

Chemistry

Biological & Pharmaceutical Chemistry | Chemistry

Our Graduates – Where are they now?

Many graduates have pursued their passion for research and science by enrolling in graduate school, becoming university professors, forensic chemists or scientists, and creating environmental, pharmaceutical and household products.

Others have established **financially rewarding careers** as managers and executives in high-tech industries that drive today's economy.

Professional schools are also chosen after graduation, opening career paths in exciting fields such as medicine, dentistry, veterinary medicine, engineering, pharmacy, and law.

Our Grads at Work

- Family Physician
- President, Bruker Canada
- Product Manager, Mandel Scientific
- Process Chemist, Torcan Chemical
- President, Guelph Soap Company
- Member of Parliament, Government of Canada
- Forensic Scientist, Centre of Forensic Sciences, Government of Ontario

Related Areas of Study

The Physical Science major, a broad interdisciplinary approach, is also an option. You can combine courses in chemistry, computer science, physics, mathematics and statistics according to your individual interests and objectives. You can also personalize your degree further by adding a minor.

For other chemistry-related areas of study, check out our majors in Nanoscience, Chemical Physics and Toxicology.

Vittoria Fonte graduated with a B.Sc. degree in Biological Chemistry and is employed in pharmaceutical research and development as a Process Chemist for Torcan Chemical. When a potential new drug candidate is identified and a large quantity is required, Vittoria's job is to discover, design and develop a method for chemically synthesizing the compound. She considers the safety, environment and cost effectiveness of the synthesis process while trying to maximize the yield and improve the quality of the final product.



Vittoria chose to study chemistry at the University of Guelph because of the University's high ranking as an academic institution. She was also attracted to the campus as well as the City of Guelph.

Adrian Millman completed his B.Sc. degree in Biological Chemistry and is studying medicine at Queen's University. Adrian feels that the Chemistry Program at Guelph played a major role in his acceptance to medical school. It was flexible enough to give him a foundation in the basic medical sciences, and the level of support from professors and staff, for both academic and extracurricular issues, was unparalleled. The department offers many opportunities to get involved with research, teaching, and even social events.



Adrian chose Guelph because of its reputation for excellence in teaching, campus life, and food. After four years of learning, getting involved in various campus clubs and groups and eating, he can say that the reputation is well-deserved.

Anna Allen obtained her B. Sc. degree in Chemistry with a minor in Computing and Information Science, and then went on to complete her Masters of Science degree in Chemistry. She is currently pursuing her PhD in Organic Chemistry at Princeton University with a research focus on developing new methods in enantioselective organocatalysis.



Anna was attracted to the University of Guelph because of the flexibility within the science program to incorporate other areas of interest. She was also impressed by the emphasis in the chemistry program on lab skills, co-op and research opportunities. Anna feels that her education and experiences at Guelph provided a solid foundation for her current graduate studies.



From laptop batteries to life-enhancing drugs, today's modern products owe their existence to the keen, creative minds in chemistry laboratories around the world. Understanding the science of chemistry is just the beginning. Add to it the thrill of experimentation and infinite possibilities of leading-edge research. This is science at its most exciting.

Chemistry

Biological & Pharmaceutical Chemistry, B.Sc.

Chemistry, B.Sc.

Biological & Pharmaceutical Chemistry Exploring Life's Formulae

Available in both co-op and non-co-op, this new program provides the necessary theoretical and practical insights to acquire a thorough interdisciplinary understanding of material at the interfaces of chemistry, biology and pharmacology. It is a chemistry-based approach to the synthesis, analysis and investigation of biological and pharmaceutical structures in the context of biological function and pharmaceutical applications.

The flexibility of this program allows students to tailor their interests through a wide selection of elective courses. Areas of study include molecular modeling, synthesis, drug design, analytical techniques and vaccine chemistry. Students choosing an emphasis in the pharmaceutical industry can spend a semester at Seneca College in Toronto where their studies will include pharmaceutical analysis, biopharmaceuticals, product formulations and manufacturing.

Chemistry Crucible of Science and Imagination

Many challenges facing us today – from solar energy and the development of space-age materials, to the synthesis of new pharmaceutical products – require sophisticated chemical techniques. Related disciplines of physics, biology and mathematics are applied most inventively in the “central science” of chemistry. Knowledge of complex molecular structures and their potential chemical reformulations are highly desired in the technology-driven workplace, where chemists take leading roles in research, design and production. Our program provides up-to-date practical laboratory training, as well as opportunities to carry out exciting research projects with faculty members, or to participate in the co-op option.

\$144 million Science Complex is fostering interdisciplinary and integrative approaches to science, research and teaching.



The Guelph Factor

Personal Contact and Support The University of Guelph strongly believes in the personal approach to education.

- **Faculty** are always eager to discuss course materials one-on-one.
- **Help Centres** staffed by Faculty and Teaching Assistants are available to assist students with course and lab materials.
- **Small laboratory and seminar classes** provide a unique learning experience, enhanced by pioneering web-based teaching and evaluation.
- Fourth-year students may have the opportunity to be **Teaching Assistants** or assist in the preparation of first and second-year labs.

