



# Chemistry Ph.D. Map

*Navigating Graduate Studies and Beyond*

GRAD MAP FOR PH.D. STUDENTS

## How do I USE THIS MAP?

Whether you are considering or have embarked on graduate studies at Queen's, use this map to plan for success in five overlapping areas of your career and academic life. The map helps you explore possibilities, set goals and track your individual accomplishments. Everyone's journey is different – the guide offers options for finding your way at Queen's and setting the foundation for your future. To make your own customized map, use the online [My Grad Map](#) tool.

## 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 new \$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?

*"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

Queen's University and the Department of Chemistry enjoy international reputations. With 25 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.

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.

## Why KINGSTON?

Described by students as both "quaint" and "eclectic," Kingston is big enough to provide all the conveniences of modern life, and small enough for students, staff, and faculty to feel instantly comfortable and at home.

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.

## Program STRUCTURE

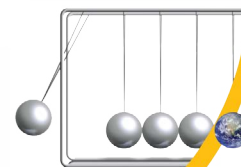
PhD (4 years): course work, research thesis, comprehensive oral exam, and research seminar.



## RESEARCH Areas

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

School of  
Graduate  
Studies  
Create an impact  
[www.queensu.ca/sgs](http://www.queensu.ca/sgs)



# Chemistry PH.D. MAP

DOCTOR OF PHILOSOPHY (PH.D.)

Queen's  
175  
YEARS

## YEAR I

## YEAR II

## YEAR III

## YEAR IV & TRANSITIONING

### ACHIEVE YOUR ACADEMIC GOALS

- Key priorities include your relationship with your supervisor, forming your committee, coursework, field exams, and language exam.
- Look to [Student Academic Success Services](#) for a variety of supports.
- Complete WHMIS safety training.

- Write and defend your thesis proposal.
- Embark on your substantive research.
- Find your way through the academic process with the help of [Expanding Horizons](#).
- Attend or present at a graduate conference such as [Canadian Chemistry Conference and Exhibition](#).

- Continue to research and write your dissertation. Check out the SGS [Dissertation Boot Camp](#) or [Dissertation on the Lake](#).
- Consider publishing elements of your research. Learn from the Expanding Horizons [Publishing workshop](#).
- Complete the Annual Research Progress Report (1 of 2)

- Complete and defend your dissertation.
- Continue to pursue publication options for your research.
- Complete the Annual Research Progress Report (2 of 2)

### 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 NSERC, OGS, and [other funding](#).
- Attend conferences in your field.

- Attend or present at a graduate conference such as [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](#).

- 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. 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.

### BUILD SKILLS AND EXPERIENCE

- Serve on departmental, faculty or university committees. Talk to the [Queen's Graduate Chemistry Society](#) about getting involved.
- Consider positions in student services, the [SGPS](#), or media outlets like the [Queen's Journal](#), [CFRC](#), [QTV](#) and the [SGS 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 community.
- Start keeping an eportfolio of your skills, experiences and competencies.
- 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.

- Begin teaching as a departmental Teaching Fellow.
- Find opportunities for extra training through CTL, Expanding Horizons, Mitacs, or other sources to boost your skills. Investigate internships from [Mitacs](#) and [other sources](#).
- Prepare for work or studies in a multi-cultural environment by taking [QUIC's Intercultural Competency Certificate](#).

- Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews. Get help with the [Skills and Experience workshop](#).
- Take advantage of the state-of-the-art research facilities, which feature NMR, mass spectrometry, X-ray diffractometer, a laser lab, and more.

### ENGAGE WITH YOUR COMMUNITY

- Consider volunteering with different community organizations such as Science Rendezvous.
- Take part in events put on by the [Queen's Chemistry Innovation Council](#).

- Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups like [Material Matters](#).

- Do some targeted networking with people working in careers of interest, through [QueensConnects](#) on LinkedIn, the [Queen's Alumni Association](#), professional associations, and at conferences. Check out Career Services' [networking workshops](#).

- Consider joining professional associations like the [Canadian Society for Chemistry](#).
- Join groups on LinkedIn reflecting specific careers or topics of interest.

### LAUNCH YOUR CAREER

- Finding career fit starts with knowing yourself. Take the [Career Services Career Planning workshop](#) or meet with a career counsellor for help. Check out books like *So What Are You Going to do With That?* 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 Week](#) to explore your career pathways.

- Start building your teaching portfolio including student evaluations, and seeking mentorship.
- Explore different careers of interest by reading [alumni profiles](#) on the SGS website, and using [QueensConnects](#) on LinkedIn to connect with Queen's alumni, or find alumni in various careers through "Ask an Alum". For more information check out [Career Cruising](#).
- Investigate requirements for professional positions 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 resume for potential positions of interest.
- Check out the free online modules at [MyGradSkills](#) to help you plan your career.

- 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, or 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](#).

