THE PROGRAM

The Department of Chemistry and Biochemistry offers Bachelor of Science (B.S.) degrees in chemistry (61-62 credits) and biochemistry (69-72 credits) and a Bachelor of Arts (B.A.) degree in chemistry (53 credits).

There are two different options available for the B.S. degrees. The American Chemical Society (ACS)-approved B.S. option requires a senior research thesis as a capstone experience. Alternatively, students can complete a senior literature review for a B.S. degree that does not include a thesis. The B.S. degrees with thesis options are recommended for students aspiring to earn graduate degrees in chemistry, biochemistry, or related disciplines.

A B.A. degree is offered for those students seeking a strong background in chemistry, but with less specialization than the B.S. programs. The B.A. in chemistry (53 credits) allows students to complete a variety of elective courses in other disciplines and is popular among students pursuing careers in the health sciences, as well as those planning careers as chemistry teachers. A 33-37 credit minor in chemistry is also offered.

For students interested in environmental science, the Department recommends a B.A. degree in chemistry combined with a major or minor in environmental studies and supporting courses in biology and civil engineering. While Gonzaga does not offer a program in chemical engineering, students can combine a B.S. in chemistry with supporting engineering courses, followed by an M.S. or Ph.D. degree in chemical engineering from a post-graduate institution.

As empirical sciences, chemistry and biochemistry require extensive laboratory experimentation. Thus, most of Gonzaga’s chemistry and biochemistry courses have both a lecture and laboratory component. Knowledgeable and dedicated faculty teach all courses. The program is built on a strong laboratory curriculum, student-centered faculty, high academic standards, and modern equipment for teaching and research.

Department faculty members strongly encourage students to conduct research. Seniors pursuing an ACS-approved degree complete an extensive undergraduate thesis. Students have full use of the Department’s most advanced equipment, including various spectrometers (nuclear magnetic resonance, mass, infrared, fluorescence, ultraviolet/visible, inductively-coupled plasma, circular dichroism, and atomic) and gas and liquid chromatographs.

Challenging coursework, dedicated faculty members, and small classes encourage students to explore all aspects of chemistry. Developing strong oral and written communication skills is a key objective of the program. The Department hosts a weekly seminar series that invites academic and industrial speakers to campus throughout the year; students participate as well, presenting research and literature seminars in their senior year. Many students also develop communication skills by working as teaching assistants in our laboratory classes.

An active internship program with a full-time director provides additional research and industrial opportunities for students. The Department operates an 11-week summer research program in which students can work closely with Gonzaga faculty and gain research experience while earning a competitive stipend or academic credit. Many students are members of Student Affiliates of the American Chemical Society (SAACS) and participate in local outreach activities, grade-school demonstrations, and field trips to regional science facilities. All of these activities accelerate students’ professional development by helping them develop, refine, and focus their career goals.

THE PASSION

Chemists study the material world and its transformations through insight and experimentation. The study of chemistry reveals how the behavior of atoms and molecules can explain the properties and processes of matter, including living systems. As members of the most interdisciplinary science, chemists are employed in a wide range of industries. Chemistry and biochemistry play a vital role in addressing many issues in society, such as developing alternative sources of energy or new materials that have applications for national security, health care, environmental remediation, and many other areas.

Chemists study the material world and its transformations through insight and experimentation. The study of chemistry reveals how the behavior of atoms and molecules can explain the properties and processes of matter, including living systems. As members of the most interdisciplinary science, chemists are employed in a wide range of industries. Chemistry and biochemistry play a vital role in addressing many issues in society, such as developing alternative sources of energy or new materials that have applications for national security, health care, environmental remediation, and many other areas.
OUTCOMES

Gonzaga chemistry and biochemistry graduates pursue careers in a wide variety of fields requiring strong backgrounds in science, problem-solving, and analysis. Recent graduates have taken jobs, for example, in actuary work, chemical sales, pharmaceutical research and development, medical technology, and teaching. Our graduates are also involved in service positions with the Jesuit Volunteer Corps and AmeriCorps. Approximately 60% of all Gonzaga chemistry and biochemistry graduates go on to graduate study, including medical, dental, veterinary, pharmacy, physician assistant, and even law school. (See more information about graduate schools and employers of Gonzaga chemistry and biochemistry graduates at the top of the next page.)

