Why GRADUATE STUDIES in CHEMISTRY?

A degree from Queen's Department of Chemistry is highly regarded and an important consideration in today’s competitive science and technology job market. Our $56 million state of the art building is home to the Nuclear Magnetic Resonance facility and its eight high-field instruments, an on-site Mass Spec facility with four mass spectrometers, an X-ray diffractometer, a CFI-funded facility for materials characterization and more unique equipment in faculty labs.

Why QUEEN'S?

Queen's University and the Department of Chemistry enjoy international reputations. With 27 award-winning faculty, and over 130 graduate students, post-doctoral fellows and research associates performing cutting-edge research in a multitude of areas, you will find this an exciting place to do research. Research is performed in the areas of analytical, inorganic, organic, physical, polymer, and theoretical chemistry. Research in these areas ranges from the most fundamental to very applied.

“My years at Queen's have left me with nothing but good memories. It was a great experience, a great city and a great education. It was a solid foundation to launch a career.”

– Will N. Rogers, PhD

Program STRUCTURE

PhD (4 years): course work, research thesis, comprehensive oral exam, and research seminar.

RESEARCH Areas

- Analytical/Environmental
- Biological
- Inorganic/Organometallic
- Materials/Polymer
- Organic
- Physical
- Theoretical/Computational

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

Visit the Chemistry 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 him/her and tell them about your interest in graduate work and related experience. This is also an opportunity for you to find out if the faculty member is accepting new graduate students to supervise.
ACHIEVE YOUR ACADEMIC GOALS

• Key priorities include forming your committee and coursework.
• 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 a variety of supports.
• Complete WHMIS safety training.

YEAR I

• Complete the Annual Research Progress Report (1/3) and meet with supervisory committee.
• Write your PhD candidacy exam and defend your thesis proposal.
• Submit 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 Expanding Horizons.

YEAR II

• Attend or present at a graduate conference such as the Canadian Chemistry Conference and Exhibition.
• Expand your research audience through social media such as Twitter or a blog.
• Apply for the Graduate Dean’s Travel Grant for Doctoral Field Research.
• Conduct research at an International Collaborative University (i.e. Stuttgart, Nagoya, Potsdam).

YEAR III

• Continue to meet regularly with your supervisor, review research progress, and write your dissertation.
• Check out the SGS writing camps, such as Dissertation Boot Camp and Dissertation on the Lake.
• Use conference presentations to create, discuss, and explore ways to disseminate research findings. Learn from the Expanding Horizons publishing workshop.
• Begin discussion of potential thesis defence examiners.
• Complete the Annual Research Progress Report (2/3).

YEAR IV & TRANSITIONING

• Plan date of thesis submission for examination.
• Present your research to graduate students and faculty 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 (3/3).

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.

BUILD SKILLS AND EXPERIENCE

• Serve on departmental, faculty or university committees.
• Consider positions in student services, the SGS, or media outlets like the Queen’s Journal, CFCR, and the SGS 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 Science Restoration.
• Take part in events put on by the Queen’s Chemistry Innovation Council, Let’s Talk Science, or Women in Science & Engineering (WISE).
• Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups.
• Consider becoming an executive member of the Queen’s Graduate Chemistry society.

LAUNCH YOUR CAREER

• Finding career fit starts with knowing yourself. Take a Career Services workshop or meet with a career counsellor for help. Check out books like So What Are You Going to Do With That? as 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 School of Graduate Studies Career Week to explore your career pathways.
• Complete the My Grad Map online.
• Complete the My Grad Map online.

WHAT WILL I LEARN?

A graduate degree in Chemistry can equip you with:
• Knowledge and Technical Skills
  • Chemical synthesis
  • Spectroscopic characterization
  • 3D printing/rapid prototyping
  • Mass spectrometry analysis
  • Experimental design
  • Molecular modelling
• Communications
  • Manuscript writing
  • Conference oral presentation
  • Poster presentation (graphic)
• Creativity and Innovation
  • Scientific patent writing/patent protection
  • Business skills in chemical industry
• Leadership and Collaboration
  • Grant writing, problem solving
• Professional Development
  • Leadership and Collaboration Committee participation
  • Supervision of junior researchers
  • Industry engagement
  • Research with international experts/partners

WHERE CAN I GO?

A PhD in Chemistry can take your career in many directions. In Canada, less than 40% of PhDs will work in post-secondary education – the majority will work in industry, government, or non-profits.

• Quality Control Chemist
• Postdoctoral Fellowship
• Forensic Scientist
• Environmental Law
• Patent Law
• Food Scientist
• Biochemist
• Consumer Protection
• Pharmaceutical Chemist
• Materials Scientist
• Petroleum Engineer
• Chemical Education (University, College, Secondary/Primary)
• Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

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

2021-2022
Chemistry PhD Map

© Career Services, Queen’s University, 2021-2022

*This map is intended to provide suggestions for activities and careers, but everyone’s abilities, experiences, and constraints are different. Build your own Grad Map using our online My Grad Map tool.

WHAT WILL I LEARN?

A graduate degree in Chemistry can equip you with:

• Knowledge and Technical Skills
  • Chemical synthesis
  • Spectroscopic characterization
  • 3D printing/rapid prototyping
  • Mass spectrometry analysis
  • Experimental design
  • Molecular modelling
• Communications
  • Manuscript writing
  • Conference oral presentation
  • Poster presentation (graphic)
• Creativity and Innovation
  • Scientific patent writing/patent protection
  • Business skills in chemical industry
• Leadership and Collaboration
  • Grant writing, problem solving
• Professional Development
  • Leadership and Collaboration Committee participation
  • Supervision of junior researchers
  • Industry engagement
  • Research with international experts/partners

WHERE CAN I GO?

A PhD in Chemistry can take your career in many directions. In Canada, less than 40% of PhDs will work in post-secondary education – the majority will work in industry, government, or non-profits.

• Quality Control Chemist
• Postdoctoral Fellowship
• Forensic Scientist
• Environmental Law
• Patent Law
• Food Scientist
• Biochemist
• Consumer Protection
• Pharmaceutical Chemist
• Materials Scientist
• Petroleum Engineer
• Chemical Education (University, College, Secondary/Primary)
• Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

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

2021-2022
Chemistry PhD Map

© Career Services, Queen’s University, 2021-2022

*This map is intended to provide suggestions for activities and careers, but everyone’s abilities, experiences, and constraints are different. Build your own Grad Map using our online My Grad Map tool.
Application FAQs

What do I need to know to APPLY?

ACADEMIC REQUIREMENTS
- MSc in Chemistry of equivalent, or direct entry from BSc for exceptional candidates with extensive research experience.
- **Grade requirements:** minimum upper second class standing (B+ average).

ADDITIONAL REQUIREMENTS
- Two official transcripts for all post-secondary studies.
- Two letters of recommendation (academic)
- Curriculum Vitae
- Correspond with potential supervisors
- 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 for International applicants; Flexible deadline for Domestic applicants.
- **Notification of acceptance:** Domestic students are notified on an ongoing basis as their applications are reviewed. International students are notified at the end of March.

Before you start your application, please review the [Graduate studies application process](#).

What about FUNDING?

The minimum funding guarantee for Chemistry PhD students is $27,060 per year, throughout years 1-4. The funding package may be comprised of graduate awards, research fellowships, and research and/or teaching assistantships. Many students are awarded scholarships and awards, which allow them to exceed this level of income.

We encourage all students to apply for external funding from OGS, NSERC 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’ information on [awards and scholarships](#).