Why GRADUATE STUDIES in GEOLOGICAL SCIENCES?

Geoscientists and geological engineers interpret the natural world. They bring methods such as geophysics, geochemistry, geobiology and field geology together to understand the modern and ancient Earth. Clues concealed in rocks and minerals, fluids and fossils, mountains and sediments, glaciers and volcanoes are marshaled to understand and explain the Earth system at all scales. Managing water, mineral and energy resources, designing sustainable strategies for infrastructure and industrial growth, and coping with natural and anthropogenic hazards facing increasing global populations, including climate change, all depend on a deep understanding of natural processes.

“Deciding to pursue a PhD in geology at Queen’s has allowed me to conduct original and exciting research, interact with knowledgeable and supportive faculty on a daily basis and form meaningful and long-lasting friendships with other graduate students. It has been a truly rewarding experience.”

– Chris Schuh, PhD

Why QUEEN’S?

As a PhD student in Geological Science you are part of one of the most research intensive universities in Canada. Our research program is internationally renowned with a wide range of research activities in all the major specialization areas in geological science.

Students are able to work in first-rate facilities with world-renowned scientists and research engineers, and have opportunities to collaborate with industrial leaders and engage in extensive fieldwork on six continents, making our program truly a world-class experience. Students can also collaborate with other departments at Queen’s, including Mining, Environmental Studies, Chemistry and Biology as well as other institutions like RMC.

Program STRUCTURE

PhD (4 years): Thesis. The department has no minimum formal course requirement (beyond the MSc program requirements).

RESEARCH Areas

- Economic Geology & Mineral Exploration
- Petrology & Structural Geology
- Sedimentology, Sedimentary Geochemistry & Paleobiology
- Geophysics and Geochronology
- Applied Geoenvironmental Sciences & Geotechnique

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

Visit the Geological Sciences 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.
**Geological Sciences PhD Map**

**DOCTOR OF PHILOSOPHY (PhD)**

### WHAT WILL I LEARN?

A graduate degree in Geological 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 PhD in Geological Sciences 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.

Graduates from the Geological Sciences PhD program have found careers in:
- Academia and research
- Mineral and oil exploration
- Mining and hydrocarbon extraction
- Policy analysis
- Surface and underground construction
- Environment assessment
- Protection and rehabilitation
- Resource management
- 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?

**YEAR I**

**ACHEIVE YOUR ACADEMIC GOALS**

- Key priorities include your relationship with your supervisor, forming your committee, coursework, field exams, and language exam.
- 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.

**MAXIMIZE RESEARCH IMPACT**

- Think about audiences for your research.
- Complete CORE online module on research ethics if doing research with living people or sensitive topics.
- Apply to SSIRC, OGS, and other funding.
- Attend conferences in your field.

**BUILD SKILLS AND EXPERIENCE**

- Serve on departmental, faculty or university committees. Talk to the Joliffe Club (graduate student society) for tips on getting involved.
- Consider positions in student services, the SGPS, or media outlets like the Queen’s Journal, CFRC, 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 local community organizations, such as Martha’s Table, or Loving Spoonful.
- Connect to broader communities of engineers by joining an Engineering Society Design Team.

**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? 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.

- Key priorities include completing your comprehensive examination and pursuing substantive research.
- Write and defend your thesis proposal.
- Find your way through the academic process with the help of the Expanding Horizons and the SGS Habitat.
- Set up regular meetings with your supervisor to discuss progress and obstacles to timely completion.
- Seek experiential/professional development opportunities.

**YEAR II**

**ACHEIVE YOUR ACADEMIC GOALS**

- Priorities include completing your comprehensive examination and pursuing substantive research.
- Write and defend your thesis proposal.
- Find your way through the academic process with the help of the Expanding Horizons and the SGS Habitat.
- Set up regular meetings with your supervisor to discuss progress and obstacles to timely completion.
- Seek experiential/professional development opportunities.

**MAXIMIZE RESEARCH IMPACT**

- Attend or present at a conference graduate.
- Expand your research audience through social media such as Twitter or a blog.
- Apply for the Graduate Student Travel Grant for Doctoral Field Research.

