

# Doctor of Philosophy in Microbiology

## Molecular Biosciences Doctoral Programs

Molecular Biosciences is an interdisciplinary group of faculty, postdoctoral fellows and graduate students who perform cutting edge research across a wide range of areas (<https://molecularbiosciences.ku.edu/research-areas/>), including biochemistry, biophysics, structural biology, bioinformatics, cancer biology, genetics, genomics, immunology, microbiology, virology, neurobiology, molecular, cellular and developmental biology. Our researchers investigate fundamental biological and biomedical problems on all levels, from molecules to cells to organisms. Our research labs collaborate to solve complex questions using a range of approaches, and make use of the world-class core facilities at KU. The Department of Molecular Biosciences at the University of Kansas is an excellent environment for research and graduate training in biology.

The department offers Doctor of Philosophy degrees in Biochemistry and Biophysics (<http://molecularbiosciences.ku.edu/biochemistry-graduate-program/>), in Molecular, Cellular, and Developmental Biology (MCDB (<http://molecularbiosciences.ku.edu/mcdb-graduate-program/>)), and in Microbiology (<http://molecularbiosciences.ku.edu/microbiology-0/>). General information about the department, our faculty and students, and alumni of our graduate programs can be found on our website (<http://molecularbiosciences.ku.edu>). Detailed information about admission (<https://molecularbiosciences.ku.edu/graduate-admissions/>) and financial support (<http://molecularbiosciences.ku.edu/stipend/>) is also available.

Note that the various B.A. and B.S. undergraduate degree programs in biology are listed at the Biology Undergraduate Programs (<http://catalog.ku.edu/liberal-arts-sciences/biology/>) page.

## Admission to Graduate Studies

An applicant seeking to pursue graduate study in the College may be admitted as either a degree-seeking or non-degree seeking student. Policies and procedures of Graduate Studies govern the process of Graduate admission. These may be found in the Graduate Studies (<https://catalog.ku.edu/graduate-studies/>) section of the online catalog.

Please consult the Departments & Programs (<https://catalog.ku.edu/liberal-arts-sciences/>) section of the online catalog for information regarding program-specific admissions criteria and requirements. Special admissions requirements pertain to Interdisciplinary Studies degrees, which may be found in the Graduate Studies section of the online catalog.

## Graduate Admission

The Department of Molecular Biosciences (<http://molecularbiosciences.ku.edu/>) recognizes the importance of investing in the careers of future biomedical scientists. We welcome graduate students into our vibrant scientific community, where they have the opportunity to become outstanding researchers and prepare for an exciting future in science.

All students seeking a graduate degree must submit a formal application to the Molecular Biosciences graduate program. Full information on the application process, and a link to apply online can be found on our website (<https://molecularbiosciences.ku.edu/graduate-admissions/>).

Application materials for the Molecular Biosciences graduate program include:

1. An application form
2. 1 official copy of all academic transcripts (international students must also provide a translated copy);
3. A Curriculum Vitae or résumé (1 to 2 pages);
4. 3 letters of recommendation from qualified individuals using the Graduate Letter of Recommendation form;
5. A Statement of Research Interests and Goals. A strong statement will include: (a) A description of previous research experiences, if applicable, discussing how these have prepared you for graduate school both professionally and personally, (b) A discussion of your broad research interests, and (c) A description of your future career goals, discussing how a PhD from our department will help further these goals. (1-2 pages)
6. Application Fee
7. Non-native speakers of English must meet the English proficiency requirements for employment as a GTA/GRA: minimum TOEFL (iBT) SPEAKING score of 22, AND all other parts scores at least 20; or IELTS SPEAKING score of 8, with no other part score below 5.5. Scores must be less than 2 years old from the time of initial enrollment.

More information can be found here: <https://gradapply.ku.edu/english-requirements> (<https://gradapply.ku.edu/english-requirements/>)

GRE scores are not required for your application. You may submit your official GRE scores if you feel it will help the admissions committee better understand your academic capabilities. But electing not to submit scores will not impact your chance of admission.

Complete applications received by **December 1st** are reviewed by the Molecular Biosciences graduate admissions committee. Admission into our program is competitive, and we receive a large number of applications each year. Students will be informed of admission decisions early in the new year, admissions decisions are finalized by April 15, and newly admitted students matriculate in August.

Our holistic evaluation is based on several criteria, including grades, the strength of recommendation letters, previous research experience, and the fit of your career goals with our educational program.

The department is committed to enhancing diversity (<https://molecularbiosciences.ku.edu/dei-statement/>) in the life sciences, encourage participation from individuals with diverse life experiences, and strive to foster an inclusive research and training environment for all our faculty, students, and staff.

All supporting documentation should be uploaded online when you apply. If this is not possible, please send documentation to:

**Cassandra Jim**  
**Graduate Program Coordinator**  
**The University of Kansas**  
**Department of Molecular Biosciences**  
**Haworth Hall**  
**1200 Sunnyside Ave., Room 2034**  
**Lawrence, KS 66045**

## Microbiology

### General Requirements for all Molecular Biosciences Ph.D. Students

Students should be familiar with departmental expectations associated with their degree. We recommend contacting the Graduate Program Coordinator who can provide additional detail on departmental policies, recommendations, and requirements.

1. Complete a common first-year curriculum (see below). This includes BIOL 817, which satisfies both the responsible scholarship and the research skills requirements.
2. Establish a graduate advisory committee during Fall of the second year of graduate study at the latest. This committee must meet a minimum of once a year.
3. From the start of the second year of graduate study, enroll in either BIOL 701 Cellular and Molecular Proteins or BIOL 905 Advanced Molecular Genetics, every semester.
4. To assist with development and writing of the orals research proposal, enroll in BIOL 925 Research Grant Proposal Preparation during the second year of graduate study.
5. Prepare an orals research proposal. Steps include: (a) have a graduate advisory committee meeting to discuss the specific aims of the orals proposal during the semester BIOL 925 is taken, (b) following approval of the aims, write the full proposal, (c) submit a full draft of the proposal to your readers (your major advisor, the Chair of your orals committee, and one other committee member) the semester following enrollment in BIOL 925, and (d) submit the final version of the proposal to your entire committee prior to the comprehensive orals examination.
6. Schedule the comprehensive orals examination between May 1 and June 30 of the second year of graduate study.
7. Complete at least two semesters of teaching as a GTA (Graduate Teaching Assistant) during the program.
8. Write a dissertation based on original research, provide the document to your graduate advisory committee for evaluation, and describe your research in a public oral presentation.
9. Complete the degree within seven years. (Exceptions to this requirement require a recommendation from the Director of Graduate Studies.)

### First-year curriculum for all Molecular Biosciences PhD Students

Code	Title	Hours
BIOL 701	Topics in: _____ (Molecular Biosciences Seminar. Enroll in both Fall and Spring Semester of the first year.)	1-3
BIOL 807	Graduate Molecular Biosciences	3
BIOL 817	Rigor, Reproducibility and Responsible Conduct in Research	3
BIOL 985	Advanced Study (fall and spring semester)	1-10

### Specific Ph.D. Requirements: Microbiology

Code	Title	Hours
BIOL 811	Advanced Molecular and Cellular Immunology	
BIOL 812	Mechanisms of Host-Parasite Relationships	
BIOL 814	Advanced Molecular Virology	

BIOL 815	Advanced Molecular Genetics
BIOL 999	Doctoral Dissertation

Note that the graduate advisory committee may recommend that additional courses be taken.