### EMPLOYABILITY SKILLS

**Knowledge and technical skills** in area of specialization

**Communication:** effective and clear in written, oral and multimedia forms, for diverse audiences

**Information management:** prioritize, organize and synthesize large amounts of information

**Time management:** meet deadlines and responsibilities despite competing demands

**Project management:** develop ideas, gather information, analyze, critically appraise findings, draw and act on conclusions

**Creativity and innovation** to address complex, multifaceted challenges

**Perseverance** to work through challenges to achieve desired outcome

**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 discussions

# Ph.D. Map FAQs

## What do I need to know to apply?

### ACADEMIC REQUIREMENTS

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

### ADDITIONAL REQUIREMENTS

- If English is not a native language, prospective students must meet the [TOEFL requirements](#) in writing, speaking, reading, and listening.

### KEY DATES & DEADLINES

- **Application deadline:** March 1st to be considered for awards. Later applications are accepted. It is encouraged that international students apply early.
- **Notification of acceptance:** Accepted students are notified as the applications are reviewed.

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

## How do I find a supervisor?

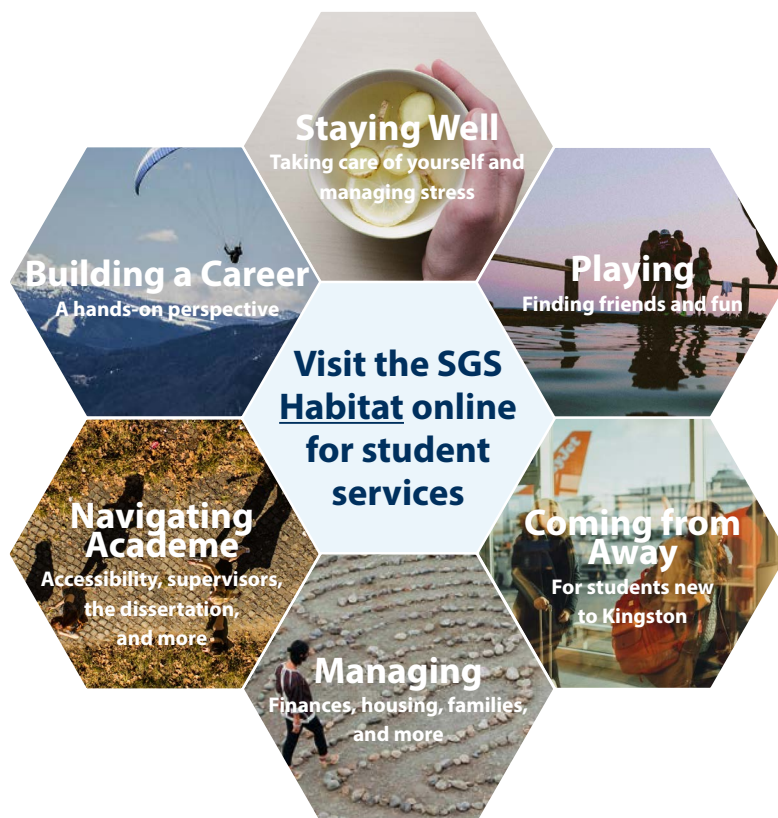
We encourage you to identify an area of research interest and contact a potential supervisor before applying.

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.

## What about funding?

The minimum funding guarantee for Chemistry PhD students is \$23,000 per year, throughout years 1-4. The funding package may be comprised of graduate awards, research assistantships, and teaching assistantships.

We encourage all students to apply for external funding from OGS, NSERC and other sources. Queen's will automatically issue a \$10,000 award to winners of federal government tri-council awards for PhD studies. For more information, see the School of Graduate Studies' information on [awards and scholarships](#).

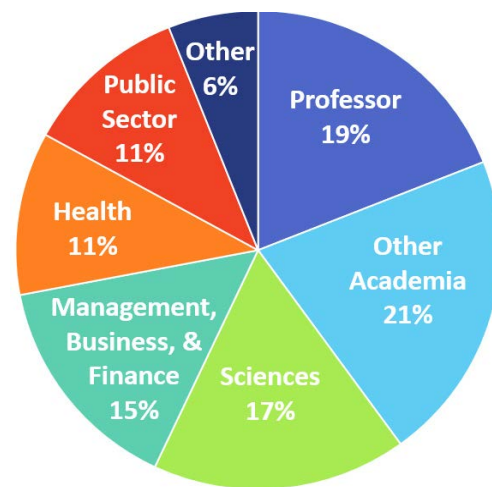


# Where Can a Graduate Degree Take Me?

A PhD in Chemistry 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.

- Research chemist
- Research engineer
- Scientist
- Technical leader
- ICP Analyst
- Professor

Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.



## Ph.D. Career Outcomes in Canada

*Edge, Jessica, and Daniel Munro. Inside and Outside the Academy: Valuing and Preparing PhDs for Careers. Ottawa: The Conference Board of Canada, 2015.*

**Queen's**  
UNIVERSITY

DEPARTMENT OF  
CHEMISTRY

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