Biochemistry

The mission of the Biochemistry program, in conjunction with the liberal arts environment at Washington & Jefferson College, is to develop students into both broadly and specifically educated individuals prepared to perform competitively in a scientific community that is increasingly seeking well-rounded professionals. Drawing upon the strengths of the contributing departments (primarily Biology and Chemistry), the Biochemistry program will provide a selection of courses, an advising structure, research opportunities, instrumentation, and committed faculty to support a rigorous interdisciplinary major in biochemistry.

Major Requirements
Core courses:
- BIO 121 Foundations in Cell and Molecular Biology
- BIO 131 Foundations in Organismal Biology
- BIO 212 Cell Biology
- BIO 311 Molecular Biology
- CHM 160 Organic Chemistry – Structure and Fundamentals
- CHM 170 Organic Chemistry – Reactions and Synthesis
- CHM 260 Inorganic Chemistry
- CHM 270 Analytical Chemistry
- BCH 320 Biophysical Chemistry or CHM 360 Thermodynamics and Kinetics
- BCH 333 Biochemistry
- BCH 401 Biochemistry Seminar
- MTH 151 Calculus I
- PHY 101 Introductory Physics I or PHY 107 General Physics I
- PHY 102 Introductory Physics II or PHY 108 Intro/General Physics II

Plus any 2.5 courses from:
- NSC 300 Experimental Neuroscience
- BIO 201 Genetics
- BIO 202 Developmental Biology
- BIO 235 Animal Physiology
- BIO 314 Immunology
- BIO 412 Experimental Biology
- CHM 320 Intermediate Organic Chemistry
- CHM 345 Medicinal Chemistry
- CHM 380 Synthesis Laboratory
- CHM 385 Chemical Measurements Laboratory
- CHM 420 Advanced Organic Chemistry
- BCH 500 or BCH 501 Independent Study

Beyond the Classroom
Students have many opportunities for research, internships, conferences, and networking beyond the classroom that give them an advantage to prepare for life after W&J.

Research and Internships
- On-campus Independent Study (fall or spring)
- Summer research internships on-campus and at institutions including: the National Institutes of Health (NIH); University of Texas M.D. Anderson Cancer Center; Princeton University; Cleveland Clinic; University of Wisconsin-Madison; University of California Los Angeles; University of Cologne (Germany); Max F. Perutz Laboratories (Austria); Radboud University (The Netherlands); and the University of Cambridge (England)

Careers
W&J Biochemistry alumni have pursued a wide range of careers in the biomedical sciences and medicine, including:
- Research scientist
- Laboratory technician
- Medical doctor
- Veterinarian
- Hospital administrator
- Pharmaceutical sales representative
- College/university professor

Alumni Achievements
- M.D./Ph.D. from University of Miami School of Medicine; pathology resident at Johns Hopkins School of Medicine
- M.D./Ph.D. from University of Pittsburgh School of Medicine; pediatrics resident at UPMC Children's Hospital Pittsburgh
- Post-baccalaureate CRTA fellow at the National Cancer Institute, NIH; Ph.D. candidate in immunology and infectious diseases at Harvard University