

Biomedical Sciences, Ph.D.

The UCI School of Medicine offers graduate study leading to a Ph.D. degree in Biomedical Sciences. Five participating basic science departments train students in biomedical research and critical inquiry with the goal of a research-based career in academia, biomedical technology and related fields.

Entry into the Ph.D. programs is primarily through the UCI Gateway Programs (CMB and INP). Direct admission is on a case-by-case basis. Students in the Medical Scientist Training Program (MSTP) may also elect to pursue their Ph.D. in Biomedical Sciences.

About the UCI Gateway Programs:

- Cellular & Molecular Biosciences (CMB) cmb.uci.edu (<https://cmb.uci.edu>)
- Interdepartmental Neuroscience Program (INP) <https://inp.uci.edu>

Among the first-year requirements, students supervised by a faculty advisor take coursework and identify labs for rotation with the intention of selecting a potential thesis advisor, and must pass a preliminary qualifying examination in CMB.

Application information is found on the Admission tab and at <https://grad.uci.edu>.

About the Medical Scientist Training Program (MSTP):

The MSTP is an M.D./Ph.D. program that trains individuals who can understand and contribute to advances in research, and can also apply those advances to the field of medical care. Website information is found at <https://mstp.uci.edu/>. The program is administered by Joanne Ham at joanne.wu@uci.edu and directed by Dr. Alan Goldin at agoldin@uci.edu.

Departments Offering the Ph.D. in Biomedical Sciences:

- Anatomy & Neurobiology
- Biological Chemistry
- Microbiology & Molecular Biology (Medical Microbiology)
- Pathology & Laboratory Medicine (Experimental Pathology)
- Physiology & Biophysics

Programs are administered by each department. The School of Medicine Office of Graduate Studies oversees and enhances student and program efforts. Questions may be directed to the Director of Graduate Studies, Leora Fellus at lfellus@uci.edu, or Associate Dean for Graduate and Postdoctoral Studies, Dr. Francesco Tombola at ftombola@uci.edu (pdonovan@ad.uci.edu).

Admission Requirements and Application for Gateway Programs and Direct Admission:

To apply via the CMB or INP Gateway Programs, carefully review program and admission requirements and deadlines.

- Interdepartmental Neuroscience Program (INP): <https://inp.uci.edu/admissions-and-application/>
- Cellular & Molecular Biosciences (CMB): <https://cmb.uci.edu/admissions/>

Consult each program and the UCI Graduate Division website for information and instructions:

- <https://www.grad.uci.edu/admissions/index.php> (<https://www.grad.uci.edu/admissions/>)
- <https://www.grad.uci.edu/admissions/applying-to-uci/index.php> (<https://www.grad.uci.edu/admissions/applying-to-uci/>)
- Online Application: <https://apply.grad.uci.edu/apply/>

Admission Requirements and Application for the MSTP:

Carefully review program, admission requirements and deadlines as well as qualifications and eligibility requirements for the M.D./Ph.D. program: <https://mstp.uci.edu/admissions/application-process/>.

Application for qualifying individuals is made through the American Medical College Application Service (AMCAS).

Questions about admission should be directed to program faculty and staff.

Master of Science in Biomedical Sciences

The Master of Science degree in Biomedical Sciences may be completed by submission of a research thesis (plan I) or by course-work and a comprehensive exam (plan II).

Plan I: Thesis Plan. The student is required to complete at least four didactic graduate courses (16 units) offered by the department, and elective course work with an additional 8 units of graduate or upper-division undergraduate course work. In addition, the student will typically take additional

seminar courses during the graduate study. Students in the M.S. program may be employed as teaching assistants, but units earned through enrollment in University Teaching (399) may not be counted toward degree completion. The student engages in thesis research with a faculty thesis advisor, and will prepare and submit a dissertation to the thesis committee. The final examination is an oral presentation of the thesis to the committee. The normative time to degree is two years for the thesis M.S. degree.

Plan II: Comprehensive Examination Plan. The plan II M.S. degree is awarded based on completion of at least 36 units of course work and a satisfactory completion of a comprehensive exam. The student is required to complete at least 16 units (four courses) of didactic graduate course work offered by the department. In addition, the student will take up to 12 units of research. An additional 8 units or more of elective course work will be completed from other graduate courses offered by the department. A maximum of 4 units of upper-division undergraduate courses may be included in the program with the approval of the Associate Dean for Graduate Studies. Students in the M.S. program may be employed as teaching assistants, but units earned through enrollment in University Teaching (399) may not be counted toward degree completion. The comprehensive exam will be administered by a committee of at least three departmental faculty, and may include written and oral sections. The comprehensive exam format will include a research presentation and may include additional portions such as a research proposal, presentation of a project, or other components. The normative time to degree is one year for the M.S. degree by comprehensive exam.

Doctor of Philosophy

Comprehensive Examination-First Year. The student must pass comprehensive oral or written examinations at the discretion of the department. The examination is generally taken at the end of the first year of graduate study.

Advancement to Candidacy. The advancement to candidacy examination is taken before the end of the third year of graduate study. The student is expected to have identified an important and tractable dissertation research topic. A faculty committee for the advancement to candidacy examination is proposed by the faculty mentor in consultation with the student, and approved by the Department Graduate Advisor. A majority of the committee must hold primary or joint appointments in the student's department.

Once this examination is completed, the student is advanced to candidacy for the doctoral degree and is expected to complete the degree within three years. The student must submit a dissertation on this research and defend the thesis in an oral examination during the final year of graduate study. The normative time for completion of the Ph.D. is five years, and the maximum time permitted is seven years.

Graduate-student status or consent of instructor is a prerequisite for all 200–299 courses.

- Anatomy and Neurobiology
- Biological Chemistry
- Experimental Pathology
- Microbiology and Molecular Genetics
- Physiology and Biophysics