Leadership in today’s society means more than just getting to the top as fast as possible. Today’s leaders must possess strong ethical and moral standards, as well as intelligence and experience to guide the way for others. Leader development begins immediately by learning followership. Citadel cadets live in barracks as a citizen-soldier and follow a regimented schedule from Reveille to Taps. You learn to live by the Honor Code, a hallmark of Citadel life. You learn about attention to detail, respect, time management and self-discipline. You develop strong, life-long bonds with your classmates as you rise to new challenges and push yourself past what you may have thought was impossible. As a member of the Long Gray Line, you will continue your leader development throughout your life.

The Citadel Experience

Chemistry is the study of matter and its transformations. It is involved in all aspects of life and society. The food we eat, the medicine we take, and the clothes we wear are a few of the many applications of chemistry. A chemistry degree leads to a career in many different areas. Chemical and biochemical analyses are an important aspect of law enforcement and national security. Chemistry is an excellent major for those who want to attend medical, dental, pharmacy, or veterinarian school. It also provides good preparation for admission to law school, especially in environmental and patent law. Recent chemistry graduates from The Citadel have attended graduate and professional schools as well as continue onto careers in the military, industrial, academic, and government sectors.

The Citadel Edge:
Earn More Than an Academic Degree

The Citadel’s Chemistry program blends academics with a demanding on-campus military leadership laboratory – the South Carolina Corps of Cadets. This teaches self-awareness, stress management, creative problem-solving, communication, motivation, conflict management, and productive use of power and authority.

Employers today seek college graduates with more than a major. In recent national surveys, military, government and corporate leaders say they hire young people who possess both the knowledge and the right values to lead their organizations to new levels of success. They want people they can trust, whose integrity is unquestioned and who have the discipline, passion and motivation to find solutions no matter how elusive.

When you graduate from The Citadel, you leave with more than an academic degree: you enter the world with a reputation for leadership and success.

Bachelor Degrees in Chemistry
The Department

The Chemistry department consists of eight full-time faculty and two support staff. Classes at the 200-level and above have an average student-faculty ratio of 8:1. The department offers degree programs for a Bachelor of Arts (BA), a BA with a concentration in Secondary Chemistry Teaching, a Bachelor of Science (BS), and a BS with specialization in Biochemistry. Both BS programs offer curricula approved by the American Chemical Society (ACS). Completion of the curricula results in award of a certificate by the ACS documenting their status as professional chemists. A minor in Chemistry as well as a joint minor with the Biology Department in Molecular Biology and Biochemistry is also offered.

The Faculty

Holly M. Bevsek, Associate Professor, Ph.D., University of Pittsburgh, Physical. Research: The reactivity of small molecules with carbon nanotubes at high and low pressure, the reactivity of tropospheric aerosols, and chemical education.

James R. Blanton, Professor, Ph.D., Texas A & M University, Organic. Research: Developing reagents that are bonded to polymers to take advantage of the microenvironment of the polymer, preparing chiral reagents for use in asymmetric syntheses, and chiral phase transfer catalysts.

Ronald E. Hemingway, Assistant Professor, Ph.D., University of Texas, Analytical. Research: Scanning Electrochemical Microscopy to assess the mode of action for metal toxicity to bacteria and to study electron transfer at immiscible liquid interfaces.

Holly M. Bevsek, Associate Professor, Ph.D., Oregon State University, Inorganic. Research: Chemical education.

Lisa A. Zura, Professor and Department Head, Ph.D., Duke University, Biochemistry and Physical. Research: Protein – nucleic acid interactions involved in the mechanisms of carcinogenesis.

Blakely M. Adair, Assistant Professor, Ph.D., Texas Tech University, Environmental Toxicology. Research: Developing and implementing analytical techniques to quantify toxic chemicals, mainly metals, for environmental and biological studies.

Smokey McAfee, Associate Professor, Ph.D., Oregon State University, Inorganic. Research: Chemical education.

Lisa A. Zura, Professor and Department Head, Ph.D., Duke University, Biochemistry and Physical. Research: Protein – nucleic acid interactions involved in the mechanisms of carcinogenesis.

Instrumentation

The Chemistry department has an extensive array of modern instrumentation. All instrumentation is available for student use beginning the freshman year. Current holdings include a Bruker Biospin Spectrospin FT-NMR Spectrometer, Thermoquest Gas Chromatograph-Mass Spectrometer (GC-MS) including FID and ECD detectors, three Varian Cary 50 UV/visible spectrometers, a Nicolet 670 Fourier Transform InfraRed spectrometer (FTIR) with an MCT detector, a Bruker FTIR, an SRI-GC, a Shimadzu TOC-500 Total Organic Carbon analyzer (with autosampler), a Cary Eclipse Fluorescence spectrophotometer, a CHI Model 920C Scanning Electrochemical microscope, a nitrogen/dye laser-based modular fluorescence spectrometer, a scanning electron microscope, capillary electrophoresis, three liquid chromatography (HPLC) systems (including one gradient), BioRad Digital Photo documentation system, and high performance LINUX computer cluster.

Research

All chemistry majors are required to conduct a senior thesis research project. This provides an opportunity for Chemistry majors to synthesize their four years of chemical study into a concise body of knowledge on a specific topic. Students present their work in a written and oral forum at The Citadel. Additionally, students have presented their results at regional and national chemistry conferences and published papers in the chemical literature. Recent research projects have included studies of the toxic mechanism of copper in MRSA, development of asymmetric organic synthesis, microenvironmental effects on polymer bound reagents, computational studies on chemical warfare agents and hydrogen storage materials, and reactions in carbon nanotubes.