

Microbiology

College of Medicine

The Ph.D. program in Microbiology is designed to prepare candidates for research careers in academics, industry, and government laboratories, as well as teaching careers at major universities and colleges. The program has at its heart a close student-mentor relationship that allows for the maximum flexibility in the development of independent and creative scientists and teachers.

Admission Requirements

Admission to the graduate program is competitive and is based upon academic background, professional recommendations, performance on either the Graduate Record Examination (GRE), experience, and when possible, personal interviews. Students should have completed an undergraduate degree in chemistry, biology, biochemistry, engineering, mathematics, neurosciences, physics, pharmacy or psychology. It is recommended that students have completed undergraduate courses in organic chemistry, physical chemistry, calculus, physics, and the biological sciences.

Students will have the opportunity to join faculty research programs across a spectrum of topics including: pathogenic microbiology, virology, cancer cell and molecular biology and cellular and molecular immunology. Specific research areas include microbial physiology, microbial pathogenesis, cellular and molecular immunology, mucosal immunology, host immune responses to infection, tumor immunology, lymphocyte differentiation, membrane biology, molecular virology, molecular genetics and gene regulation. Students will utilize the techniques of molecular biology, genetic engineering, genomics, proteomics, array technology, transgenic technology, hybridoma technology and fluorescence-activated cell sorting. The program of study is tailored to the individual background and career goals of the student and stresses an interdepartmental approach both in the selection of courses and in the pursuit of research. The most important aspect of the doctoral program is an independent research thesis under the direction of the student's mentor. Students have the opportunity to participate in graduate seminars, journal clubs, research seminars; to interact with visiting scholars; and to present the results of their research at national and international meetings. Financial aid is available for qualified students.

All students pursuing degrees in the biomedical sciences at the University of Kentucky, College of Medicine are admitted through the Integrated Biomedical Sciences (IBS) Curriculum. This first-year core curriculum provides broad-based exposure to biochemistry, cell biology, molecular biology, genetics, cell signaling and integrated physiology, as well as flexibility in selecting a research emphasis among 125 faculty in the Biomedical Sciences. Students select their doctoral degree program at the completion of the first year core curriculum from among the departments of Anatomy and Neurobiology; Microbiology, Immunology and Molecular Genetics; Molecular and Biomedical Pharmacology; Molecular and Cellular Biochemistry; Physiology, Toxicology, and the Nutritional Sciences. Inquiries regarding admission should be directed to the Director, Integrated Biomedical Sciences Curriculum, University of Kentucky College of Medicine, Lexington, KY 40536-0298. Information regarding the IBS program and admission forms are available on their web site: <http://www.mc.uky.edu/ibs/>. Information regarding the Microbiology program may be obtained from the Director of Graduate Studies, Department of Microbiology, Immunology and Molecular Genetics, University of Kentucky College of Medicine, Lexington, KY 40536-0298, (800.462.5257) or the Microbiology, Immunology and Molecular Genetics web site: <http://www.mc.uky.edu/microbiology/>.

Graduate Courses

MI 494G	Immunobiology (Same as BIO 494G)	(3)
MI 601	Special Topics in Molecular and Cellular Genetics (Same as BIO/BCH/PLS/PPA 601)	(1)
MI 604	Experimental Genetics (Same as IBS 605)	(2)
MI 615	Molecular Biology (Same as BIO/BCH 615)	(3)
MI 616	Biology and Therapy of Cancer (Same as MED 616)	(3)
MI 685	Advanced Immunobiology (Same as BIO 685)	(3)
MI 707	Contemporary Topics in Immunology (Same as BIO 707)	(2)
MI 710	Special Topics in Microbiology	(2-3)
MI 710-002	Microbial Pathogenesis	(2-3)
MI 720	Microbial Structure and Function (Same as BIO/OBI 720)	(4)
MI 748	Master's Thesis Research	(0)
MI 749	Dissertation Research (Same as MB 749)	(0)
MI 767	Dissertation Residency Credit	(2)
MI 768	Residence Credit for Master's Degree (Same as MB 768)	(1-6)
MI 769	Residence Credit for the Doctor's Degree (Same as MB 769)	(0-12)
MI 772	Seminar in Microbiology (Same as BIO 772)	(0-1)
MI 798	Research in Microbiology	(1-9)