

Current. Foundational. Flexible. Interdisciplinary. Experiential. Rigorous. Collaborative. These are a few of the strengths of Oberlin's chemistry and biochemistry program, which has earned accreditation from the American Chemical Society. Our chemistry program offers flexible and interdisciplinary coursework within the foundational fields of analytical, inorganic, organic, and physical chemistry.

Our biochemistry program offers excellent training and coursework in biochemistry, cell and molecular biology, and bioorganic chemistry. In addition, in the course of fulfilling the biochemistry major, students simultaneously fulfill all of the science coursework required by medical schools.

The Oberlin College Science Center, a comprehensive state-of-the-art building that opened in 2002, has classroom and instructional research facilities for up to 45 student researchers in biology, 30 in chemistry, and 15 in neuroscience. The space is ideal for faculty-student research, which ranges from bioorganic chemistry to atmospheric chemistry, photochemistry to catalysis research, materials chemistry to peptide structure, and cancer biochemistry to natural products research.

CURRICULUM OVERVIEW

Hands-on research is an essential component of the chemistry and biochemistry program. Students work alongside faculty as junior colleagues on research projects and as coauthors on research publications. You will develop critical and analytical thinking skills as you apply the

knowledge and skills from your formal coursework to cutting-edge research problems.

Our faculty members receive numerous grants to support their research and to acquire modern instrumentation. All majors participate in undergraduate research, which is characterized by one-on-one instruction and strong mentoring. Summer internships and research projects on and off campus, and winter-term projects enhance the academic experience.

While chemistry and biochemistry are well-established disciplines, in recent years, the program has become more interdisciplinary, offering courses in environmental chemistry, chemical biology, materials chemistry, structural biology, and bioanalytical chemistry. Some introductory courses are specially designed for non-major students. We encourage majors to take additional science and mathematics courses, particularly if graduate school is in your future.

Our graduates are well prepared to enter medical or graduate study or to directly pursue careers in education and in the chemical or pharmaceutical industry. Graduates work in such professions as medicine, education, patent law, business, environmental science, pharmacology, toxicology, and geochemistry, among others.

COURSE SAMPLING

- CHEM 102 - Principles of Chemistry
- CHEM 213 - Inorganic Chemistry
- CHEM 254 - Bioorganic Chemistry
- CHEM 339 - Quantum Chemistry and Kinetics
- CHEM 374 - Biochemistry

ABOUT THE FACULTY

Matthew (Matt) Elrod

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Interests: Atmospheric chemistry, computational chemistry, mass spectrometry

Martin Ackerman

Emeritus Professor
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Interests: Synthesis and characterization of transition-metal organometallic complexes of nitrogen-containing ligands, principally diazenes and hydrazines

Jason Belitsky

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Interests: Bioorganic chemistry, peptides, biological pigments, nanotechnology

Terry Carlton

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Interests: Thermodynamics of water and aqueous solutions, quantum theory

Norman Craig

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Interests: Infrared/Raman spectroscopy and vibrational analysis of small fluorocarbons, determination of equilibrium molecular structures from the analysis of high-resolution infrared and microwave spectra and quantum chemical calculations

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Interests: Peptide folding, Alzheimer's

William (Bill) Fuchsman

Professor
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Interests: Chemical and spectroscopic properties of the heme sites in animal and plant hemoglobins

Albert Matlin

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Interests: Mechanistic and synthetic organic photochemistry, metalloenzyme mimics

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Interests: solid-state NMR and its application to the elucidation of biomolecular structure

Michael Nee

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Interests: Synthesis of heme-containing catalysts of oxidation and manganese oxidation catalysts

Catherine Oertel

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Interests: Synthesis of inorganic-organic materials, studies of composition and corrosion in organ pipes and other cultural materials

Robert (Rob) Thompson

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Interests: Capsaicinoids in chili peppers, liquid chromatography, solid phase extraction

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Interests: Bioanalytical chemistry, aptamers, biosensors, capillary electrophoresis

Laura Romberg

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