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Departments
and Programs
in the College
of Science

Biochemistry &
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Molecular &
Cellular Biology

Physics

Pre-professional
Programs in the
Health Sciences

Professional
Science Masters

Science &
Mathematics
Education

Statistics

Zoology

Chemistry

The number of OSU undergraduate chemistry majors has tripled in the last five years and growth continues.

The Chemistry Department maintains the largest Ph.D. program on campus with strong support from privately funded graduate fellowships and sponsored research.

Graduates are highly sought for positions in education and research, covering both the private and public sectors.

Meeting the demand for science. As greater numbers of advanced technologies are launched based on new materials and processes, chemistry research and education play an increasingly central role in our economic and physical well-being. At Oregon State University, chemistry faculty and students are conducting nationally-recognized research, making discoveries that lead to better understanding, new products, and improved human health. At the same time, the department is educating more students than any other similar program in the state—and demand is rising.

Research

With excellent faculty and first-rate instrumentation, the Department of Chemistry has extensive research capabilities. The Department also collaborates with many OSU units, including physics, biochemistry, engineering, computer science, pharmacy, the Linus Pauling Institute, and environmental and molecular toxicology. The OSU Department of Chemistry:

- Has synthesized potential new chemical treatments for numerous diseases—including cancer and AIDS.
- Has developed new technology and instrumentation for semiconductors, batteries, lighting, energy production, microreactions, lab-on-a-chip systems, and mass spectrometers.
- Studies atmospheric transportation and deposition of toxic compounds along the Pacific Coast of North America.
- Maintains one of the few 1MW TRIGA nuclear reactors for ground-breaking research in nuclear and radiochemistry.
- Participates with other institutions throughout Oregon and plays a key role in advancing the initiatives of the Oregon Nanoscience and Microtechnologies Institute (ONAMI).
- Studies the electronic structures of biologically relevant molecules and inorganic nanomaterials.
- Has contributed to founding the new field of transparent electronics.
- Collaborates with high-tech, biotech, and pharmaceutical companies throughout the U.S. and world.
- Earns funding support from the National Institutes of Health, National Science Foundation, Environmental Protection Agency, Department of Defense, Department of Energy, industry, and private foundations.

Specific Research areas include:

Organic & Bioorganic Chemistry

Natural products synthesis
Bio-mimetic pathways
Metal catalysis
Enantioselective reaction development
Organotransition metal chemistry

Bioanalytical & Environmental Chemistry

Protein function and proteomics
Separations & microreactors
Environmental analysis of pollutants
Mass spectrometry
Electrochemistry
Surface science
Lab-on-a-chip technology
Sensors

Materials & Physical Chemistry

Nanotechnology
Optical and electronic materials
Theory & computational analysis
Laser spectroscopy
Printed electronics

Nuclear Chemistry

Nucleus-nucleus collisions
Separation processes
Radio-analytics
Thermodynamics of complexation

The research activities of the Department benefit society. OSU chemists have patented new compounds that are currently in evaluation for treating cancer and osteoarthritis. A nonlinear crystal developed in the Department is being commercialized by a Corvallis startup company, Deep Photonics, Inc., for use in high-tech materials processing and life-altering vision correction.

Chemistry

The Department of Chemistry has been recognized for its excellence by the Hach Foundation, which funds numerous full-tuition, undergraduate scholarships.

Members of the chemistry faculty are leaders in their fields. They are regularly featured in peer-reviewed journals and mainstream media, including the *Oregonian* and the *New York Times*.

Chemistry regularly involves its many distinguished alumni and friends in setting new directions and goals for the department.

Education

The chemistry department offers an undergraduate program leading to a bachelor of science with accreditation from the American Chemical Society in Advanced Chemistry and Advanced Biochemistry. Eight additional, specialized options are available to target specific career directions: biochemistry, business, chemistry education, chemical engineering, environmental chemistry, forensic science, materials science, and pre-medicine.

Chemistry faculty members teach nearly 40,000 credit hours to chemistry majors and non-majors. In 2005–2006, there were 200 undergraduate chemistry majors and 80 Ph.D. students. Approximately 100 additional students each year graduate with the chemistry minor.

Chemistry majors receive real-world training through a distinctive six-term laboratory sequence featuring project-style experiments and use of state-of-the-art equipment. Numerous opportunities also exist for undergraduate research and industrial internships. Graduate education is characterized by special-topics courses, industrial internships, and discipline-specific or highly collaborative research projects.

Outreach

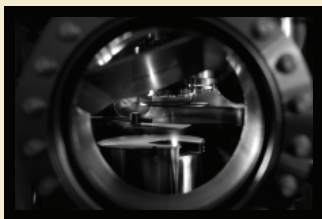
During Discovery Days, a twice-annual campus event attended by 4,000 K-8 students, OSU chemistry faculty and students present hands-on activities and demonstrations to enhance science education.

The Department of Chemistry is also a major participant in Family Science Nights at local schools. Faculty and students engage elementary students and their parents in activities exploring modern and practical aspects of chemistry.

Faculty

The Department of Chemistry has 17 faculty members with honors including:

- 3 Sloan Foundation Fellowships
- 5 National Science Foundation Career Awards
- 4 OSU Distinguished Teaching & Advising Awards
- 3 OSU Distinguished Professor Awards
- 1 American Chemical Society, Chemistry of Materials Award
- 1 Fulbright Fellowship
- 2 Humboldt Fellowships
- 1 Beckman Young Investigator Award
- 1 Royal Society University Research Fellowship
- 1 Camille and Henry Dreyfus Teacher Scholar
- 1 Exxon Solid State Chemistry Fellowship
- 1 W.M. Keck Foundation Award



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