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.

“The Department provides an environment that encourages collaboration with numerous researchers with a wide variety of interests and expertise.”

– Nikki Philbrook, PhD

Program STRUCTURE

MSc (2 years, full time): Course work, seminars, research project and thesis with 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.

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

**GETTING STARTED**

- Achieve your academic goals:
  - Start with key priorities like developing your relationship with your supervisor, forming your committee, and doing your coursework.
  - Find your way through the academic process with help from departmental and Expanding Horizons professional development workshops, the department Grad Chair and the SGS Habitat.
  - Complete WHMIS hazard training.

- Maximize research impact:
  - Start to think about the audiences for your research.
  - If you will be continuing graduate studies, apply for funding from sources such as CIHR, NSERC, OGS, the Heart & Stroke Foundation, CBIC, the Department of Defence and the American Cancer Society.

- Build skills and experience:
  - Consider positions in student services, the SGS, or media outlets like the Queen's Journal, CFRC, Studio Q and the SGS Blog. Look in the AMS Clubs Directory for more ideas.
  - Serve on departmental, faculty or university committees. Talk to the graduate representatives for tips on getting involved.
  - Check out professional development workshops from Expanding Horizons and the Rehabilitation Science Department.

- Engage with your community:
  - Explore how you can connect with your community through experiential opportunities on- and off-campus.
  - Consider volunteering with different community organizations, such as Kingston General Hospital.
  - Consider volunteering with different community organizations, such as Queen's Alumni.

- Launch your career:
  - Finding a career that fits starts with knowing yourself. Get help by taking a Career Services career planning workshop or meeting with a career counsellor. Check out books like So What Are You Going to Do With That? or Planning a Scientific Career in Industry from the Career Resource Area 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.
  - Check admission test deadlines if needed for further studies.

**INTERMEDIATE STAGE**

- Achieve your academic goals:
  - Complete your coursework; begin to research and write your thesis.
  - If working with animals, students must take an introduction course to animal care (OAMS 799).
  - Take the Lab Safety Training course and AODA training.
  - Complete the Fundamentals of Academic Research course (BMED 860).
  - Attend the departmental seminar program (BMED 897).

- Maximize research impact:
  - Attend or present at a graduate conference. Ask your supervisor for recommendations.
  - Consider participating in the 3 Minute Thesis (3MT) competition.
  - Expand your research audience through social media such as Twitter or a blog.
  - Set up a meeting with the School of Graduate Studies for a Grad Chat to discuss your research interests.

- Build skills and experience:
  - Start keeping an epistolofilo of your skills, experiences and competencies.
  - Use a Research Assistant or Teaching Assistant position to develop your research or teaching skills.
  - For help with teaching, get support from the Centre for Teaching, and Learning. Enroll in SGS901 or the PUTL certificate for more professional development in teaching and learning.

- Engage with your community:
  - Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups.
  - Prepare for work or studies in a multi-cultural environment by taking the OUC and Four Directions Aboriginal Student Centre's Training Certificate.
  - If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor.

- Launch your career:
  - Explore different careers of interest by reading alumni profiles on the SGS website, and using Queen'sConnects on LinkedIn to connect with Queen's alumni, or find alumni in various careers through Ask an Alum.
  - If you are considering a PhD, explore programs of interest reach out to faculty, and apply to PhD programs and external scholarships.

**WRAPPING UP**

- Achieve your academic goals:
  - Present your research to Biomedical and Molecular Sciences graduate students and faculty.
  - Complete and defend your Master's research thesis.

- Maximize research impact:
  - Consider publishing elements of your research. Learn from the Expanding Horizons Publishing workshop.
  - Attend a major conference in your field. There are many to choose from, so talk to your supervisor for advice on which ones would be most relevant.
  - Consider putting an article in The Conversation.

- Build skills and experience:
  - 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.
  - Check out opportunities for extra training through CTL, Expanding Horizons, Mitacs, or other sources to boost your skills.
  - Investigate internships from Mitacs and other sources.

- Engage with your community:
  - Do some targeted networking with people working in careers of interest, through Queen'sConnects on LinkedIn, the Queen's Alumni Association, professional associations, and at conferences. Get help from a Career Services workshop.
  - Consider joining one of the many professional associations related to biomedical & molecular sciences, such as the Canadian Society for Molecular Biosciences (CSMB).
  - Attend a conference in your field, such as the International Conference on Bioinformatics and Biomedical Science (ICBBS).

- Launch your career:
  - 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.

**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, critically 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 Biomedical & Molecular Sciences can take your career 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:
- 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 a smooth transition to the world of work after graduation.
Application FAQs

What do I need to know to APPLY?

ACADEMIC REQUIREMENTS
- Recognized honours degree with a background in Biology or Health Sciences or equivalent professional degrees (eg. BN.Sc., B.Sc., P.T.).
- Grade requirements: B+ (77-79.9%) in the second, third and fourth years of an Honours Bachelor’s degree.

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?

Master’s students in Biomedical and Molecular Sciences are offered a minimum funding of $19,000 per year. As part of the minimum funding package, you may serve as a Teaching Assistant for at least one term per year.

Apply for external funding from OGS, CIHR/NSERC and other sources. Queen’s will automatically issue a $5,000 top-up to Master’s winners of federal government tri-council awards. See the School of Graduate Studies’ information on awards and scholarships for more.