



The intersection of biology and chemistry

The Biology/Chemistry Interdepartmental Program offers an alternative to students who are interested in both disciplines with an eye on "doing" science. Every major

- Receives solid core mastery in both biology and chemistry
- Utilizes modern chemical, cellular and molecular laboratory facilities and equipment
- Conducts research alongside faculty, carrying out a project from start to finish
- Regularly presents research at local and national scientific meetings

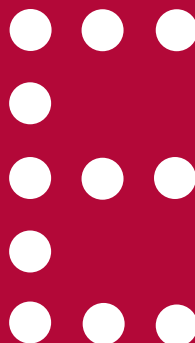
Preparation for careers in health and graduate school

Earlham is ranked 12th among 1,469 institutions of higher learning in the U.S. in the percentage of graduates who go on to receive Ph.D.s in the biological sciences. Of those receiving Ph.D.s in the medical sciences, Earlham ranks 7th, and in the life sciences in general, Earlham ranks 8th. (Higher Education Data Sharing Consortium, 2007). In addition, during the past decade more than 95 percent of pre-medical students have been accepted into medical schools.



Earlham Facts

- Founded in 1847 by the Society of Friends, Earlham is rooted in the ideals of Quakerism.
- 1,200 undergraduate students representing 44 states and 71 countries
- Male 44%, Female 56%
- 12:1 student-to-faculty ratio
- More than 70 percent of every graduating class participates in an off-campus study program.
- More than 75 percent of Earlham graduates pursue an advanced degree.



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Earlham welcomes all who come to seek for truth in a diverse community that accords respect to every individual. Each is asked to contribute to the understanding of all.

Biology/ Chemistry

@ Earlham College



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Modern instrumentation

Biology/Chemistry students at Earlham live and learn in an atmosphere with modern instrumentation, computer databases and resources. A wide range of chemical chromatographic and spectroscopic instrumentation is available, including an HPLC, ATR-IR, a Circular Dichroism spectrometer and a 400-MHz Nuclear Magnetic Resonance spectrometer. Modern molecular and cellular facilities include cell culture, PCR, automated DNA sequencer, DNA/RNA and protein facilities as well as fluorescent, and scanning electron microscopy. A dedicated computer cluster is also available for bioinformatic analysis.

Interdisciplinary approach essential

"One of the best aspects of the Biology/Chemistry program at Earlham is the way material and resources are integrated across disciplines. This cross-disciplinary integration reflects the environment students will see and skills that are increasingly essential for preparation for future careers in the sciences. The program did a great job of introducing this essential concept and laying a foundation for internalizing the necessity of understanding and integrating multiple disciplines in research, practice and education."

— Kjersti Knox '03

Knox, a Fulbright Scholar, is currently pursuing a M.D./M.P.H. at the University of Wisconsin School of Medicine and Public Health in Madison, Wisconsin.

Preparing mature thinkers: A look at the program

The Biology/Chemistry Interdepartmental Major provides great opportunities for students to grow as scientists and is particularly attractive to pre-health students and to students who plan to pursue graduate study in chemistry, biochemistry or cellular/molecular biology. Through a broad spectrum of advanced courses such as anatomy/physiology, immunology, genetics, microbiology, biochemistry, environmental chemistry and toxicology, students develop into broadly trained and mature thinkers. One hallmark of the Earlham Biology/Chemistry Major is the opportunity for students to do hands-on science, and the unique opportunity to study human anatomy using a cadaver.

"The Biology/Chemistry Major has been the perfect major for me. The faculty members are always available to help students, and I have genuine friendships with all of my professors. Apart from the faculty, the biggest benefit of Earlham might be that the Biology and Chemistry departments have so many graduate school quality instruments and the curriculum allows for a lot of opportunity to work extensively with them. This makes me feel well prepared for graduate school."

— William Vincent '10, Biology/Chemistry Major
Cool Ridge, West Virginia

For more information about Biology/Chemistry at Earlham, visit www.earlham.edu/~chem/biochem.htm.

"Our Biology/Chemistry students develop skills that employers seek: strong communications skills and the ability to work independently. Each one of them works one-on-one with faculty on an undergraduate research project, getting hands-on experience with our modern instrumentation, and presenting that work in a professional forum."

— Corinne Deibel, Ph.D.
Associate Professor of Chemistry



Research and internship opportunities

In addition to coursework Biology/Chemistry majors participate in a research project either on or off campus. On-campus research projects occur either during the academic year or summer. These student-faculty collaborative projects have included topics such as cloning and expression of human genes, contemporary genomics focused on malaria parasites (funded by the National Institutes of Health), synthesis of biologically relevant molecules, and the isolation and characterization of compounds in natural products. Off-campus opportunities include summer internships at places such as the Mayo Clinic, the National Institutes of Health, Harvard University, Eli Lilly Pharmaceuticals, University of Texas and University of Minnesota, among others, or semester-long programs including the Oak Ridge Science Semester or the Woods Hole Marine Biological Laboratory Research semester.



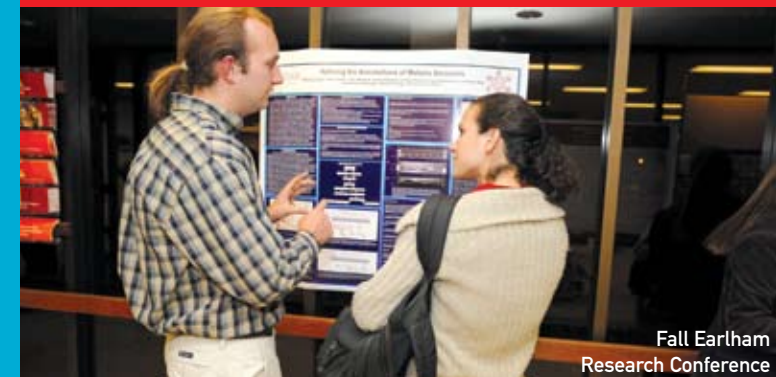
Preparing graduates

Many Biology/Chemistry interdepartmental students elect to pursue advanced work in health-related fields, including attending medical, veterinary and graduate schools, as well as schools of public health. Medical programs accepting Earlham graduates include: Harvard, University of Chicago, The Ohio State University, Case Western, Dartmouth, Yale, Indiana and Johns Hopkins. A number of students have pursued M.D.-Ph.D. programs at these schools. Veterinary schools that our graduates have attended include: Purdue, Ohio State, Michigan State and University of California, Davis. Students pursuing a Ph.D. or M.P.H. have entered graduate programs at Notre Dame, Northwestern and Johns Hopkins among others. Other Earlham graduates have chosen to work in industry directly after Earlham.

High praise from Harvard

Bruce R. Ksander, Ph.D., is an associate professor at the Department of Ophthalmology at Harvard Medical School. Dr. Ksander mentors Earlham students in his laboratory. Bruce says he has a "very high level of enthusiasm" for Earlham's "outstanding" science program and students. Of one Earlham student who conducted summer research in his lab and later presented research at the Association of Research in Vision and Ophthalmology annual meeting, Ksander says:

"This is a truly outstanding achievement for a research assistant and is as good, or even better, than what a successful graduate student or post-doc should achieve."



Fall Earlham
Research Conference