



University of Washington

Department of Chemistry

<http://depts.washington.edu/chem/>

THE DEPARTMENT AND ITS FACILITIES

The Chemistry Department is proud to be the leading producers of BSc. chemists and biochemists in the nation and a major center for state-of-the-art graduate education and research. We have 35 faculty, with 200 graduate students and 70 postdoctoral fellows, assisted by 60 staff members.

Our spectroscopy and analytical facilities provide the instrumentation and hands on training essential for modern research (<http://depts.washington.edu/chem/facilserv/>). Skilled personnel in the machine, electronics, and computer shops are ready to assist in the design and construction of special instrumentation. The Department operates a state of the art X-ray diffractometer with CCD detector, laser spectroscopy facilities including the Center for Ultrafast Spectroscopy, spectroscopy and an extensive mass spectrometry facility, as well as outstanding magnetic resonance instruments and state of the art computational facilities.

The mass spectrometry facility comprises eight instruments allowing sensitive qualitative and quantitative analyses. One ultra-high resolution double focusing magnetic sector and two medium resolution instruments are equipped with multiple ionization and detection options, and inlets via gas chromatography, direct probe, liquid chromatography and flow injection. In addition, we have two GC-MS quadrupole instruments, an LC-MSn ion trap, and two tandem triple-quadrupole mass spectrometers.

Magnetic resonance (NMR and EPR) instrumentation and technical staff make our NMR/EPR facility one of the best in the nation. It includes four 500-MHz NMR spectrometers, a 600-MHz, and a 750-MHz spectrometer. For multinuclear, solid state, or magnetic resonance imaging there are two wide-bore superconducting magnets operating at 200 and 400 MHz. These instruments will perform complex pulse sequences and magic angle spinning with cross polarization. In addition, the Department operates two 200-MHz and two 300-MHz high-resolution NMR spectrometers, and two 10-GHz EPR spectrometers with cryogenic capabilities that extend to 2.5 K. There are also 2 GHz and a 10-GHz saturation-recovery pulsed ENDOR EPR spectrometers.

Our computer facility offers depth and breadth in fast, powerful computers. The departmental minisupercomputer cluster comprises of 82 state-of-the-art processors equipped with 42 GByte of fast memory and hundreds of GBytes of disk storage space for running ab initio, density functional theory, kinetic, Monte Carlo, and other large-scale calculations.



DEGREE PROGRAM

Doctor of Philosophy Degree

The Ph.D. is earned through independent research in collaboration with one or more faculty members. A modest amount of graded coursework ensures a thorough grounding in the fundamentals of the chosen field, as well as breadth of knowledge in the chemical sciences. The Ph.D. prepares students for positions in industrial laboratories, research institutes, and governmental agencies, or for teaching, research, and administration in colleges and universities. The median time to complete all requirements for the Ph.D. is about five years. Students are required to pass written and oral examinations in their area of specialization. There are no pre-entrance or qualifying exams.



GRADUATE PROGRAM ADMISSION REQUIREMENTS

Applicants should have training equivalent to that of an Bachelor of Science degree in chemistry or chemical engineering. There is no fee for applying to the Chemistry Department, but applicants must first apply to the UW Graduate School and pay their fee.

Applicants are required to take the Graduate Record Examination aptitude tests; the subject test in Chemistry is optional. The results of these examinations, the undergraduate transcript, and three letters of recommendation are the basis for evaluation. The application deadline for Autumn Quarter is December 15.

For full details on the application process, we encourage you to visit our website. You may also contact the Graduate Program Coordinator by email at graduate@chem.washington.edu, or by phone at 1-800-uowchem (toll-free within the US).

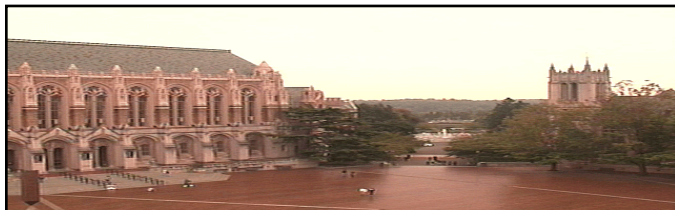
FINANCIAL SUPPORT

Graduate students in good standing are supported throughout the year (including summer) by teaching and research assistantships. TAs and RAs receive a competitive salary, a full tuition waiver, and a comprehensive medical/dental/vision plan (free to the student; 50% premium for dependents). The annual stipend for 10-11 is \$26,352. A modest student activities fee is paid by the student each quarter.

