

# Cellular and Molecular Biology

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## Department Information

- **Program Coordinator:**  
Katie Reindl, Ph.D.
- **Department Web Site:**  
[www.ndsu.edu/cellularmolecularbiology/](http://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 Ph.D. program is open to qualified graduates of universities and colleges of recognized standing. For consideration for full-standing admission, the applicant must:

- Hold a baccalaureate degree from an educational institution of recognized standing.
- Have earned a cumulative grade point average (GPA) in all courses of at least 3.0 or equivalent at the baccalaureate level. Applications are at any time.
- Have adequate preparation and show potential to undertake advanced study and research as evidenced by academic performance and experience.
- If possible, applicants should identify at least one Cellular and Molecular Biology faculty member with whom they wish to study.

A recent score (within 12 months) for the general Graduate Record Examination or successful completion of a relevant M.S. degree is required. No minimum GRE score is required, but investigators may use this as a piece of evidence in consideration of the student's application. International students are required to have proficiency in English as shown by a TOEFL iBT of 71 or higher or an IELTS of 6 or higher, unless they have matriculated from an institution in which instruction is conducted in English.

The following undergraduate courses are required for graduate work in the CMB program:

- **Biology** - One year of general biology with laboratory and one course in genetics are required. Cellular biology or cellular physiology, animal or plant physiology, and microbiology are recommended.
- **Chemistry** - One year of general chemistry with laboratory and two sequential terms of organic chemistry with laboratory are required. Biochemistry is recommended.
- **Mathematics** - Two terms of life sciences calculus are required.
- **Physics** - Two sequential terms of general physics with laboratories (above the concept level) are required.
- **Recommended** - introductory courses in computer science, statistics, and technical writing.
- With program approval, students may take up to three courses within the first year of resident study to correct deficiencies in required courses. These courses may not be used on the Plan of Study or towards the credits required to complete the degree.

## Applicant Selection

Applications for the CMB program are accepted on a rolling basis throughout the year; however, for full consideration for a CMB program stipend, application must be made by the deadlines listed for fall admission (July 1). Acceptance into the program is based upon both the quality of the application and the capacity of the program.

As a program that encompasses many departments and core areas of research, as well as being an interdisciplinary training program, it is helpful to potential advisers to know what aspects of research the student is interested in. Students are encouraged to explore potential advisers' work and

identify areas of interest that align with one or more CMB faculty research program(s). These areas should be addressed in the applicant's statement of purpose. If an applicant is open to a broad range of research, it is helpful to identify that as well (for example, working with plant genetics, any aspect of infectious disease, aspects of either cancer biology or therapeutics, etc.). Students are only admitted to the program if a successful match with a CMB faculty member can be made, so this is a critical aspect of the application demonstrating what the student will bring to the research endeavor.

## **Participating Departments/Programs**

North Dakota State University offers an interdisciplinary program leading to the doctoral degree in Cellular and Molecular Biology. The CMB program is a joint effort of the colleges of Agriculture, Food Systems, Natural Resources; Science and Mathematics; Health Professions; and Engineering and includes the departments of Animal Sciences, Biological Sciences, Chemistry and Biochemistry, Coatings and Polymeric Materials, Electrical & Computer Engineering (Bioengineering), Microbiological Sciences, Pharmaceutical Sciences, Physics, and Plant Sciences.

## **Financial Assistance**

Self-funded students who provide their own support through sponsored funding sources (governmental or grant funding only) may contact CMB faculty members with whom they wish to work or the CMB Director to inquire which investigators are accepting students so that a successful research mentorship can be arranged.

While the CMB program offers a limited number of competitive graduate assistantships, financial support is usually provided by the department or laboratory in which the student will carry out research. Therefore, applicants are encouraged to research participating faculty members' areas of expertise and identify them in their statement of purpose. Students are encouraged to contact those with whom they would like to work regarding availability of positions and funding. In instances where specific investigators are not identified in the Statement of Purpose, the Director will contact faculty members who are accepting new students for their appraisal of the application.

In addition to the stipend, graduate assistants receive a graduate tuition waiver. Tuition waivers cover base tuition for NDSU graduate credits only. Students are responsible for differential tuition, student fees, and tuition for non-graduate level credits taken or Cooperative Education credits.