



CONNECTICUT  
COLLEGE

## Audrey Davis '09

*Biochemistry, Cellular and Molecular Biology*



**Q: Why did you choose to study science at a liberal arts college?**

A: As a BCMB major I enjoy all the benefits of a liberal arts school, such as small

class sizes and having professors, not graduate students, teach all of my courses. At the same time, I am performing research that is comparable, if not superior, to work at a big research university.

**Q: What type of research have you done?**

A: I joined Dr. Branchini's bioluminescence research group to study firefly luciferase, an enzyme that is commonly used for *in vivo* imaging. Currently, I am writing an honors thesis on my work. There are many exciting opportunities for research as a science major and it is not difficult to find them.

**Q: Have you studied or presented your work at other institutions?**

A: I worked for two summers in the lab and spent two weeks in Italy collaborating with graduate students at the University of Bologna, both funded by a National Science Foundation grant. I also presented a poster at the National Conference for Undergraduate Research.

**Q: Do you feel prepared for a career in science?**

A: With two years of lab experience, I am confident that I got the most out of my college education. Being well-versed in molecular biology and biochemistry techniques, I feel I will have an advantage over many other job applicants with undergraduate degrees.



# Biochemistry, Cellular and Molecular Biology

## Overview

The biochemistry, cellular and molecular biology (BCMB) major is an interdisciplinary major representing the convergence of many scientific fields, including modern biological chemistry, cellular and molecular biology, chemistry, botany and biology. Because of the interdisciplinary nature of the major, our students take courses in the chemistry and biology departments. This major is popular among students who plan to attend medical school, as it covers all of the requirements for the Medical College Admissions Test (MCAT).

## Facilities

Majors have access to state-of-the-art lab facilities and sophisticated scientific equipment throughout the course of your studies. Our facilities are bright, new, clean, safe and well-equipped. This access to resources ensures that when you leave the College you will be proficient in the use of computer technology to model chemical systems and control laboratory instruments.

## Personalized Learning

Your experience as a BCMB major will not just be defined by the quality of the facilities but also by the quality of interaction between you and your peers and your professors. Labs are capped at 14 students, allowing maximum interaction, instruction and sharing of ideas. Small class size also permits activities that promote scientific writing and oral presentation skills, which are developed in a research-oriented atmosphere.

## Research Opportunities

BCMB majors spend a lot of time working with faculty members on innovative research in their fields. The department views teaching and research with its students as a single unified activity. As a result, our students have co-authored articles in scientific journals with members of the College's faculty and presented their work at major research seminars in the United States and abroad.

Many students in this major spend their summers on campus performing research with faculty through the Keck Foundation summer research program or through research fellowships funded by National Science Foundation and National Institutes of Health grants. Other students have opted to go overseas to continue their research, participating in an ongoing collaborative research project with scientists at the University of Bologna.

## Study Abroad

Semester-long study abroad is another option for BCMB majors. Many students have participated in one of the College's own Study Away Teach Away (SATA) programs. Accompanied by a faculty member from the department, students travel to destinations like South Africa and Italy, taking classes with their Connecticut College professors and at the local universities.

## Faculty

**Phillip Barnes**, *Associate Professor of Biology*

Ph.D., University of Minnesota; B.S., Xavier University  
Genetics; evolution of complex quantitative traits

**Anne Bernhard**, *George and Carol Milne Assistant Professor of Biology*

Ph.D., Oregon State University; M.S., Western Washington University; B.S., Texas A&M University  
Microbial ecology of estuaries and salt marshes; community ecology and population dynamics of ammonia-oxidizing bacteria

**Bruce Branchini**, *Hans and Ella McCollum '21 Vahlteich Professor of Chemistry*

Ph.D., M.A., The Johns Hopkins University; B.S., Lehigh University  
Bioluminescence; nuclear magnetic resonance

**Deborah Eastman**, *Associate Professor of Biology*

Ph.D., University of Minnesota; B.A., Grinnell College  
Developmental biology; molecular biology; genetics; microbiology

**Martha Grossel**, *Associate Professor of Biology, Chair of Biology Department*

Ph.D., Tufts University School of Medicine; B.S., Colorado State University  
Molecular biology; cell biology; cancer and the cell cycle; cell cycle regulation

**Stephen Loomis**, *Jean C. Tempel '65 Professor of Biology*

Ph.D., B.S., University of California, Davis  
Comparative biochemistry; physiology

**Page Owen**, *Associate Professor of Botany, Chair of Botany Department*

Ph.D., University of California, Riverside; B.A., Oberlin College  
Plant cell biology; electron microscopy; carnivorous plants; endomembrane flow

## Selected Courses

Genetics; Molecular Development; Molecular Biology; Biochemistry; Atomic and Molecular Structure and Dynamics; Chemistry Seminar Series; Organic Spectroscopic Methods

## About Connecticut College

Connecticut College is a highly selective residential liberal arts college with 1,900 students from all over the country and the world. The academic program offers 47 majors in the arts, sciences, social sciences and humanities as well as innovative interdisciplinary programs. Students engage with dedicated faculty and each other to create a vibrant social, cultural and intellectual community in which learning is valued for its own sake — and individuals' diverse perspectives enrich the experience of all.

## What can you do with a major in biochemistry, cellular and molecular biology?

### Rebecca Reeves '05

Biochemistry, Cellular and Molecular Biology

Ph.D. candidate in genetics and cell biology at Washington State University. Works in a lab studying thermophilic proteins in order to better understand DNA repair mechanisms.

### Justine Miller '07

Biochemistry, Cellular and Molecular Biology

Research technician at the Harvard Stem Cell Institute's Human Embryonic Stem Cell Facility. Trains the Harvard stem cell community on basic human embryonic stem cell culture. Participates in cutting-edge research on cellular reprogramming with one of the founding induced pluripotent stem cell biology labs.

### Alexandra Smith '07

Biochemistry, Cellular and Molecular Biology

Data control coordinator at Weill Cornell Medical College in New York City, where she works on leukemia clinical trials in the department of hematology/medical oncology.

Studied abroad with the College's SATA program in Cape Town, South Africa, and volunteered at a medical clinic in the townships.

For more information, visit [www.conncoll.edu/academics/](http://www.conncoll.edu/academics/)