“The Department of Chemistry is full of helpful faculty members and graduate students, who are always there to help both in the classroom and the laboratory, making it a fantastic environment to learn.”

Keegan Rankin, Chemistry major & Graduate Student

Hands-on Learning The University of Guelph is committed to applied learning in the sciences. Your first year will include many “hands-on” laboratory sessions. You can look forward to learning in the analytical instrumental laboratories (with instrumentation used in modern analytical, forensic and pharmaceutical labs) and exploring molecular structures with the undergraduate Nuclear Magnetic Resonance (NMR) spectrometer.

Distinguished, Award-Winning Faculty

Our teachers and researchers include recipients of provincial, national and international awards including the prestigious 3M Teaching Award, a Canada Research Chair, Ontario Confederation of University Faculty Associations (OCUFA) Awards and Premier’s Research Excellence Awards.

Exciting Research Opportunities

Your studies at the University of Guelph will bring you into close contact with internationally recognized scientists. Students are encouraged to become involved in ongoing, active faculty research. Our summer students have published research papers and some have appeared in prestigious international journals such as the Canadian Journal of Chemistry, Journal of the American Chemical Society, Journal of Physical Chemistry and Chemical Communications.



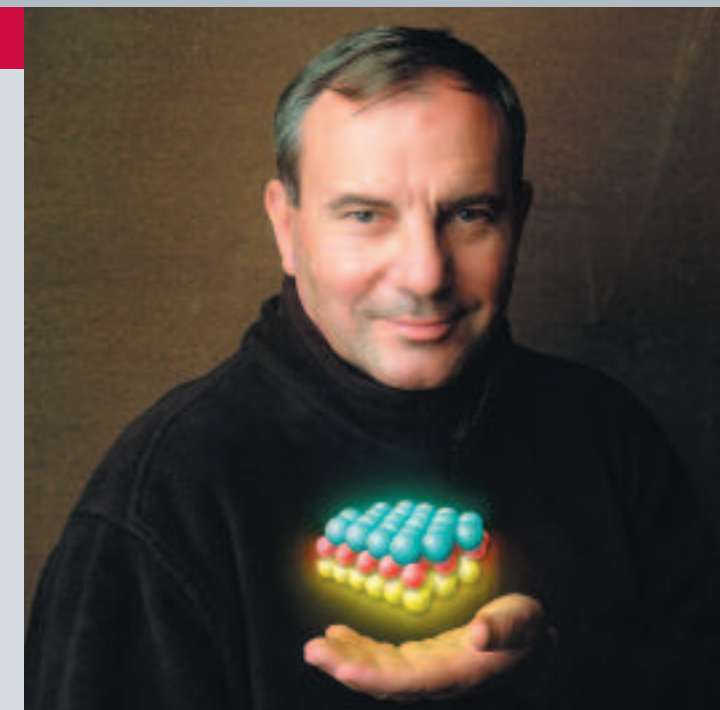
Chemistry major Allison Boudreau, on her co-op work employment at Crompton Co CIE Research Laboratories in Guelph. Allison is undertaking organic synthesis and purification using Thin Layer Chromatography Plates.

Flexibility to Plan Your Degree Program, and More

- **Majors.** Uncertain about which major is best for you? Not to worry. Your first year in biology, chemistry, mathematics and physics provides a foundation from which any science major can be chosen. You may switch majors after first year.
- **Co-op** study option, “earn as you learn” and gain valuable hands-on real world experience that will complement your academics.
- **Minors.** Choose a minor to complement your major or satisfy a personal interest. Minors as diverse as Spanish, music, computing and economics are currently being pursued by our students.

“You have the freedom to plan your own program by doing research and projects, taking summer courses and graduating earlier.”

Gavin Tsui, Chemistry major



Professor Jacek Lipkowski is a fellow of the Royal Society of Canada and holds the Canada Research Chair in Electrochemistry among other prestigious awards. He is working on the study of corrosion of metals, which is, according to Dr. Lipkowski, “one of our most important economic and technological challenges.”

Co-operative Education

Our co-op programs enjoy greater success each year, placing our students in work term assignments with companies such as Dofasco Inc. and Merck-Frosst in Montreal, and McNeil Consumer Healthcare in Guelph.

Students in co-op complete four work terms. The following outlines the academic semester and co-op work term sequencing:

Biological & Pharmaceutical Chemistry

	Fall	Winter	Summer
YEAR 1	Academic	Academic	Off
YEAR 2	Academic	Work Term 1	Academic
YEAR 3	Academic	* Academic	Work Term 2
YEAR 4	Work Term 3	Academic	Work Term 4
YEAR 5	Academic		

* Semester 6 academic at Guelph campus or Seneca College

Chemistry

	Fall	Winter	Summer
YEAR 1	Academic	Academic	Off
YEAR 2	Academic	Work Term 1	Academic
YEAR 3	Academic	Work Term 2	Academic
YEAR 4	Work Term 3	Academic	Work Term 4
YEAR 5	Academic		

“Co-op is an amazing opportunity to increase scientific and laboratory skills for the job market, to be able to create professional résumés and to obtain invaluable interview experience.”

Paul Le Marquand, Chemistry (co-op) major