

### The 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 our universe work and in harnessing this knowledge in a way that provides for the creation of new materials that will improve our lives and our environment. Chemists are people who like to solve problems.

The chemistry major at the University of Richmond provides a strong basic background in the major subdisciplines of chemistry—analytical, inorganic, organic, physical and biochemistry—on which to build. Richmond graduates are ready to enter the best chemistry graduate programs in the country, to enter 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.

Richmond's chemistry department offers two degree alternatives: the bachelor of arts degree and the bachelor of science degree. By adding appropriate courses, the American Chemical Society certification requirements for professional training in chemistry or chemistry/biochemistry may be met. In conjunction with the biology department, the bachelor of science and bachelor of arts degrees are offered in biochemistry/molecular biology. This program represents a significant opportunity for interdisciplinary study and research.

### The 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 research projects in the department during their four years as undergraduates. Almost all graduate within four 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. In addition, majors are encouraged to undertake individual research projects under the direction of a member of the faculty. 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.

### Special Equipment and Facilities

The department is housed in the Gottwald Center for the Sciences. The facility is shared with the biology and physics departments. There are over 50 teaching and research labs in the facility as well as a computer lab and an abundance of modern instrumentation. Recent acquisitions include FT-IR, GC-MS and NMR instruments. The various research labs contain an assortment of lasers, vacuum systems, inert atmosphere boxes and cryogenic

equipment as well as state-of-the-art computer and analytical instrumentation.

The Science Information Center subscribes to Sci Finder 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.

### A Sampling of Schools Accepting Recent Graduates

Columbia University  
 Cornell University  
 Emory University  
 Harvard University  
 Johns Hopkins University  
 Massachusetts Institute of Technology  
 Northwestern University  
 Oxford University  
 Pennsylvania State University  
 Princeton University  
 Stanford University  
 University of California at Berkeley  
 University of California at Los Angeles  
 University of Chicago  
 University of Colorado  
 University of Florida  
 University of Minnesota  
 University of North Carolina at Chapel Hill  
 University of Pittsburgh  
 University of Rochester  
 University of Texas at Austin  
 University of Utah  
 University of Virginia  
 University of Wisconsin-Madison  
 Yale University

## A Sampling of Medical Schools Accepting Recent Graduates

Georgetown University  
Johns Hopkins University  
Ohio State University  
Thomas Jefferson Medical School  
University of Texas at San Antonio  
University of Virginia  
Vanderbilt University  
Virginia Commonwealth University,  
Medical College of Virginia

## Examples of Employers Hiring Recent Graduates

Arqule Incorporated  
Federal Food and Drug Administration  
Great Lakes Chemical Corporation  
Johnson & Johnson Pharmaceutical  
Merck  
National Institutes of Health  
United States Patent Office  
Waco Chemicals, USA

## Faculty

**Samuel Abrash**  
Ph.D., University of California at  
Berkeley  
Physical chemistry

**Ellis Bell**  
D. Phil., Oxford University  
Biochemistry

**William Case**  
Ph.D., Rensselaer Polytechnic  
Institute  
Laboratory director: general chemistry

**Jonathan Dattelbaum**  
Ph.D., University of Maryland at  
Baltimore  
Biochemistry

**Raymond Dominey**  
Ph.D., Massachusetts Institute of  
Technology  
Analytical chemistry

**Kelling Donald**  
Ph.D., University of West Indies  
Physical chemistry

**Wade Downey**  
Ph.D., Harvard University  
Organic chemistry

**Lisa Gentile**  
Ph.D., Brown University  
Biochemistry

**Emma Goldman**  
Ph.D., Massachusetts Institute of  
Technology  
Distinguished Educator Award, 1990  
Organometallic chemistry

**John Gupton**  
Ph.D., Georgia Institute of Technology  
Distinguished Educator Award, 2005  
Organic chemistry

**Michelle Hamm**  
Ph.D., University of Chicago  
Biochemistry

**René Kanters**  
Ph.D., University of Nijmegen  
Director of Computer Assisted Science  
Education

**Michael Leopold**  
Ph.D., North Carolina State University  
Analytical chemistry

**Robert Miller**  
Ph.D., University of Akron  
Laboratory director: organic chemistry

**William Myers**  
Ph.D., University of Florida  
Distinguished Educator Award, 1987  
Inorganic and organometallic  
chemistry

**Carol Parish**  
Ph.D., Purdue University  
Physical chemistry

**Timothy Smith**  
Ph.D., Carnegie Mellon University  
Director of Instrument Facilities

**Christopher Stevenson**  
Ph.D., University of Florida  
Analytical chemistry