



Chemistry

chemistry.richmond.edu

Study of Chemistry

Chemistry is the study of matter and the transformations that substances undergo. It is one of the basic sciences and is fundamental to the study of all sciences. People who study chemistry are interested in finding explanations for how things in the universe work, and in harnessing this knowledge in a way that provides for the creation of new materials that will improve lives and the environment. Chemists are people who like to solve problems.

The chemistry major provides a strong foundation of the discipline's principal components — analytical, inorganic, organic, physical, and biochemistry. Richmond graduates are ready to enter the best chemistry graduate programs in the country, to join the workforce as chemists in industry and government, to proceed into careers as secondary school teachers, or to develop careers in sales and marketing for the technical industry. This major also provides a strong background for studies in the health professions, allied health professions, and law.

The Chemistry Department offers two degree options: Bachelor of Arts or Bachelor of Science. By adding appropriate courses, American Chemical Society certification requirements for professional training in chemistry can be met. In conjunction with the biology department, Bachelor of Science and Bachelor of Arts degrees are offered in biochemistry and molecular biology. This program represents a significant opportunity for interdisciplinary study and research.

Learning Environment

The learning environment includes much interaction with faculty and fellow students. The department graduates about 20 seniors each year, many of whom pursue postgraduate study. The majority also undertake chemistry research projects during their four undergraduate years.

Students receive significant laboratory training in their coursework. They have hands-on experience with important

modern instrumental techniques including high-field NMR, gas chromatograph-mass spectrometry, atomic absorption spectroscopy, Fourier transform infrared spectroscopy, electrochemistry, spectrofluorometry, and ultraviolet-visible spectrophotometry.

Majors are also encouraged to undertake individual research projects under a faculty member's direction. Funds are available to support summer research by students on campus, and the Undergraduate Research Committee funds student proposals for equipment and supplies throughout the year.

More than 50 chemistry students conduct undergraduate research each summer, and more than 70 students work in research projects during the academic year. Students regularly appear as co-authors on published papers in chemistry and biochemistry journals and present posters on their research at regional and national scientific meetings.

Special Equipment and Facilities

The Gottwald Center for the Sciences houses the departments of chemistry, biology, and physics, fostering collaboration between students and faculty across the three fields. Gottwald has 22 state-of-the-art teaching laboratories in addition to over 50 student-faculty laboratories. Chemistry students and faculty take advantage of the latest technology to pursue their research. Recent acquisitions include ITC, DSC, high-resolution MS, high-field NMR instruments, and one of the largest supercomputers in an undergraduate institution. For a complete listing, please see chemistry.richmond.edu/research/instrumentation.html.

The University subscribes to SciFinder Scholar so that faculty and students have ready access to the most current online literature searching and information retrieval. Integrated bibliographic instruction in selected courses assures science majors a working capability in the literature of the discipline.

Graduate School Acceptances

- Boston College
- Brown University
- Columbia University
- California Institute of Technology
- Cornell University
- Emory University
- Georgetown University
- Harvard University
- Michigan State University
- Oxford University
- Pennsylvania State University
- Princeton University
- University of California, San Francisco
- University of Delaware
- University of Illinois at Urbana-Champaign
- University of Michigan
- University of North Carolina at Chapel Hill
- University of Pittsburgh
- University of Southern California
- University of Texas at Austin
- University of Washington

Medical School Acceptances

- Columbia University
- Commonwealth Medical College
- Drexel University
- Eastern VA Medical School
- Emory University
- Harvard University
- Pennsylvania State University
- Saint Louis University
- State University of New York
- Tufts University
- Tulane University
- University of Cincinnati
- University of Virginia
- Virginia Commonwealth University

Recent Graduate Employment

- Arqule Inc.
- Federal Food and Drug Administration
- Great Lakes Chemical Corporation
- Johnson & Johnson Pharmaceutical
- Merck
- National Institutes of Health
- Research Technologies
- U.S. Patent Office
- Waco Chemicals, USA

URISE and SMART

The Howard Hughes Medical Institute has allowed the University to expand science faculty, create new courses, and develop Integrated Science Courses and experiences for first year students.

URISE: University of Richmond Integrated Science Experience is a comprehensive program combining early and extensive undergraduate research with an emphasis on interdisciplinary STEM education. URISE is a summer pre-first-year research experience that aims to remove barriers for underrepresented students in STEM disciplines.

Science, Math, and Research Training (SMART) coordinates a year-long combined introductory biology and chemistry course with Calculus I and II



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