

# Biochemistry/Molecular Biology

## at Benedictine University

### Why study biochemistry/molecular biology at Benedictine?

When you choose to major in Biochemistry/Molecular Biology at Benedictine University, you will have the opportunity to:

- Pursue a degree in an interdisciplinary major that emphasizes critical thinking and problem-solving skills
- Pursue an investigative-orientated approach to science
- Use advanced research instrumentation and techniques in modern laboratories
- Participate in a highly-productive and nationally-recognized undergraduate research program that has received external funding from federal agencies and the private sector
- Use the extensive facilities in our Birck Hall of Science, and possibly the facilities at such off-campus sites as BP Amoco, Argonne National Laboratory or Nalco, among others
- Study systems biology exposing you to the disciplines and tools of bioinformatics, genomics and proteomics
- Publish and present your research findings at local, regional and national symposia
- Participate in a program that follows the guidelines of the American Society of Biochemistry and Molecular Biology (ASBMB)

### What careers are available with a Biochemistry/Molecular Biology degree?

Unlike the traditional Biology or Chemistry major, the Biochemistry/Molecular Biology program is focused on interdisciplinary education in the natural sciences. This intensive and research-oriented training prepares students for specific graduate programs that are often unavailable to the traditional science major. These include graduate or health-career programs in biochemistry, cell and molecular biology, developmental biology, genetics, microbiology and biotechnology.

The Biochemistry/Molecular Biology major also prepares students for entry-level research and development careers in biotechnology and industry. Biotechnology is the fastest-growing field of study in the natural sciences. Combined with the University's location in the heart of the research and development corridor of metropolitan Chicago, a market exists for highly-trained undergraduates with a Bachelor of Science in Biochemistry/Molecular Biology.

### How does the program work?

As a Biochemistry/Molecular Biology major, you will acquire a broad base of knowledge represented by the University's core courses required of all students, which are invaluable to your future career development and daily interactions as a citizen of your community. Within the Biochemistry/Molecular Biology major, you will develop proficiency in biocalculus, university physics, general biology and general plus organic chemistry. Additional lecture courses in biochemistry, intermediary metabolism, biophysics, genetics, molecular and cellular biology will be reinforced with a consecutive series of laboratory courses in recombinant DNA, protein chemistry and genomic bioinformatics. At least three hours of research credit in biochemistry, biology, chemistry, computer science, mathematics and/or physics is required.

### Demonstrate your social conscience with a certificate in Environmental Studies

Students with an interest in the environment can earn a certificate in Environmental Studies by choosing specific environmental-focused courses from the anthropology, biochemistry, biology, environmental science, geography, global studies, humanities, literature, management, natural science, philosophy, political science, religious studies, sociology and theology disciplines. Students will learn about the scientific, humanistic, educational and business aspects of sustainability.

# Recommended Program

## Bachelor of Science in Biochemistry/Molecular Biology

### FRESHMAN

Writing Colloquium	3
Biocalculus I with Lab	5
General Chemistry I	3
Integrated Lab I (NTSC 151)	1.5
Principles of Organismal Biology	3
	<b>15.5</b>

Research Writing	3
Principles of Biology	3
Biocalculus II with Lab	4
General Chemistry II	3
Integrated Lab II (NTSC 152)	1.5
	<b>14.5</b>

### JUNIOR

Biochemistry	3
Biochemistry/Protein Lab	1
Psychology/Sociology core elective	3
University Physics I and Lab	5
Cultural Heritage (HUMN 240)	3
	<b>15</b>

University Physics II and Lab	5
Cell Biology and Lab	4
Intermediary Metabolism	3
Cultural Heritage (HUMN 250)	3
	<b>15</b>

### SOPHOMORE

Organic Chemistry I and Lab	4
Genetics	3
Cultural Heritage (HUMN 220)	3
Philosophy core elective	3
Chemical Analysis	4
	<b>17</b>

Speech Communication	3
Religious Studies core elective	3
Organic Chemistry II and Lab	4
Recombinant DNA Lab	1
Cultural Heritage (HUMN 230)	3
Business/Economic core elective	3
	<b>17</b>

### SENIOR

Molecular Biology	3
Fine Arts/Music core elective	3
Science elective	3-4
Anthropology/Political Science core elective	3
Research	1
	<b>13-14</b>

Biophysics and Lab	4
Genomics and Bioinformatics	2
General elective	3-4
Literature core elective	3
Research	2
	<b>14-15</b>

*"I earned my Ph.D. in 2000 and was a post-doctoral fellow at Harvard Medical School in 2001. I am now an instructor in the Department of Genetics/Molecular Biology at Harvard University. I have no doubt that my successes are a direct result of my participation in the molecular biology program at Benedictine. As I encounter different courses and laboratory work, I find that I have received a superior background in course material and research experience. This is due to the numerous outstanding teachers and other opportunities I experienced throughout my undergraduate career."*

Christine Moore, C94