ART 490A Senior Project: Studio
Beers, Imatani, Miller, Rathbun, Tomlinson, Vogel
Content: Independent project in student's area of specialization, culminating in an in-depth series of artwork.
Prerequisite and/or restriction: Senior standing. Declared studio art majors who have completed at least two courses in their area of specialization. Consent of advisor. Students must spend both semesters of their senior year on campus. Students must contact their advisors in the spring of their junior year to discuss their senior projects.
Taught: Annually, during fall semester only, 2 semester credits.

ART 490B Senior Project: Studio
Beers, Imatani, Miller, Rathbun, Tomlinson, Vogel
Content: Independent project in student's area of specialization, culminating in an in-depth series of artwork.
Prerequisite and/or restriction: Art 490A. Students must spend both semesters of their senior year on campus.
Taught: Annually, during spring semester only, 2 semester credits.

ART 493 Senior Seminar: Art History
David, Johnston, Odell
Content: Advanced research seminar and introduction to theoretical problems and perspectives central to art historical analysis. Exploration of themes, tools, and important issues in the field, including formalism, style, iconography, historiography, authorship, "offensive" art, narrative, gender, mechanical and digital reproduction, structuralism, and poststructuralism. Investigation of key problems and differences of opinion in the discipline. Development of skills essential to the practices of art history: writing, researching, oral presentation, intellectual dialogue. Culminates in a 40-minute oral presentation and a 25-page thesis.
Prerequisite and/or restriction: Three of the following five: Art 101, 111, 152, 153, or 207. Two upper-division art history courses. History 300, Philosophy 203, or Sociology/Anthropology 245 strongly recommended.
Taught: Annually, 4 semester credits.

ART 499 Independent Study
Staff
Content: Independent projects designed in consultation with department faculty.
Prerequisite and/or restriction: The 300-level course in the medium or art historical period.
Taught: Annually, 2-4 semester credits.

Biochemistry and Molecular Biology

Director: Greg J. Hermann
The molecular logic of living organisms is the focus of this major. Biochemists and molecular biologists study how the collection of molecules within the cell interact to maintain and perpetuate life. The biochemistry/molecular biology major at Lewis & Clark provides students with an opportunity to pursue an interdisciplinary course of study that follows the guidelines of the American Society for Biochemistry and Molecular Biology. Students majoring in biochemistry/molecular biology devote their first years of study to mastering the basic tenets of calculus, physics, genetics, and chemistry. Upper-division coursework exposes students to current research in biochemistry and cellular and molecular biology.

The distinctive character of our program derives from the curricular goals that shape it. Faculty associated with the biochemistry/molecular biology program are proponents of a lab-rich, investigative education for undergraduates in the sciences. Opportunities for scientific inquiry are woven into the laboratory curriculum and prepare the student ultimately to undertake collaborative research projects with the faculty. To foster the ability of our students to engage independently in the scientific process, we devote class time to critically reading the primary literature. In our laboratory courses, students participate in selecting and designing their experiments. The curriculum is constructed to engage students in the scientific process and thereby facilitate the development of reflective judgment and problem-solving skills.

Students majoring in biochemistry/molecular biology are guided by sponsoring faculty from both the biology and chemistry departments. The major prepares students for careers in biomedical research, biotechnology, and genetic engineering. It is especially suitable for students seeking admission to medical or dental schools, or to graduate programs in biochemistry, cell or molecular biology, or genetics. Students majoring in biochemistry/molecular biology may not minor in biology or chemistry.

Major Requirements

A minimum of 54 semester credits in biology and chemistry (11 semester credits of which are granted for associated laboratory work), plus courses in mathematics and physics, distributed as follows:

- Biology 151, 311, 312, and 361.
- One elective selected from Biology 200, 320, 412, 422, and 462.
- Chemistry 110, 120, 210, 220, 310, 330, 335, and 336.
- Mathematics 131 and 132.
- Physics 141, 142, 171, and 172.

Honors students must complete Biochemistry/Molecular Biology 410.

Honors

Biochemistry/molecular biology majors who have distinguished themselves academically by earning a GPA of 3.500 or higher in the major and overall, have completed either Biology 312 or Chemistry 336, and have some prior research experience are invited in the spring of their junior year to participate in the senior thesis program. Students who accept the invitation work with a faculty advisor to develop a research project, which must be approved by faculty overseeing the biochemistry/molecular biology major. Following the experimental work, students prepare a written thesis and orally defend it during the spring semester of the senior year. Honors are awarded to those students whose thesis is judged to be meritorious.

Sponsoring Faculty

Greg J. Hermann, associate professor of biology.
Louis Y. Kuo, professor of chemistry.
Janis E. Lochner, Dr. Robert B. Pamplin Jr. Professor of Science.
Nikolaus M. Loening, associate professor of chemistry.
Deborah E. Lycan, professor of biology.
C. Gary Reiness, professor of biology.
Bethe A. Scalletar, professor of physics.

BCMB 410 Biochemistry/Molecular Biology Seminar

Staff
Content: Select topics in biochemistry and molecular biology. Students attend seminars of invited outside researchers and prepare an oral seminar on their own research or on a critical analysis of a relevant research publication.

Prerequisite and/or restriction: Biology 311. Chemistry 330. Chemistry 335 (may be taken concurrently).
Taught: Annually, 1 semester credit.

BCMB 496 Biochemistry/Molecular Biology Senior Research
Staff
Content: In-depth laboratory inquiry into a question relevant to biochemistry/molecular biology. Students develop a thesis proposal in association with a faculty mentor, conduct extensive experimental work to address their hypothesis, and present their analysis of their findings in a written thesis.
Prerequisite and/or restriction: By invitation only.
Taught: Annually, 4 semester credits each semester of the senior year.

BCMB 499 Independent Study
Staff
Content: Participation in a faculty-supervised research project at Lewis & Clark or another research institution. Further information available from biochemistry/molecular biology program faculty members.
Prerequisite and/or restriction: Approval of project proposal by program and supervising faculty member.
Taught: Each semester, 2-4 semester credits.

Biology

Chair: Kellar Autumn
Biologists examine life on our planet from many different perspectives, from molecules to ecosystems. At Lewis & Clark, students explore the many facets of biological science through a diverse and innovative curriculum that encourages original thinking and provides hands-on experience at all levels of biological inquiry. From their first course, biology majors are immersed in the process of discovery, developing the skills of logical problem-solving and rigorous methodology that characterize modern scientific investigation. Students are not only introduced to facts, but to the theoretical underpinnings that define a particular topic and its relevance in today's world. Thus, graduates leave the program prepared for a variety of careers. Some pursue graduate studies and go on to become researchers, teachers, or health professionals. Others enter careers in law, journalism, education, or business. The concern of many majors for the health of our planet leads them to environmental careers in academia or with governmental agencies, businesses, or private foundations.

The faculty in the Department of Biology believe strongly in the value of learning through experience, and most courses include laboratory sections that support students as they develop their own investigations.

Students are encouraged to spend at least one summer gaining research experience, either by working with a Lewis & Clark faculty member or through one of the many available research internship programs at laboratories and field stations throughout the country.

The Major Program
The biology curriculum at Lewis & Clark is built around a core of three investigative courses, each of which offers an opportunity for students to learn in depth about one important way in which biologists study living organisms. These three courses focus on ecology and environmental science, genetics and evolutionary biology, and cellular and molecular biology. By delving in depth into particular subdisciplines of biology, students can pose and answer questions about living systems—begin to function as biologists—very early in their college careers. In addition to the core courses in biology, majors are expected to