ABOUT THE DEPARTMENT

The Chemistry Department is dedicated to educating well-rounded scientists with the skills to address the challenges of the 21st century. The department is accredited by the American Chemical Society (ACS) and offers ACS certified and non-ACS certified chemistry majors that culminate with a Bachelor of Science (B.S.) degree. Our curriculum was recently updated to provide coverage of foundational chemical concepts essential for the understanding of biological systems earlier in the curriculum, increase student flexibility in course scheduling and sequencing, and allow students to explore in-depth areas of chemistry earlier in their education. Students also have the option to specialize their chemistry major with an area of emphasis in organic and medicinal chemistry, greener materials science, physical and instrumental chemistry, or biophysics and biological chemistry, which can help students to market themselves for future employment or post-graduate studies.

INTERNSHIPS

The Chemistry Department is small but mighty! Approximately half of our majors complete summer internships and all students who complete at least one internship during their time at WC are accepted to a graduate or professional school or are hired as professionals before they graduate.

Recent students have participated in off-campus internships through the Research Experiences for Undergraduates (REU) program funded by the National Science Foundation, the National Institutes of Health (NIH), the Naval Research Laboratory in Washington D.C., Yale University, the LaMotte Company in Chestertown, and many other organizations. Students also regularly complete on-campus research with chemistry faculty with financial support from the Cater Society of Junior Fellows and the John S. Toll Science Fellows program.

CHEMISTRY HONOR SOCIETY

Washington College is home to the Gamma Eta chapter of Gamma Sigma Epsilon, the National Chemistry Honor Society. This organization recognizes high-achieving chemistry majors and minors and is highly involved in outreach activities at local elementary and high schools.

STUDY ABROAD

Recent changes to the chemistry curriculum have made semester-long study abroad easy for chemistry majors when planned in advance. Washington College also has an increasing number of short-term study abroad opportunities during winter and summer breaks. Recent chemistry majors have completed semester-long study abroad experiences at the following universities.

- University of Hull, England
- Bond University, Australia
- College of Cork, Ireland
- Al Akhawayn University, Morocco

AMERICAN CHEMICAL SOCIETY CLUB

The Student Affiliates of the American Chemical Society at Washington College are strongly committed to the celebration and promotion of chemistry education on campus, in the community, and around the world. Recent student activities include extensive outreach to local elementary, middle, and high schools, as well as our popular explosive pumpkin carving event every October.

SENIOR THESIS

To graduate from Washington College, all students must complete a Senior Capstone Experience. In the Chemistry Department, students conduct a year-long research project in collaboration with a chemistry faculty member that culminates in a written thesis and poster presentation at a research symposium open to the public. Many projects involve synthetic and preparative procedures, which allow students to become proficient in the use of the department’s research-grade UV-VIS, FTIR, AA, NMR, GC, HPLC, GC-MS, ICP-MS, LC-MS, electrochemical analyzer, and polarimeter.
WHY CHEMISTRY AT WASHINGTON COLLEGE?

A chemistry degree from Washington College opens many doors in science, healthcare, education, and beyond! Our majors graduate with a comprehensive education in chemistry that emphasizes critical thinking, the development of written and non-written modes of communication, and experiential learning. We encourage our students to double major or minor in other disciplines and remain active in co-curricular activities, such as athletics, music, theatre, and campus/community organizations. In total, the educational experience at Washington College allows our students to become well-rounded scientists with the skills to address the challenges of the 21st century.

1. Student Outcomes
   • Greater than 90% of our chemistry seniors have a post-graduation plan before they graduate.
   • On average, 39% of our chemistry alumni go to graduate school in chemistry or a related field, 35% work in industry, 16% go to medical, pharmacy, or pre-health professional school, and 4% go into teaching immediately after graduation.
   • 82% of recent peer-reviewed publications published by departmental faculty had one or more undergraduate co-authors (14 out of 17).
   • 49% of our chemistry majors have completed an internship before they graduate.
   • 37% of our chemistry majors are involved in varsity athletics, some in more than one sport.
   • 10% of our chemistry majors have spent a semester or a summer abroad.
   • 20% of our chemistry graduates earned an award during their senior year (senior award or commencement award).

2. Student Placement

   Recent Employment after Graduation: National Institutes for Health, Chemist at PQ Corporation, Teach for America, Department of Energy, Philadelphia Museum of Art, EVISA Corporation, LaMotte Company, The Emmes Company, and more

   Post-Secondary Education in the Chemical Sciences and Education: Harvard University, Yale University, University of California–Berkeley, Johns Hopkins University, University of Maryland, Pennsylvania State University, University of North Carolina–Chapel Hill, University of Delaware, University of Pittsburgh, Dartmouth University, University of Oregon, Temple University, George Washington University, North Carolina State University, Georgia Institute of Technology, Georgia State University, and more.

   Health Professional Schools: Virginia Commonwealth University School of Pharmacy, Philadelphia College of Osteopathic Medicine, Campbell University College of Pharmacy, Duquesne University School of Pharmacy, Sidney Kimmel Medical College, Pennsylvania State University College of Medicine, University of Maryland School of Pharmacy, University of Delaware School of Nursing, New Mexico State University College of Osteopathic Medicine, University of Maryland School of Dentistry, and more.

3. Green Chemistry Commitment

Chemistry does not have to be a dirty word! Washington College is leading the way in a national movement to integrate the principles of green chemistry into the curriculum and to train a new generation of chemists who are especially mindful of environmental impacts.

4. Biochemistry and Molecular Biology (BMB)

This is an interdisciplinary major at the interface between Biology and Chemistry. BMB majors gain a broad foundation in concepts and techniques essential for success between these two disciplines. Completion of the BMB major prepares students for a variety of career opportunities, including biomedical research, a range of health professions, and post-graduate education. Students majoring in BMB cannot double major or minor in Biology or Chemistry and similarly cannot minor in BMB.

Patrick Ginther ’17
Chemistry and Biology major

Patrick spent two summers at Yale University conducting research with Washington College Associate Professor of Chemistry James Lipchock into the structure and function of the human enzyme protein tyrosine phosphatase 1B (PTP1B). The research enabled Patrick to co-author three published papers with Lipchock and others and he was accepted to the Ph.D. program in chemistry at Yale University with a full-tuition scholarship and stipend.

According to Patrick, Washington College’s small sizes and intense mentoring gave him a clear advantage. “A lot of the students who went to larger institutions with big names, they have the big name to back them up, but they’re in classes of 50, 60, all the way up to 500 students. The education here is so individualized and catered to you. We get something that they don’t get at larger institutions, and that is one-on-one interactions with the professor and personalized education.”

During his time at Washington College, Patrick was also an RA, a chemistry and biology tutor, and a course mentor for organic chemistry. He served as president of the WC chapters of the American Chemical Society and Gamma Sigma Epsilon, the national chemistry honor society.