are an important part of an ongoing research process that provides the community with ways of understanding natural, cultural, imaginative, social, and technological phenomena. The faculty, staff, and trainees in Pathology & Molecular Medicine are engaged in world-class research and teaching, attracting and mentoring the best students, the finest educators, dedicated support staff, and internationally-competitive researchers. We value curiosity, creativity, commitment, and collegiality.

The department is a distinguished academic centre engaging a wide range of research endeavours including anatomical sciences, bacteriology, biochemistry, cancer biology, cardiovascular sciences, cell biology, developmental biology, immunology, molecular biology, neuroscience, pharmacology, physiology, reproductive biology, toxicology, and virology. The breadth and depth of our research has a strong foundation in multi-disciplinary discovery. The faculty and trainees collaborate with numerous research institutions locally, nationally, and internationally.

Why QUEEN'S?

With a focus on cancer – 12 of our 20 investigators are cancer biologists – our department members deliver comprehensive diagnostic laboratory and clinical services to Southeastern Ontario through the Kingston General Hospital, offering great training for the next generation of biomedical research scientists and laboratory physicians.

Program STRUCTURE

PhD (4 years): Course work, research making novel contributions to the field of study, and a thesis.

Research AREAS

- Cancer Research and Developmental Biology
- Hemostasis, Thrombosis Research, and Vascular Biology
- Human Genetics and Cytogenetics

Visit the Pathology and Molecular Medicine 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, area of research interest, and related experience.

Queen’s is a great setting to learn first-hand how the fast pace of molecular genetic research is changing clinical practice, leading to exciting new diagnostic and treatment approaches for cancer and other diseases.
**2023-2024**

**Pathology & Molecular Medicine PhD Map**

**ACHIEVE YOUR ACADEMIC GOALS**

- **YEAR I**
  - Key priorities include completing any required coursework and training, and developing your research proposal.
  - Meet early with your supervisor to set expectations and discuss roles, responsibilities, program requirements, resources, research/occupational goals, timelines, and any required accommodation plans.

- **YEAR II**
  - Priorities include completing your comprehensive examination and pursuing research.
  - Find your way through the academic process with the help of School of Graduate Studies and Postdoctoral Affairs professional development workshops, the Pathology and Molecular Medicine Graduate Coordinator, and the SGSPA website.

- **YEAR III**
  - Continue to research and write your dissertation. Check out the SGSPA writing camps, such as Dissertation Boot Camp.
  - Consider publishing elements of your research.
  - Use conference presentations to create and refine dissertation material.

- **YEAR IV**
  - Plan date of thesis submission for examination.
  - Present your research to graduate students and faculty orally 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.

**MAXIMIZE RESEARCH IMPACT**

- **YEAR I**
  - Think about audiences for your research.
  - Complete CORE online module on research ethics if doing research regarding sensitive topics.
  - Apply to CIHR, NSERC, OGS, and other funding.
  - Serve on departmental, faculty, or university committees.

- **YEAR II**
  - Present your work at graduate conferences such as Canadian Cancer Research Conference through professional associations, or topic conferences.
  - Expand your research audience through social media.
  - Apply for the Graduate Dean’s Travel Grant for Doctoral Field Research.

- **YEAR III**
  - Continue to present at conferences.
  - Consider participating in the 3 Minute Thesis (3MT) competition.
  - Contact the Queen’s Media Centre for guidance on speaking to news outlets about your work.

- **YEAR IV**
  - 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 putting an article in The Conversation.

**BUILD SKILLS AND EXPERIENCE**

- **YEAR I**
  - Serve on departmental, faculty, or university committees.
  - Consider positions in student services, the SGPS, or media outlets like the Queen’s Joung, 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.

- **YEAR II**
  - 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 SGSP99 or the PTTL Certificate for more professional development.

- **YEAR III**
  - Investigate internships from MITACS and other sources.
  - Find opportunities for extra training through CTL, School of Graduate Studies and Postdoctoral Affairs 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 FDISC.

- **YEAR IV**
  - 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**

- **YEAR I**
  - Explore how you can connect with your community through experiential opportunities on- and off-campus.
  - Consider volunteering with different community organizations, such as the Canadian Cancer Society, Kingston General Hospital, and the Canadian Breast Cancer Foundation.

- **YEAR II**
  - Participate in your graduate and professional communities through activities such as graduate student outreach programs, organizing conferences, and research group activity.
  - If pursuing research abroad or outside Kingston, investigate options such as the Jeremy Nesheim Graduate Travel Award which supports travel to an expert laboratory to learn new methods.

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

- **YEAR IV**
  - Join professional associations like the American Society for Hematology, the American Association for Cancer Research, the Canadian Cancer Society.
  - Apply to jobs.
  - Continue targeted networking with people working in careers of interest. Join groups on LinkedIn reflecting specific careers or topics of interest in pathology and molecular medicine.

**LAUNCH YOUR CAREER**

- **YEAR I**
  - Finding a career fit starts with knowing yourself. Take a Career Services workshop or meet with a career educator and coach for help.
  - Start reading publications like University Affairs and the Chronicle of Higher Education. Browse non-academic labour market websites.
  - Stay on the lookout for special events like School of Graduate Studies  and Postdoctoral Affairs Career Week to explore your career pathways.

- **YEAR II**
  - Start building your teaching portfolio, including student evaluations and seeking mentorship.
  - Explore different careers of interest by using Career Connects on LinkedIn to connect with Queen’s alumni. For more information check out Career Cruising.
  - Investigate requirements for professional positions or other opportunities related to careers of interest.

- **YEAR III**
  - Participate in hiring committees and attend job talks. Research academic careers of interest. Craft your CV and job application material.
  - 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.

- **YEAR IV**
  - 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.
  - When 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.

**WHAT WILL I LEARN?**

- A PhD in Pathology & Molecular Medicine 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.
  - Administration in academic, health care or government settings
  - Academic labs
  - Health Care (hospital clinical labs)
  - Marketing positions in private sector companies
  - Pharmaceutical companies
  - Scientific supply companies
  - Teaching positions in academic institutions or the private sector
  - Technical positions in academic institution or the private sector
  - Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

WHERE CAN I GO?

- A graduate degree in Pathology and Molecular Medicine can equip you with valuable transferable 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, critically appraise findings, draw and act on conclusions
  - Creativity and innovation
  - Resilience
  - 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

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.
Graduate Studies FAQs

Application FAQs

What do I need to know to APPLY?

ACADEMIC REQUIREMENTS

- Honours BSc or equivalent in life sciences, biochemistry, biology, or equivalent program with first class standing, or MSc, or equivalent research experience.
- We consider all of your grades, but pay particular attention to the last two years of science-related courses.

ADDITIONAL REQUIREMENTS

- 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: February 1st to be considered for internal funding.
- Notification of acceptance: Quickly pending confirmation of a supervisor.

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

What about FUNDING?

Minimum funding guarantee for PhD students: $23,000 annually. For internal, provincial, and national competitive award winners, the funding package increases by 2.5%, 5% and 10% respectively.

Apply for external funding from CIHR, NSERC, OGS, the Heart & Stroke Foundation, CBCF, the Department of Defence, the American Cancer Society, and other sources. Queen's will automatically issue a one time $10,000 award to incoming PhD 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.

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.