

Cellular and Molecular Biology

Department Information

- **Program Coordinator:**
Katie Reindl, Ph.D.
- **Department Web Site:**
www.ndsu.edu/cellularmolecularbiology/ (<http://www.ndsu.edu/cellularmolecularbiology/>)
- **Application Deadline:**
February 15 is the deadline for applicants seeking consideration of financial assistance (fellowship, assistantships) for fall semester and July 1 for spring semester.
- **Credential Offered:**
Ph.D.
- **Test Requirement:**
GRE required for applicants who have not earned a degree in the U.S. or any international applicants who have not earned a master's degree.
- **English Proficiency Requirements:**
TOEFL 79, IELTS 6.5, Duolingo 105

The Cellular and Molecular Biology (CMB) program, approved 1988, was the first interdisciplinary graduate program at North Dakota State University (NDSU). The program was designed to respond to the evolving nature of research in the life sciences in which it was recognized that biological phenomena emerge from molecular and cellular events and that the elucidation of such processes increasingly relies on multidisciplinary approaches.

The CMB program provides cross training of graduate students in the areas of biochemistry and cellular and molecular biology. In this setting, students learn the most up-to-date approaches from a variety of fields. Integration across concepts, as well as the application of various approaches to addressing biological problems, is developed through their preliminary examination, in which students are required to author a research proposal in the format of a national granting agency and to defend it orally. The students also develop and conduct an original line of research under the supervision of their major adviser. The program also brings together faculty with common interests and who use common approaches and equipment. Such a community of scientists fosters collaboration and engenders a sense of cooperation that leads to shared use of common equipment.

The CMB program prepares students for careers in academia and private industry. All program graduates are in permanent positions in their field or are engaged in post-doctoral training.

Nearly 40 faculty members in many different departments and representing a variety of colleges participate as faculty mentors. The CMB program coordinator receives guidance on policy, procedure, and program administration from a multidisciplinary group of faculty who serve on the CMB Steering Committee.

Program Objectives

The CMB program is designed to respond to the evolving nature of research in the life sciences in which it was recognized that biological phenomena emerge from molecular and cellular events and that the elucidation of such processes increasingly relies on multidisciplinary approaches. In addition, new applications of sensor technology, disease diagnosis and treatment, and other emerging technologies require that scientists work across historical boundaries of their disciplines.

This is a research-oriented degree that requires advanced skills areas of biochemistry, cellular biology, molecular biology, and contemporary research techniques. Prospective students must have a high quantitative aptitude and be prepared to undertake rigorous graduate-level training in research including quantitative methods.