Teaching Assistantships New graduate students are awarded teaching assistantships. These offer the student an opportunity to gain teaching experience at the college level, to sharpen understanding of fundamental chemical concepts, and to practice presenting technical material to a group.

Research Assistantships Funds for RAs come from grants, which provide support for research in defined areas. Graduate students are appointed to a RA after joining a research group.

Fellowships and Scholarships Entering and continuing graduate students are eligible to apply for special fellowships and scholarships that are awarded on a competitive basis. Chemistry Department fellowships are awarded by the Graduate Studies Committee to entering students based on outstanding scholarship. All applications to our Graduate Program are considered for the Chemistry Department fellowships; no further application process is required.



THE UNIVERSITY

The University of Washington, founded in 1861, is an internationally renowned center of higher education, with world-class programs in science and engineering that favorably impact the graduate program in the Chemistry Department. The main campus is located in Seattle, three miles north of downtown, on nearly 700 beautiful acres on the shores of Lake Washington and Portage Bay. Spectacular views of Mt. Rainier are among its many attractions. For a virtual tour of the campus (including historical photos) we invite you to visit <http://www.washington.edu/home/tour/>.

For a comprehensive overview of student life at the UW, visit <http://www.washington.edu/students/#STDLIFE>. Following are a few highlights:

The Intramural Activities (IMA) Building and the Waterfront Activities Center (WAC) offer a wide variety of exercise equipment and recreational sports. All registered students have access to these facilities.

Graduate student health insurance is provided without charge to Teaching and Research Assistants (50% for dependents). For full details, please see <http://www.washington.edu/admin/hr/benefits/insure/gaip/index.html>.

The Chemistry Department coordinates campus interviews for graduates seeking permanent employment with local and national companies. Seminars and assistance in résumé writing, interviewing techniques, and job market research are also available.

INTERDISCIPLINARY RESEARCH OPPORTUNITIES

A number of exciting opportunities exist for interdisciplinary research. Some programs involving chemistry graduate students include:

- Center for Process Analytical Chemistry (<http://www.cpac.washington.edu/>)
- Center for Nanotechnology (<http://www.nano.washington.edu>).
The UW offers a Ph.D. degree option in “Chemistry and Nanotechnology.”
- NSF Science and Technology Center on Materials and Devices for Information Technology Research (STCMDITR; <http://stc-mditr.org>)
- UW Engineered Biomaterials Engineering Research Center (UWEB; <http://www.uweb.engr.washington.edu/>)
- Center for Enabling New Technologies Through Catalysis
An NSF funded center based at UW which involves collaboration with investigators at twelve other institutions. (CENTC; <http://depts.washington.edu/centc/>).

In addition, many chemistry graduate students collaborate with other departments, including: Physics, Geophysics, Geology, Oceanography, Chemical Engineering, Materials Science, Genome Sciences, Biochemistry, Bioengineering, Medicinal Chemistry, and other departments in our top-ranked Medical School.

Many chemistry graduate students also have had valuable research experiences at off-campus locations including:

- Pacific Northwest National Laboratories (PNNL; <http://www.pnl.gov/>)
- Fred Hutchinson Cancer Research Center: (FHRC; <http://www.fhrc.org/>)
- National Oceanic and Atmospheric Administration (NOAA; <http://www.noaa.gov/>)
- Los Alamos National Lab (LANL; <http://www.lanl.gov/worldview/>)



SEATTLE AND THE PUGET SOUND REGION

offer natural beauty, fun, good climate, and job opportunities

The city of Seattle is situated between Lake Washington and Puget Sound, an extensive arm of the Pacific Ocean. Both Lake and Sound are perfect for canoeing, sailing, and kayaking. Recent national surveys have listed Seattle as one of the most livable cities in the country. Seattle offers many cultural activities, including repertory stages, opera, ballet, symphony orchestra, and an international film festival. Seattle is also home to the Mariners and Seahawks. The strong Seattle-area economy provides excellent opportunities for spouses or partners seeking employment, including the rapidly growing high-tech industry (e.g., biotech, software, telecommunications, aerospace). For employment opportunities at the University, see <http://www.washington.edu/admin/hr/jobs/>.

The variety of outdoor activities convenient to the city is unsurpassed. Hiking, skiing, and mountain or rock climbing are popular, with miles of trails and hundreds of peaks found in the nearby Olympic and Cascade mountain ranges. Temperatures are moderate, seldom falling below freezing or rising above 90°F. Snowfall is infrequent and light in the city, but the mountains receive heavy snowfall which provides for great skiing at any of the eight major ski areas within easy driving distance from Seattle.