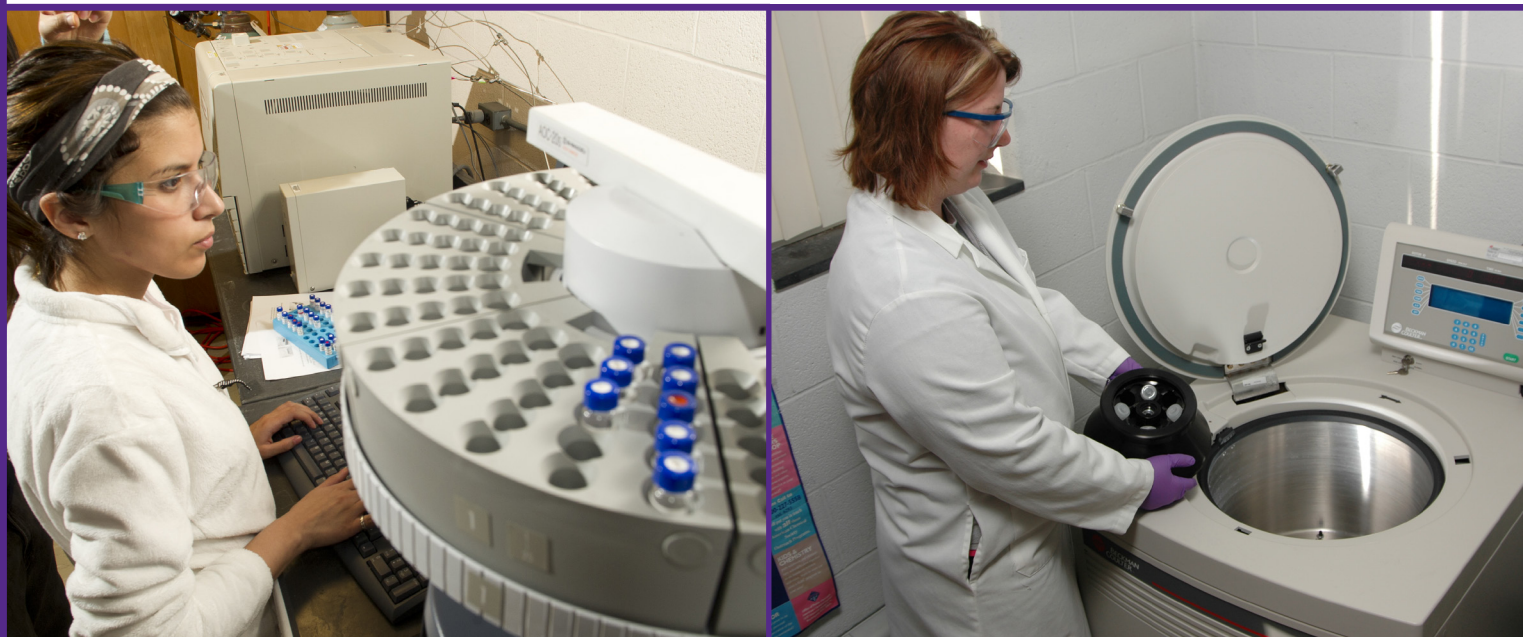


Biochemistry

Department of Chemistry, College of Arts and Sciences



Major Program

The WIU Department of Chemistry offers an option leading to the Bachelor of Science in Biochemistry. Biochemistry is the study of the chemistry of living systems. As such, it fits between the traditional fields of chemistry and biology, and biochemists must be well-trained in both fields.

Biochemistry includes the study of chemical processes involved in the formation and breakdown of substances which make up living systems, as well as the processes involved in movement, transmission of signals and reproduction of organisms. An understanding of biochemical processes has contributed to the production of new drugs and agricultural products using recombinant DNA technology.

Biochemistry is a unique branch of chemistry. It has seen enormous growth in the past 30 years with applications in biotechnology. Most biochemical knowledge has been generated by individuals who are still living. The study of biochemistry leads to an appreciation for the diversity of living systems, as well as the similarity of the metabolic processes occurring in those diverse organisms. Biochemical knowledge is also having a profound influence on areas as diverse as medicine and agriculture. As the mechanisms by which diseases destroy living systems are explained, new medical treatments can be developed. New varieties of plants are being produced that resist pests and can resist weed killers. New information is rapidly being transferred from the research laboratory to practical application.

The WIU Department of Chemistry is certified by the American Chemical Society (ACS) in the areas of chemistry and biochemistry. The ACS, with over 120,000 members, is the largest scientific society in the country. In addition to certification of undergraduate programs, it publishes many primary chemical journals such as "Chemical Abstracts." Of the country's 2,000 undergraduate chemistry programs, fewer than 500 meet ACS certification requirements.

Faculty

Courses in the department are taught by faculty holding doctoral degrees from distinguished universities around the world, such as the State University of New York, Kansas State University, Texas A&M University, Texas Tech University, University of Illinois, University of Victoria (Canada), University of Missouri, University of California–Davis, and University of Loyola. All faculty are dedicated educators, skilled in fostering active student participation. They are also active researchers and have to their credit many research publications and presentations in the areas of their specialties.

