COLLEGE OF ARTS AND SCIENCES

Chemistry

Saint Louis University is a Catholic, Jesuit institution that values academic excellence, life-changing research, compassionate health care, and a strong commitment to faith and service.

Founded in 1818, the University fosters the intellectual and character development of nearly 14,000 students on two campuses in St. Louis, Missouri, and Madrid, Spain. Building on a legacy of nearly 200 years, Saint Louis University continues to move forward with an unwavering commitment to a higher purpose, a greater good.

OVERVIEW

Established in 1908, the department of chemistry at Saint Louis University houses active research groups involving graduate students in traditional areas such as analytical, physical, organic and inorganic chemistry, as well as cross-disciplinary areas such as materials, environmental and biological chemistry. These research groups regularly publish their work in top-ranked journals, and faculty and students present their work at national and international conferences. Research in the department is supported by a variety of sources, including the Frasch Foundation, National Institutes of Health, National Science Foundation, Petroleum Research Fund and American Heart Association.

Graduate students in the department have access to a number of cutting-edge research tools, including Bruker 400 MHz NMR Spectrometer, Bruker-EMX EPR Spectrometer, UV-Vis spectrometers, research grade spectrophotometers, GC-MS, LC-MS, several FTIR spectrometers, electrochemical analyzers, gas chromatographs, scanning electron micrograph, computational facilities with modern molecular software and access to a Bruker CCD X-ray diffractometer facility.

Master’s Degrees:
Both the Master of Science thesis and Master of Arts nonthesis options offer specialization in analytical, organic, physical or biological chemistry, with cross-disciplinary activity encouraged. The requirements for the thesis-based M.S. degree include:
• A minimum of 18 credit hours of postbaccalaureate coursework (exclusive of thesis research)
• Six credit hours of thesis research (CHEM 5990)
• A thesis
• A public oral presentation and a private oral examination

The requirements for the nonthesis M.A. degree include a minimum of 24 credit hours of postbaccalaureate coursework and an oral examination.

Ph.D.:
For students coming into the program with a bachelor’s degree, there is a mechanism to transition into the doctorate program after the master’s program is completed. A total of 39 credit hours will be required, including 12 credit hours from dissertation research credits. An appropriate coursework track will be developed by the student and mentor and approved by the graduate program director and/or the department chair. Below is an outline of the Ph.D. program structure:
• Core curriculum (12 credit hours): two courses from each of the primary focus areas of advanced chemistry: synthesis and materials chemistry, and analytical and physical methods.
• Research courses (six credit hours): introduction to and research topics in inorganic, analytical, physical or organic chemistry research.
• CHEM 6900 (three credit hours): introduction to proposal writing and oral presentations
• Additional 5000-level chemistry courses (six credit hours)
• Dissertation (12 credit hours)
For full course listings, visit slu.edu/x15728.xml.

Recognition:
The Bachelor of Science degree has been continuously certified for professional training by the American Chemical Society since 1941.

Career Paths:
Possible careers for graduates include pharmaceutical scientist, crime lab analyst, environmental chemist, fuels and materials scientist and academic researcher.

CONTACT INFORMATION

Dana A. Baum, Director

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WEB: slu.edu/x15728.xml

APPLICATION DEADLINE

M.A./M.S.          Ph.D.

FALL: Jan. 15      Jan. 15
SPRING: Oct. 1     Oct. 1
SUMMER: Jan. 15    Jan. 15

APPLICATION REQUIREMENTS

• Application form and fee
• Three letters of recommendation
• Résumé
• Goal statement
• GRE G

ADMISSION CRITERIA

M.S.: Minimum of 18 credit hours (2.8 GPA or above) of upper division undergraduate chemistry required, including: two organic chemistry courses, one quantitative analysis course and two physical chemistry courses. Students may complete these prerequisites as part of their program (not for graduate credit). Students who have not completed upper-level undergraduate inorganic (CHEM 4500) and instrumental analysis (CHEM 4200) will be required to complete these courses (for graduate credit).

Ph.D.: An M.S. degree in chemistry is required. (Students may complete the master’s requirements at SLU and transition into the Ph.D. program.)
FACULTY

Christopher K. Arnatt, Ph.D.
Organic chemistry, medicinal chemistry

Dana A. Baum, Ph.D.
Biochemistry, functional nucleic acids

Paul Bracher, Ph.D.
Organic chemistry, prebiotic chemistry, inorganic chemistry

Steven Buckner, Ph.D.
Analytical chemistry, nanoscale chemistry

James Edwards, Ph.D.
Analytical chemistry, mass spectrometry, capillary separations

Paul A. Jellis, Ph.D.
Inorganic chemistry, inorganic synthesis, transition metal carborane complexes, catalysis of carborane complexes

Charles C. Kirkpatrick, Ph.D.
Inorganic chemistry, molecular orbital calculations, water treatment and analysis, ion-neutral gas interactions

Istvan Z. Kiss, Ph.D.
Physical chemistry, nonlinear dynamics, electrochemistry

Bruce Kowert, Ph.D.
Physical chemistry, diffusion of molecules in liquids

Michael Lewis, Ph.D.
Organic chemistry, computational chemistry, noncovalent interactions of aromatic compounds

R. Scott Martin, Ph.D.
Bioanalytical chemistry, microfluidics

Ryan D. McCulla, Ph.D.
Organic chemistry, photochemistry, computational chemistry

Alexa B. Serfis, Ph.D.
Surface chemistry, interactions of proteins with lipids at air/water interfaces

Brent M. Znosko, Ph.D.
Biochemistry, thermodynamics and NMR of nucleic acids

DEGREES OFFERED

• Master of Arts (M.A.) in Chemistry
• Master of Science (M.S.) in Chemistry
• Doctor of Philosophy (Ph.D.) in Chemistry

COURSES AVAILABLE

DAYS ☑ NIGHTS ☑ WEEKENDS ☑ ONLINE ☑

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FINANCIAL SUPPORT

Assistantships:
Teaching and research assistantships are available to master's and doctoral students, funded by the College of Arts and Sciences and also by external grants (NIH, DoD, NSF, etc.) awarded to faculty. Applicants should have a minimum 3.0 GPA in undergraduate chemistry course work to be considered for an assistantship and must be enrolled as full-time graduate students.

Stipends:
Assistantships provide a tuition scholarship, a base stipend of $24,000 and health insurance.