THE PEOPLE

Faculty members are committed to their students, providing knowledgeable guidance, clear instruction, and enthusiasm for their subject. They hold regular office hours and serve as advisors and mentors, providing knowledgeable guidance, clear instruction, and enthusiasm for their subject. They hold regular office hours and serve as advisors and mentors, providing knowledgeable guidance, clear instruction, and enthusiasm for their subject. They hold regular office hours and serve as advisors and mentors, providing knowledgeable guidance, clear instruction, and enthusiasm for their subject. They hold regular office hours and serve as advisors and mentors, providing knowledgeable guidance, clear instruction, and enthusiasm for their subject. They hold regular office hours and serve as advisors and mentors, providing knowledgeable guidance, clear instruction, and enthusiasm for their subject. They hold regular office hours and serve as advisors and mentors, providing knowledgeable guidance, clear instruction, and enthusiasm for their subject. They hold regular office hours and serve as advisors and mentors, providing knowledgeable guidance, clear instruction, and enthusiasm for their subject. They hold regular office hours and serve as advisors and mentors.

SAMPLES OF FACULTY & STUDENT RESEARCH


**FACULTY CONTACTS AND SPECIALITIES**

David A. Cleary | Ph.D., University of Michigan | Professor | physical and materials chemistry | cleary@gonzaga.edu

Matthew E. Cremeens | Ph.D., Cornell University | Associate Professor | organic and biophysical chemistry | creemens@gonzaga.edu

Jeff Cronk | Ph.D., University of California, Berkeley | Associate Professor | biochemistry | cronk@gonzaga.edu

Gemma D’Ambruoso | Ph.D., University of Arizona | Lecturer | organic chemistry | dambruoso@gonzaga.edu

Gergely Gidofalvi | Ph.D., University of Chicago | Assistant Professor | computational chemistry and electronic structure | gidofalvi@gonzaga.edu

Katherine Hoffmann | Ph.D., Oregon Health & Science University | Assistant Professor | biochemistry | hoffmann@gonzaga.edu

Eric Ross | Ph.D., University of Arizona | Associate Professor | analytical development and application of nanoporous materials | rosse@gonzaga.edu

Jennifer N. Shepherd | Ph.D., University of California, Los Angeles | Dept. Chair | Professor | organic synthesis with applications in quinone biosynthesis, anaerobic energy metabolism and drug design | shepherd@gonzaga.edu

Sarah Siegel | Ph.D., The Scripps Research Institute | Lecturer | biophysical chemistry | siegel@gonzaga.edu

Joanne Smieja | Ph.D., University of Minnesota | Professor | environmental applications of inorganic chemistry | smieja@gonzaga.edu

Stephen Warren | Ph.D., State University of New York at Buffalo | Assistant Professor | medicinal, bioorganic, and organic chemistry | warren@gonzaga.edu

Jeff Watson | Ph.D., Purdue University | Assistant Professor | biochemistry with emphasis on enzyme structure-function relationships and protein dynamics | watsonj@gonzaga.edu

**EMERITUS FACULTY**

Dennis Kelsh | Ph.D., Iowa State University | Professor Emeritus | kelsh@barney.gonzaga.edu

Dennis McMinn | Ph.D., University of Minnesota | Professor Emeritus | mcminn@gonzaga.edu

Kay Nakamaye | Ph.D., University of California, Berkeley | Professor Emeritus | nakamaye@gonzaga.edu

**GRADUATE SCHOOL**

**Chemistry**
- Mayo Graduate School
- Northwestern University
- Oregon Health & Science University
- Oregon State University
- University of Arizona
- University of California, Berkeley
- University of California, Irvine
- University of California, San Diego
- University of Chicago
- University of Colorado, Boulder
- University of Illinois
- University of Oregon
- University of Utah
- University of Texas, Austin
- University of Washington

**Medical School**
- Creighton University
- Loyola University Chicago
- Northwestern University
- Tulane University
- University of Washington
- University of Wisconsin
- Vanderbilt University

**EMPLOYERS**
- Avista Laboratories
- Bend Research
- Brooks
- Gilead Sciences
- Jubilant HollisterStier
- Merck
- Metrical
- Publicity Providers Inc.
- Spokane School District #81
- Teach for America