Why GRADUATE STUDIES in BIOMEDICAL & MOLECULAR SCIENCES?

Graduate students and their work are an important part of an ongoing research process that provides the scientific community with ways of understanding fundamental biomedical and molecular processes underlying normal cellular and microbial processes, organ system function, and human disease. The faculty, staff and trainees in Biomedical and Molecular Sciences 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.

Why QUEEN’S?

The Biomedical and Molecular Sciences Department at Queen’s provides a cross-disciplinary environment and delivers the programs in a collaborative and integrated manner. This interdisciplinary approach gives candidates access to over 80 faculty members engaged in a broad spectrum of biomedical research, using techniques to address questions concerning single molecules, cellular/microbial function, organ-systems, and whole-animal biology.

“DBMS provides graduate trainees the opportunity to conduct novel research in a collaborative, inclusive, and close-knit environment. Faculty promote cross-disciplinary learning by ensuring students are exposed to various scientific themes and cutting edge research techniques.”

– Rylend Mulder, PhD Candidate

Program STRUCTURE

PhD (4 years, full time): Research and comprehensive exam, thesis, and oral defense.

Fields of SPECIALIZATION

- **Biochemistry and Cell Biology**: focuses on understanding the fundamental processes of life and human disease.
- **Experimental Medicine**: employs interdisciplinary methods to explore the processes responsible for both the normal and diseased state.
- **Microbes, Immunity, and Inflammation**: focuses on questions at the cellular and molecular level involving viral and bacterial organisms and the immune system.
- **Reproduction and Developmental Sciences**: spans clinical and basic science, with a focus on fertilization and embryo implantation, perinatal health, women’s health, and more.
- **Therapeutics, Drug Development, and Human Toxicology**: focuses on the effects, both beneficial and deleterious, of chemicals including drugs and environmental contaminants, on human health.

Visit the Biomedical and Molecular Sciences [website](https://www.queensu.ca/bsci) to read faculty profiles, and learn more about faculty members' research areas and **research groups**. When you find a faculty member with similar research interests to yours, contact him/her and tell them about your interest in graduate work and related experience.

See the Biomedical and Molecular Sciences Graduate [Student Handbook](https://www.queensu.ca/bsci) online for more detailed information about the program.

We encourage you to identify an area of research interest and contact a potential supervisor before applying.
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<th>Biomedical &amp; Molecular Sciences PhD MAP</th>
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**ACHIEVE YOUR ACADEMIC GOALS**
- Key priorities include your relationship with your supervisor, completing required health and safety, animal, human research ethics training and any required coursework, 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.
- Look to Student Academic Success Services for supports.

**MAXIMIZE RESEARCH IMPACT**
- Think about audiences for your research.
- Complete ROMEO online module on research ethics if doing research with living people or sensitive topics.
- Apply to CHIR, NSERC, OGS, and other funding.
- Attend conferences in your field.

**BUILD SKILLS AND EXPERIENCE**
- Serve on departmental, faculty or university committees. Talk to the graduate representatives for tips on getting involved.
- Consider positions in student services, the SEPG, or media outlets like the Queen’s Journal CPRC and the SSG Blog. Look in the AMS Clubs Directory.
- Use a Teaching Assistant or Research Assistant position to develop your skills and experience.

**ENGAGE WITH YOUR COMMUNITY**
- Consider volunteering with different community organizations, such as Kingston General Hospital.
- Connect to broader communities of biomedical and molecular science professionals.

**LAUNCH YOUR CAREER**
- Finding a career that fits starts with knowing yourself. Take a Career Services career planning workshop or meet with a career counsellor for help. Check out books like *What Are You Going to Do With That?* or planning a Scientific Career in Industry from the *Career Resource Answers* for advice on various career options.
- 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 Graduate Student Career Forum to explore your career pathways.

**YEAR I**
- Priorities include completing your comprehensive examination and pursuing 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 Exploring Horizons and SSQ Habitat.
- Complete AODA training in accessible customer service.
- Seek experiential/professional development opportunities.

**YEAR II**
- Priorities include completing your comprehensive examination and pursuing 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 Exploring Horizons and SSQ Habitat.
- Complete AODA training in accessible customer service.
- Seek experiential/professional development opportunities.

**YEAR III**
- Continue to meet regularly with your supervisor, review research progress, and write your dissertation. Check out the SGS *Dissertation Boot Camp* or *Dissertation on the Lake*.
- Use conference presentations to create, discuss, and explore ways to disseminate research findings. Learn from the Exploring Horizons Publishing workshop.
- Begin discussion of potential thesis defence examiners.

**YEAR IV & TRANSITIONING**
- 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.

**WHERE CAN I GO?**
- A master’s degree in Biomedical & Molecular Sciences can take your career in many different directions. Many of our MSc students choose to continue their academic inquiry with a PhD. Our PhD students are equipped with a strong foundation for careers in:
  - Health Care (Hospital clinical labs)
  - Pharmaceutical companies
  - Academic and research labs
  - Scientific supply companies
  - Administration in academic, health care or government settings
  - Teaching positions in academic institutions or the private sector
  - Technical positions in academic institutions or the private sector
  - Marketing positions in private sector
- Taking time to explore career options, build experience, and network can help you have the same transition to the world of work after graduation.

**WHAT WILL I LEARN?**
- A graduate degree in Biomedical and Molecular Sciences 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, critique, 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

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

What do I need to know to APPLY?

ACADEMIC REQUIREMENTS
- A Master's degree is normally required for admission to the Ph.D. program. In certain circumstances, direct admission to the Ph.D. program is possible.

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 School of Graduate Studies requires the following minimum scores: TOEFL (paper-based): 550, (2) 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 (3) IELTS: 7.0 (academic module overall band score), or (4) PTE Academics: 65.

KEY DATES & DEADLINES
- Application due: March 1st (To be considered for internal awards). Flexible deadline.
- Notification of acceptance: Pending confirmation of a supervisor.

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

What about FUNDING?

PhD students in Biomedical and Molecular Sciences are offered a minimum funding of $21,000 per year. As part of the basic funding package, you may serve as a Teaching Assistant for at least one term per year.

We encourage all students to apply for external funding from OGS, SSHRC and other sources. Queen's will automatically issue a $10,000 award to incoming PhD students who have won federal government tri-council awards. For more information, see the School of Graduate Studies' information on awards and scholarships.

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