



# GENEVA COLLEGE

## *Department of Chemistry*

### MISSION

The Geneva College chemistry department exists to serve, educate and mentor students in the disciplines of chemistry and chemical engineering. We seek for our students to develop a solid competence in the fundamentals of chemistry as defined by the guidelines for an approved program of the American Chemical Society. We also desire to instill an enthusiasm for the process of discovery and research and an awareness of the tremendous responsibility and the sense of awe that comes with understanding and managing the material aspect of God's creation.

### OVERVIEW

"He [Jesus Christ] is before all things and in Him all things hold together." Colossians 1:16

In a larger sense, this verse captures the essence of the entire outlook of our chemistry department—Jesus Christ before all else and all aspects of life unified in Christ. As chemists, we understand that His hand is "holding together" the very chemical bonds of molecules. Our goal as a department is to explore our mandate to be stewards of creation and specifically, to recognize the hand of God in the intricate details of matter. The closer we look at what God has made, the more wonderful we find it to be.

### DISTINCTIVES

- American Chemical Society approved program since 1958
- Independent research opportunities
- Geneva Society of Chemists - organization for students
- Recently renovated Roy W. Adams Chemistry Center in the Science & Engineering Building
- Distinct Christian approach to science

### CHEMISTRY MAJOR

Students who study chemistry explore the building blocks that compose our material world. Chemists study existing substances and work to create new substances in an effort to contribute to a better understanding and appreciation of our world. Chemistry is an exciting science that provides the foundation for other scientific disciplines. Geneva's chemistry major provides an American Chemical Society professionally-certified major that requires 46 major credits and a non-certified option requiring 31 credits (students use this to double major, usually with biology). Students will complete a variety of courses covering organic and inorganic chemistry, biochemistry, quantitative analysis, physical chemistry and much more.

Additionally, chemistry students gain extensive laboratory experience with additional opportunities for paid summer research.

### CHEMICAL ENGINEERING

Chemical engineers utilize their specialized chemistry knowledge to discover and manufacture better plastics, paints, fuels, fibers, medicines, fertilizers, semiconductors, paper and other kinds of chemicals by carrying out chemical reactions and purifications. Chemical engineers find careers in environmental, materials, petroleum and biochemical engineering. Geneva's chemical engineering degree is jointly administered by the chemistry department and engineering departments.

### BIOCHEMISTRY

Geneva students can opt for a biochemistry concentration which is new to the department. The biochemistry concentration gives students the opportunity to supplement a solid foundation in chemistry with an emphasis in the rapidly growing field of biochemistry - the molecular understanding of life processes. For students wishing to attend medical school, to work in any field related to biotechnology or who wish to pursue graduate schooling, pharmacology or biochemistry, this concentration is excellent preparation. The curriculum includes a biochemistry laboratory course and two advanced biochemistry courses as well as cell biology and genetics. A capstone experience in carrying out a biochemical research project is a required part of this concentration.

### EDUCATION CERTIFICATION IN CHEMISTRY

Geneva students can achieve educational certification to teach chemistry in high schools. Through the education department, Geneva offers classes to qualify students for certification requirements upon graduation. Courses for secondary education majors cover subjects such as technology, science education methods, assessments and exceptionalities in the classroom. Two field experiences in high school classrooms plus student teaching are required for this program.

## OUTCOMES

A wide range of opportunities exist for students with extensive training in chemistry such as working in the physical sciences, the life sciences, or the health sciences. Specifically, chemistry students find employment in forensic chemistry, industrial/manufacturing research, healthcare or research in a wide variety of fields.

Specific to Geneva, our graduates have found immediate employment or placement in graduate schools such as Bucknell, University of Pittsburgh, Case Western, University of Illinois and Pennsylvania State University. The chemistry major is also a good preparation for medical school. Overall, our graduates, equipped with distinct faith integration preparation, have a clear advantage for both employment or graduate school.

## INTERNSHIPS

Through Geneva's internship programs, students can gain the ultimate credential before graduation - a resume of professional experience in well-known companies. Recent internships have included:

- Sensibility Soaps
- District of Columbia Department of Transportation
- Pittsburgh Mineral and Environmental Testing
- Siemens Environmental
- SCA Packaging
- Carlisle Syntec
- Research Internships at the University of Akron, SUNY Binghamton, Geneva Summer Research Institute and University of North Carolina

## OUR FACULTY

The department of Chemistry faculty are highly qualified and maintain active membership and connection in their discipline through professional memberships and conferences. Active in research, the chemistry department faculty maintain a current research interest and involve students in their work. Additionally, the faculty have diverse areas of academic experience, ranging from analytical, physical, organic and forensic chemistry. This diversity exposes students to a broad range of areas within the field of chemistry.

**RODNEY AUSTIN** (2005), Assistant Professor of Chemistry; B.S., Mount Vernon Nazarene College; Ph.D., University of Cincinnati

**KERRY McMAHON** (2004), Associate Professor of Chemistry; B.S., Geneva College; Ph.D., University of Connecticut

**JOHN W. STAHL** (1985), Professor of Chemistry and Chair, department of Chemistry; B.S., Geneva College; Ph.D., The Pennsylvania State University

**MELINDA R. STEPHENS** (1998), Associate Professor of Chemistry; B.S., Geneva College; Ph.D., University of Pittsburgh



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*Deep learning. Growing faith. Real life.*