Biomedical Sciences
PhD Degree

The Biomedical Sciences Graduate Program at the University of North Dakota School of Medicine and Health Sciences emphasizes basic research and scholarship in the biomedical sciences. Research and educational opportunities within the program provide students with focused training in multiple fields including Inflammation and Infectious Disease, Neuroscience, or Molecular and Cellular Biology.

The goal of our graduate program is to educate students in a rigorous and challenging environment that fosters creativity, innovation and discovery. The Ph.D. degree can be customized to the career goals of the individual student.

The mission of the Biomedical Sciences Graduate Program leading to the Doctor of Philosophy degree is to prepare students for professional careers in biomedical sciences through personalized and multi-disciplinary graduate education and research experiences.

**Goal 1:** Students will become professionals who possess a foundational knowledge of the biomedical sciences and are capable of applying that knowledge in scholarly endeavors as self-directed, life-long learners.

**Goal 2:** Students will become professionals who demonstrate intellectual curiosity and the ability to conduct meaningful scholarly inquiry.

**Goal 3:** Students will master communication skills necessary to convey the results of their scholarly work.

**Goal 4:** Students will gain experience in education and mentorship.

**Goal 5:** Students will recognize and abide by professional and ethical standards and participate in service to their institution, the scientific community, and society in general.

**Admission Requirements**

1. Completion of a four-year Bachelor’s degree or equivalent from a recognized college or university as described in the UND Undergraduate and Graduate Academic Catalog. Exceptions must be approved by the Dean of the School of Graduate Studies.

2. Coursework: Admission into the Biomedical Sciences Graduate Program is dependent upon the applicant’s demonstration of effective academic skills and appropriate undergraduate training. Ideally, the applicant will have completed the following coursework:
   a. General Biology with laboratory
   b. General Chemistry with laboratory
   c. Organic Chemistry with laboratory
   d. Physics with laboratory
   e. Biochemistry or equivalent
   f. Calculus
   g. Advanced undergraduate coursework in at least one of the following areas: molecular biology, cell/developmental biology, genetics, neuroscience, biochemistry, microbiology, immunology, anatomy, or physiology.

3. Applicants must have a cumulative undergraduate GPA of at least 3.0/4.0. Applicants with previous graduate education should have a cumulative GPA of 3.5/4.0 in their graduate level course work.

4. Graduate Record Examination scores: Applicants must submit Graduate Record Examination scores. The General test is required; the Subject test is strongly recommended. The Biochemistry, Cell and Molecular Biology, Biology, or Chemistry subject tests are acceptable. Preference for admission will be given to applicants whose averaged test scores are at or above the 50th percentile.

5. International applicants must satisfy the School of Graduate Studies English Language Proficiency Requirements.

6. A Statement of Goals must be included with the application materials. This statement will describe the student’s academic achievements, research experience and accomplishments, career goals, and objectives for applying to the Biomedical Sciences Graduate Program.

*Apply online: [http://graduateschool.und.edu](http://graduateschool.und.edu)*

*Deadlines apply. See our website for more details.*

*Last Updated: 8/4/2014*

*Email: questions@gradschool.und.edu*
7. Three letters of recommendation addressing the student’s academic performance and research or professional experience are required to complete the application. At least two letters must be from faculty having direct knowledge of the student’s academic capabilities.

8. Preference will be given to students who can demonstrate undergraduate research and/or a record of scholarly publication or other relevant experience.

Degree Requirements
Students seeking the Ph.D. degree in the Biomedical Sciences Graduate Program must satisfy all general requirements set forth by the School of Graduate Studies as well as particular requirements set forth by the Biomedical Sciences Graduate Program. In addition to course work, the Ph.D. degree requires completion of an acceptable dissertation in a program of study designed by the student with Faculty Advisory Committee approval.

1. A minimum of 90 credit hours of graduate level courses including research and dissertation.
2. Completion of the following graduate level courses:
   a. BIMD501 – Scientific Discovery I - 6 credits
   b. BIMD502 – Scientific Discovery II - 6 credits
   c. BIMD510 – Basic Biomedical Statistics – 2 credits*
   d. BIMD516 – Responsible Conduct in Research – 2 credits
   e. BIMD518 – Grant Writing – 2 credits
   f. BIMD590 – Research – at least 50 credits
   g. BIMD999 – Dissertation – 6 credits
   *BIMD510 – Basic Biomedical Statistics fulfills the scholarly tool requirement.
3. Completion of a minimum of 6 credit hours of graduate level elective courses. Please refer to the academic catalog for course options.
4. A student must obtain at least a “B” in all required courses in order to remain in good standing in the graduate program. If less than a “B” is received, the student will be given the opportunity to remediate in a manner determined by the course director. If remediation is unsuccessful, the student may petition the Graduate Faculty to take the course a second time. In the event that the student is unable to raise the grade to at least a “B”, the student must petition the Graduate Faculty to be allowed to remain the program.
5. Students must maintain a minimum 3.0 GPA in accordance with School of Graduate Studies guidelines (UND Graduate and Undergraduate Academic Catalog).
6. Students must successfully complete the comprehensive examination.
7. Students must fulfill the teaching requirement as defined by the student’s Faculty Advisory Committee.
8. Research and Dissertation: The Ph.D. degree requires completion of a dissertation based on the results of a project completed by the graduate student under the guidance of a faculty advisor. The project must represent an original and independent investigation by the student. It is expected that the student will publish at least one first author peer-reviewed manuscript in a scientific or academic journal prior to the defense of their dissertation. The dissertation prepared by the candidate must be presented orally in a public forum and defended before the Faculty Advisory Committee and the Departmental Graduate Faculty and will be open to all members of the academic community.

Faculty and Areas of Expertise
We encourage all applicants for the Biomedical Sciences degree to review the faculty listing on the Department of Basic Sciences website to learn more about their research expertise. Visit med.und.edu/basic-sciences

Contact Information
Ann M. Flower, Ph.D.
Director, Graduate Program in Biomedical Sciences
School of Medicine and Health Sciences
Department of Basic Sciences
University of North Dakota
501 North Columbia Road
Grand Forks, ND 58203-9037

Apply online: http://graduateschool.und.edu
Deadlines apply. See our website for more details.

Last Updated: 8/4/2014
Email: questions@gradschool.und.edu