



CHEMISTRY

Chemistry is the science of change. By studying the fundamental properties of substances and the many transformations they undergo, the chemist finds solutions to scientific challenges and contributes to the development of new technologies. Discoveries in environmental protection, new products to benefit consumers, advances in health care — all are the work of chemists.

At Illinois Wesleyan, your chemistry program will begin with a series of introductory courses designed to give you an understanding of the fundamental principles of the field. Then you'll select classes in specialized areas of interest, such as analytical, inorganic, organic, physical, and biochemistry. If you choose, you may take the course work necessary for certification by the American Chemical Society (www.chemistry.org).

In addition, you'll benefit from our university-wide emphasis on the liberal arts. Writing and discussion play an important part in every class, and you will come to understand, not just memorize, the concepts you need to know. You'll also take courses from disciplines outside your major—English, foreign language, the fine arts—allowing you to develop the diverse array of interests necessary for professional and personal success.

LEARNING FROM A QUALITY FACULTY

Learning is enhanced at Illinois Wesleyan by the quality, individualized instruction you'll receive from our faculty. Our faculty will work closely with you, in and outside of class, in lab, and in collaborative research. The chemistry faculty are all professionally active and engaged in research with Illinois Wesleyan students. Our faculty, and their research interests, are:

► **Dr. Melinda Baur**, a biochemist whose interests include using Scanning Electrochemical Microscopy as a tool to study both development and release of neurotransmitters from model neurons. She has published in the *Journal of Molecular and Cellular Biology* and in the *Journal of Chemical Education*.

► **Dr. Brian Brennan**, a bio-organic chemist whose research interests include the development of small molecule, artificial transcription factors and the development of synthetic peptides and peptoids as potential therapies for sickle cell disease. He has published in the *Journal of the American Chemical Society* and the *Journal of Biological Chemistry*.

► **Dr. Jeff Frick**, whose research interests include synthetic organic, bioorganic, and environmental chemistry, and who has published in the *Journal of Organic Chemistry*, *Synthesis*, *Synthetic Communications*, the *Journal of Chemical Research in Toxicology*, *Archives of Environmental Contamination and Toxicology*, and the *Bulletin of Environmental Contamination and Toxicology*.

► **Dr. Stephen Hoffmann**, an environmental analytical chemist, whose research focuses on measuring the occurrence, transport, and reactivity of trace metals and other trace contaminants surface waters, and who has published in *Environmental Science and Technology*.

► **Dr. Ram Mohan**, an organic chemist whose research interests encompass both synthetic organic chemistry and physical organic chemistry. His synthetic chemistry projects have a focus on *Green Chemistry* and in developing applications of bismuth compounds. The physical organic chemistry projects focus on the chemistry of epoxides. He has published in *Archives of Biochemistry and Biophysics*, the *Journal of the American Chemical Society*, the *Journal of Chemical Education*, the *Journal of Organic Chemistry*, *Tetrahedron Letters*, and *Synthetic Communications*.

"I think the size of the Illinois Wesleyan Chemistry Department is one of its big advantages. Because we're relatively small, our students have the opportunity to work individually with faculty members, collaborating with them on projects in such areas as chemical synthesis, protein structure/function relationships, inorganic photochemistry, and the detection of environmental contaminants. Because our students have the ability to talk in detail about the research they've done as undergraduates, they have a distinct edge when seeking admission to graduate schools or positions with industrial research firms. At a larger university, you are not likely to get this kind of research experience as an undergraduate.

In addition, our size allows our students to get to know each other in a friendly, non-competitive way. This fosters a sense of collaboration and teamwork, which is also excellent preparation for future education and employment."

Dr. Becky Roesner

Chair, Department of Chemistry

► **Dr. Rebecca Roesner**, a synthetic inorganic chemist whose research interests include early transition metal oxide clusters (polyoxometalates) and macrocyclic chemistry. She has published in *The Journal of Inclusion Phenomena and Molecular Recognition in Chemistry*, *Chemical Communications*, and *Inorganic Chemistry*.

► **Dr. Tim Rettich**, a physical chemist whose research interests include solution thermodynamics and photochemical kinetics related to the environment. He has published in the *Journal of Physical Chemistry*, the *Journal of Solution Chemistry*, the *Journal of Chemical Thermodynamics*, the *Journal of Chemical Engineering Data*, the *Journal of Physical Chemistry Reference Data*, *Berichte der Bunsen-Gesellschaft für Physikalische Chemie*, *Materials Chemistry and Physics*, and the *Journal of Chemical Education*.

PUTTING YOUR LEARNING INTO PRACTICE

Superior facilities and practical opportunities are part of the Illinois Wesleyan chemistry program. All of our equipment, from the Perkin Elmer LS 50 Luminescence Spectrometer, to our JEOL 5800LV Scanning Electron Microscope, JEOL 270 MHz Multinuclear Superconducting Fourier Transform Nuclear Magnetic Resonance Spectrophotometer, and Hewlett-Packard Model 6890 Gas Chromatograph with Mass Selective Detector (GC-MS) is for hands-on student use. As previously mentioned, you may pursue an independent research project on our campus, collaborating closely with a faculty member. Our students often have paid summer research positions both on campus and at national laboratories like Argonne, at large university research centers like the University of Illinois, and in private corporations such as Pfizer, Archer Daniels Midland, and Abbot Laboratories. Recent paid student projects both on and off campus have involved drug synthesis, pesticide analysis, and the development of environmentally friendly catalysts.

YOUR PROFESSIONAL FUTURE

Graduates of our chemistry program pursue a number of exciting careers. Our alumni include government research chemists, university and high school instructors, physicians, and chemical patent lawyers. They have pursued graduate study at major

SUGGESTED FOUR YEAR CURRICULUM IN CHEMISTRY

FIRST YEAR

Fall Semester	Spring Semester	May Term
Chem 201	Chem 202	Elective
Math 161 or 165	Math 162 or 166	
Bio 101	Bio 102	
Gateway Colloquium	General Education	

SECOND YEAR

Fall Semester	Spring Semester	May Term
Chem 311	Chem 312	Elective
Foreign Language	Chem 332	
Phys 105	Foreign Language	
General Education	Phys 106	

THIRD YEAR

Fall Semester	Spring Semester	May Term
Chem 301	Chem 304	Elective
Chem 321	Chem 322	
Foreign Language	Chem 380	
General Education	General Education	

FOURTH YEAR

Fall Semester	Spring Semester
Chem 432	Chem 413
Chem 414	Chem 499
Chem 499	Elective
General Education	General Education

research universities including the University of Illinois Urbana-Champaign, the University of Michigan, the University of California Irvine, Boston College, the California Institute of Technology, and the Massachusetts Institute of Technology. Whatever professional course you take, the education you receive at Illinois Wesleyan will prepare you to make an important contribution to the diverse and challenging field of chemistry.

FOR FURTHER INFORMATION

For more information about the academic program and the faculty visit our website at:

<http://www2.iwu.edu/academics/departments>

Chemistry: <http://titan.iwu.edu/~chem>