**BUILD SKILLS AND EXPERIENCE**

- Hone skills for non-academic employment by continuing involvement on committees and in community.
- Start keeping up-to-date skills, experiences, and competencies.
- For help with teaching, get support from the Centre for Teaching Learning. Enroll in SGSSG or the PSTL 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.

**LAUNCH YOUR CAREER**

- 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 Queen’s Connects on LinkedIn to connect with Queen’s alumni, or find alumni in various careers through Ask an Alumni. For more information check out Career Counselling.
- Investigate requirements for professional positions or other opportunities related to careers of interest.

- Priorities include completing your comprehensive examination and pursuing substantive research.
- Write and defend your thesis proposal.
- Find your way through the academic process with the help of the Expanding Horizons and the SGS Habitat.
- Set up regular meetings with your supervisor to discuss progress and obstacles to timely completion.
- Seek experiential/professional development opportunities.

**YEAR III**

**ACHEIVE YOUR ACADEMIC GOALS**

- 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 Expanding Horizons Publishing Workshop.
- Begin discussion of potential thesis defence examiners.

**MAXIMIZE RESEARCH IMPACT**

- 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.

**BUILD SKILLS AND EXPERIENCE**

- 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 the Intercultural Awareness Training Certificate hosted by QUCF and FDISC.

**ENGAGE WITH YOUR COMMUNITY**

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

**LAUNCH YOUR CAREER**

- 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.

- Plan date of thesis submission for examination.
- Present your research at conferences and work with your supervisor to prepare for defence.
- Review submission and examination guidelines.
- Secure necessary oral defence accommodations.
- Discuss career pathways, reference letters, and publication options with your supervisor.

- Continue to attend conferences and connect with scholars in your field and with community partners such as the International Conference on Geology and Geoscience.
- Continue public outreach through social media and the Queen’s Media Centre.

**YEAR IV & TRANSITIONING**

**ACHEIVE YOUR ACADEMIC GOALS**

- Priorities include completing your comprehensive examination and pursuing substantive research.
- Write and defend your thesis proposal.
- Find your way through the academic process with the help of the Expanding Horizons and the SGS Habitat.
- Set up regular meetings with your supervisor to discuss progress and obstacles to timely completion.
- Seek experiential/professional development opportunities.

**MAXIMIZE RESEARCH IMPACT**

- 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.

**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.
- Continue to attend conferences and connect with scholars in your field and with community partners such as the International Conference on Geology and Geoscience.
- Continue public outreach through social media and the Queen’s Media Centre.

**ENGAGE WITH YOUR COMMUNITY**

- Consider joining professional associations like the Geological Association of Canada.
- Join groups on LinkedIn reflecting specific areas or topics of interest.

**LAUNCH YOUR CAREER**

- Consider joining professional associations like the Geological Association of Canada.
- Join groups on LinkedIn reflecting specific areas or topics of interest.

- Plan date of thesis submission for examination.
- Present your research at conferences and work with your supervisor to prepare for defence.
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- Discuss career pathways, reference letters, and publication options with your supervisor.

**WHERE CAN I GO?**

**YEAR I**

- Environment assessment
- Research and application
- Leadership
- Professionalism
- Perseverance
- Effective communication

**YEAR II**

- Environment assessment
- Research and application
- Leadership
- Professionalism
- Perseverance
- Effective communication

**YEAR III**

- Environment assessment
- Research and application
- Leadership
- Professionalism
- Perseverance
- Effective communication

**YEAR IV & TRANSITIONING**

- Environment assessment
- Research and application
- Leadership
- Professionalism
- Perseverance
- Effective communication

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

* 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 Geological Sciences or Geological Engineering, Mining Engineering or Civil Engineering are acceptable.
- Grade requirements: minimum B average.

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 deadline: February 1 for September submissions.
- Notification of acceptance: 4 weeks after the full application has been received.

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

What about FUNDING?

The minimum funding guarantee for Geological Sciences PhD students is $23,000 per year for domestic students and $30,000 for international students throughout years 1-4. Research Assistantships are in consultation with the student’s supervisor.

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.