Integrated Baccalaureate and Master's Degree in Chemistry

The Integrated Baccalaureate and Master of Science in Chemistry provides an opportunity for outstanding undergraduate chemistry majors to complete both a Bachelor of Science and a Master of Science in Chemistry in a single five-year period.

Scholarships

The department offers many scholarships for chemistry majors. Four scholarships are named for the Maurice Peterson Foundation, and four are named for distinguished faculty in the department. The Norbert Goeckner Scholarship is awarded annually to a chemistry major (undergraduate or graduate), with preference given to a Burmese student (if there is no eligible Burmese student, the award will be open to all chemistry majors); the Dr. and Mrs. R. L. Hardin Scholarship is awarded to a junior chemistry major; the F. H. Currens Award is given to an outstanding senior chemistry major; and the Dr. Ben Hughes Scholarship is awarded

annually to a chemistry education major. The department also awards an Incoming Freshman Award to an entering freshman chemistry major and selects a department scholar from outstanding seniors in the department. Additional scholarships are available through the WIU Women in Science program and the Research Inspiring Student Excellence (RISE) program. Detailed information on scholarships is available from the department, (309) 298-1538; Western's Scholarship office, (309) 298-2001; or on the web at wiu.edu/chemistry or wiu.edu/Scholarship.

Honors in Chemistry

To be eligible for the Centennial Honors College, entering freshmen must have an ACT composite score of at least 28 OR have a 26 or 27 composite ACT and be in the top 15 percent of their graduating class OR have an ACT composite score of at least 24 and be in the top 10 percent of their high school graduating class. A comparable SAT score is acceptable. Transfer and current WIU students who wish to join the Honors College (including the Quad Cities Honors Program) must have a 3.4 grade point average on a 4.0 scale based on 12 or more semester hours. Honors credit is given for honors coursework completed at other accredited institutions. To find out more, visit wiu.edu/Honors.

General honors seminars in the humanities, sciences and social sciences provide students with opportunities to explore key academic issues with distinguished faculty members. In the chemistry department, honors students take courses for honors credits and, as seniors, prepare an honors thesis under the direction of a department faculty member.

Student Activities

For students interested in chemistry, the department offers the Chemistry Club, an association affiliated with the American Chemical Society.

Special Opportunities

The department offers small classes with accessible faculty and personalized advising in Currens Hall. The department offers electronic classrooms and numerous teaching/research laboratories, as well as a Physical Sciences Library that subscribes to more than 60 journals and online literature searching through the Chemical Abstract Service. Undergraduates have access to the department's state-of-the-art equipment and facilities, which are augmented by the existence of a graduate program. The modern instrumentation available for teaching and research includes a fluorometer, HPLC, FT-NMR, FT-IR, UV-Vis and GC-MS spectrometers; a capillary electrophoresis and a high-speed centrifuge.

Undergraduate Research Opportunities

There are many opportunities for students to work with WIU chemistry faculty on research projects that involve inorganic chemistry, organic chemistry, biochemistry, medicinal chemistry, forensic chemistry, analytical chemistry and environmental chemistry. In addition, there are research opportunities for students in physical and green chemistry, as well as with many other projects. Undergraduate students involved in research get to travel to professional conferences, meet professionals from around the country and serve as co-authors on journal article publications.

After College

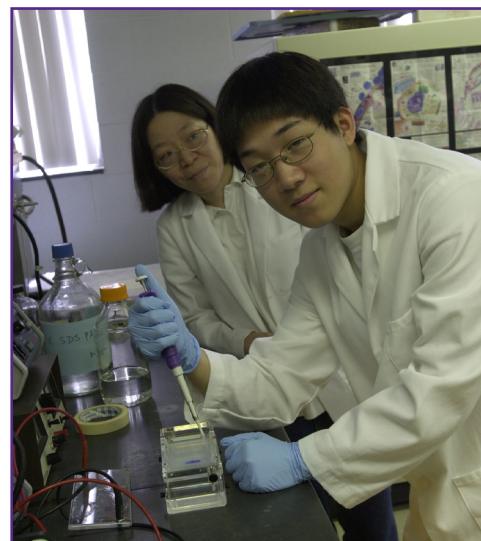
Individuals trained as biochemists have a variety of employment opportunities available. Those choosing not to pursue advanced training in graduate or medical school generally find employment working in an industrial, governmental or hospital laboratory setting. Industries hiring biochemists include, but are not limited to, pharmaceuticals, forensic laboratories, foods and the emerging biotechnology industry. Most studies predict a shortage of chemists of all types, making job markets excellent for many years to come.

For More Information

The department welcomes visitors. Call the WIU Department of Chemistry at (309) 298-1538 or e-mail the advisor at JL-Sandrik@wiu.edu. Visit wiu.edu/chemistry.

For Your General Outlook

Required courses include General Chemistry I & II (8 SH); Chemical Calculations (2 SH); Organic Chemistry I & II (9 SH); Analytical Techniques (3 SH); Chemistry Literature (1 SH); Physical Chemistry (4 SH); Biochemistry (4 SH); Advanced Biochemistry (4 SH); Biochemistry of Human Diseases (4 SH); Safety Practices in Chemistry (1 SH); Senior Research (3 SH); Chemistry Safety (1 SH); Calculus I & II (9 SH); Physics (8 to 10 SH); a Biology minor (16 to 20 SH) and Computer Science (3 SH).



wiu.edu/chemistry

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