A GUIDE FOR WHAT'S NEXT

Chemistry and Biochemistry

Learning Goals

1. To be an independent learner and critical thinker.
2. To gain an understanding of the important questions of the field.
3. To appreciate the molecular perspective in explaining and understanding natural phenomena.
4. To be capable of using empirical evidence to arrive at scientifically defensible conclusions.
5. To understand fundamental chemistry and biochemistry concepts.
6. To master fundamental laboratory techniques in a safe and proficient manner.
7. To be able to pose and test scientific hypotheses.
8. To have effective oral and written communication skills.
9. To be able to collaborate with others.
10. To recognize how new knowledge is added to the field.
11. To be adequately prepared for experiences, including postgraduate study, related to the fields of chemistry or biochemistry.

Middlebury College
Center for Careers and Internships

About the major

The Department of Chemistry and Biochemistry at Middlebury College is a group of faculty, staff, and undergraduates who together are dedicated to the intellectual and professional growth of the student.

The department awards BA degrees in chemistry, environmental chemistry (interdisciplinary program), biochemistry, and molecular biology and biochemistry (interdisciplinary program). Department members hold expertise in all major areas of chemistry including organic, inorganic, physical, analytical, environmental, and biological chemistry.

The 12 full-time faculty provide a traditional chemistry and biochemistry program with opportunities for students to pursue their own particular interests in chemistry or biochemistry in their last two years. Many majors use this opportunity to carry out an honors thesis project working one-on-one on a research endeavor with a faculty mentor. Graduates of the program are prepared for entry into graduate or medical programs or for employment by the chemical or biotechnology private sector.

> "My biochemistry major at Middlebury has been critical in sifting through scientific literature and engaging with expert thought leaders to advance the next generation of medicine."
>
> —Caroline Brown '15
> *Consultant, Clearview Healthcare Partners*

Reasons you might choose this major

- You are deeply interested in the physical and life sciences and carrying out research.
- You have an interest in learning how chemistry is an important consideration in nearly everything, from material goods to modern transportation and infrastructure, and to medicine.
- You want to understand all aspects of the physical and biological worlds at the molecular level, including the human genome and the molecular basis for life.
- You have a vested interest in social issues, including renewable energy, climate change, and fossil fuels.
- You are interested in allied health; a career in medical, dental, or veterinary sciences; or any other number of paths toward a health profession.
- You enjoy working in the laboratory and out in the field, and can see yourself making discoveries and expanding the limits of scientific knowledge.

Translating Learning into Professional Competencies

Throughout your time at Middlebury, you will develop and enhance the following core professional competencies, skills, and dispositions highly valued by employers that will prepare you for leadership and success in any given field:

Critical Thinking: Exercise sound reasoning to analyze issues, make decisions, and overcome problems.

Oral/Written Communications: Articulate thoughts and ideas clearly and effectively in written and oral forms.

Teamwork/Collaboration: Build collaborative relationships with colleagues and customers from diverse backgrounds.

Leadership: Leverage the strengths of others to achieve common goals, and use interpersonal skills to coach and develop others.

Professionalism/Work Ethic: Demonstrate personal accountability and effective work habits.

Global/Intercultural Fluency: Value, respect, and learn from diverse cultures, races, ages, genders, sexual orientations, and religions.

Digital Technology: Leverage existing digital technologies ethically and efficiently to solve problems, complete tasks, and accomplish goals.

Career Management: Identify and articulate one's skills, strengths, knowledge, and experiences relevant to career goals, and identify areas necessary for professional development.

Where chemistry and biochemistry majors go

Applying your learning through internships . . .

Students pursue internships and research in a variety of fields, enabling them to apply their liberal arts learning in real-world settings. Internships, research, and self-directed projects enrich your academic experience and help prepare you for life after Middlebury. Students have interned or done research at the following:

Boston Children's Hospital

Peak Performance Physical Therapy and Sports Medicine

Gates Center for Regenerative Medicine

UVA School of Medicine: Department of Microbiology, Immunology, and Cancer

Gioeli Lab

Mote Marine Laboratory

Stowers Institute for Medical Research

Stanford University

Bay Area Wilderness Training

Global Healthy Living Foundation

Middlebury STEM Pilot Project

The Scripps Research Institute

University of California San Francisco Thoracic Oncology Laboratory

Novus Biologicals

Kenya Medical Research Institute

Fred Hutchinson Cancer Research Internships

American Society for Microbiology

University of Montana Center for Structural and Functional Neuroscience

National Institutes of Health

University of Michigan National Nanotechnology Infrastructure Network

. . . leading to meaningful, dynamic, and engaging career paths.

See just some of the many interesting ways our graduates have applied their liberal arts learning to engage the world. If you want to see what other Middlebury alumni are doing now, log into Midd2Midd and search by major. **go/midd2midd**

The World Bank, Health Specialist

St. Luke's Hospital and Health Network, *Chief, Thoracic Surgery*

Whitehead Institute at MIT, *Genome Technology Core Manager*

Bristol-Myers Squibb, *Senior Research Investigator*

National Renewable Energy Laborator, *Molecular and Catalysis Science Group Leader*

UnitedHealth Group, *Senior Consultant*

US Navy - Naval Medical Research Center, *Physician Scientist, Undersea Medicine*

Partners Health Care, *Director, Process Improvement, Program Management*

ICF International Inc., *Manager, Climate Change and Sustainability*

Dana-Farber Cancer Institute, *Cutaneous Oncologiest*

Water Treatment Plant, *Laboratory Supervisor*

iBiology/American Society of Cell Biology, *Director of iBiology*

Glenstone Museum, *Director of Conservation*

NYC Department of Health and Mental Hygiene, *Evaluation Specialist, Bureau of HIV/SIDs Prevention & Control*

Cell Data Sciences, *Cofounder and CEO*

3D Systems, Inc., *Vice President: Global Materials Sales and Marketing*

Lawrence Livermore National Laboratory, *Staff Scientist*

Forma Therapeutics, *Senior Director of Chemistry*

Buena Vista Winery, *Winemaker*

Natural Resources Defense Council, *Attorney and Senior Energy* Advisor

Epizyme, *Principal Scientist*