Master of Science in Molecular and Integrative Physiology

The Master of Science (M.S.) in Molecular and Integrative Physiology prepares the student for a career at the advanced technical level in academia, industry or government. It may also lead to teaching positions at the secondary or junior college level.

The application process is an online process. Application to this graduate program is facilitated through the Interdisciplinary Graduate Program in Biomedical Sciences (IGPBS). (https://catalog.ku.edu/medicine/graduate-program-biomedical-sciences/) Detailed instructions on how to apply and the application deadlines are posted on the Interdisciplinary Graduate Program in Biomedical Sciences website http://www.kumc.edu/igpbs/how-to-apply.html.

Admission requirements:

- Bachelor's degree from a regionally accredited institution documented by submission of official transcript indicating the degree has been conferred before entering the program. Official transcripts from institutions attended post-baccalaureate are also required. Students with degrees from outside the U.S. may be subject to transcript evaluation indicating the degree is equivalent to a U.S. degree and meets the minimum cumulative GPA requirements.
- A cumulative grade-point average (GPA) of at least a 3.0 on a 4.0 scale for the bachelor's degree.
- Applicants who are not native speakers of English, whether domestic or international, must demonstrate they meet the Minimum English Proficiency Requirement (https://catalog.ku.edu/graduate-studies/kumc/#EnglishProficiencyRequirement).
- A background check (https://catalog.ku.edu/graduate-studies/kumc/#BackgroundCheck) is required during the admission process; it may affect the student's eligibility to enter the program.
- An official copy of the Graduate Record Examination (GRE) score sent from Educational Testing Service (ETS) to University of Kansas Medical Center - ETS institutional code 6895 - **GRE Scores NOT APPLICABLE TO THE IGPBS**.
- Three letters of recommendation.
- Prerequisite coursework:
  - One year of general chemistry
  - One year of organic chemistry or one semester of organic chemistry and one semester of biochemistry
  - One year of biological sciences
  - One semester of calculus
  - One semester of physics
- Research experience (beyond labs associated with lecture courses) is strongly suggested.
- Interview - the most qualified applicants will receive an invitation for an interview.

Applicants will be assessed based on a combination of GPA, research experience, and interview. After an applicant has been admitted, a program may defer an applicant's admission for one year after which time the applicant must submit a new application.

Admission requirements are subject to change. In most cases, use the catalog of the year student entered the program. *Other years' catalogs».*

Degree requirements:

- Degree requirements are normally completed within 3 years of admission to the program although a maximum of 7 years is allowed.
- Cumulative grade-point average (GPA) of at least a 3.0 for all KU graduate coursework.
- Completion of a minimum of 30 credit hours.
- Enrollment in a minimum of one (1) credit hour of PHSL 899 Master's Thesis the semester the student will defend thesis and graduate.
- Successful completion of the thesis defense (https://catalog.ku.edu/graduate-studies/kumc/#ThesisDefense).
- Successful thesis submission and publication (https://catalog.ku.edu/graduate-studies/kumc/#ThesisSubmission) (according to Office of Graduate Studies policy.)
- Successful completion of the following Interdisciplinary Graduate Program in Biomedical Science (IGPBS) (https://catalog.ku.edu/medicine/graduate-program-biomedical-sciences/) courses (or their equivalent):

Code	Title	Hours
GSMC 850	Proteins and Metabolism	2
GSMC 851	Molecular Genetics	2
GSMC 852	Introduction to Biomedical Research I	2
GSMC 853	Cellular Structure	2
GSMC 854	Cell Communication	2
GSMC 855	Introduction to Biomedical Research II	2
GSMC 856	Introduction to Research Ethics	1
GSMC 857	Biographics	1
GSMC 858	Introduction to Faculty Research	1
GSMC 859	Research Rotations	1-4

- Successful completion of the following Physiology courses:

Code	Title	Hours
PHSL 842	Comprehensive Human Physiology (or equivalent)	5
PHSL 850	Research	1-10
PHSL 899	Master's Thesis	1

- Successful completion of elective coursework as determined in consultation with the student's advisor.

Degree requirements and course descriptions are subject to change. Any courses taken as an equivalent must be approved by the Graduate Director and the Office of Graduate Studies. In most cases, use the catalog of the year student entered the program. *Other years' catalogs».*

Typical Plan of Study

Year 1

Fall	Hours	Spring	Hours	Summer	Hours
GSMC 850	2	GSMC 853	2	GSMC 859	1-4
GSMC 851	2	GSMC 854	2	May take an elective course from the student's chosen degree program in consultation with the student's advisor.	1-3
GSMC 852	2	GSMC 855	2		
GSMC 856	1	GSMC 859	1-4		
GSMC 857	1				
GSMC 858	1				
GSMC 859	1-4				
	10-13		**7-10**		**2-7**

Total Hours 19-30

Year 2

Fall	Hours	Spring	Hours	Summer	Hours
PHSL 842	5	PHSL 850	1-6	PHSL 850	1-6
PHSL 850	1-6	Elective courses	1-6	Elective courses	1-6
	6-11		**2-12**		**2-12**

Year 3

Fall	Hours	Spring	Hours	Summer	Hours
PHSL 899	1-5	PHSL 899	1-5	PHSL 899	1-5
Thesis defense scheduled semester approved by committee to defend and graduate.					
	1-5		**1-5**		**1-5**

Total Hours 13-50

TECHNICAL STANDARDS AND REQUIREMENTS FOR THE DEPARTMENT OF MOLECULAR AND INTEGRATIVE PHYSIOLOGY

The M.S. degree signifies that the holder is prepared for entry into research and/or teaching in postgraduate training and faculty positions. It follows that graduates must have the knowledge and skills to function in a broad variety of academic situations in the classroom and laboratory. Therefore all students admitted for graduate study must meet the following abilities and expectations.

1. Observation: The candidate must be able to observe demonstrations and experiences in the basic sciences, including but not limited to biology demonstrations in animals, cultures, and microscopic studies of tissues in normal and pathologic states. A candidate must be able to observe and analyze experimental detail. Observation necessitates the functional use of the sense of vision and somatic sensation.
2. Communication: A candidate should be able to communicate, to understand, and to observe lectures and laboratory instruction. A candidate must be able to communicate effectively in order to present and analyze research data. Communication includes not only speech, but also reading and writing. The candidate must be able to communicate effectively and efficiently in oral and written form with students, staff, and faculty.
3. Motor: Candidates should have sufficient motor function to carry out lab techniques. A candidate should be physically able to do laboratory procedures and analyze data. Such actions require coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.
4. Intellectual-Conceptual, Integrative, and Quantitative Abilities: The abilities include measurement, calculation, reasoning, analysis, and synthesis. Problem solving, the critical skill demanded of scientists, requires all of these intellectual abilities. In addition, the candidate should be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures.
5. Behavioral and Social Attributes: A candidate must possess the emotional health required for full utilization of his/her intellectual abilities, the exercise of good judgment and the prompt completion of all responsibilities attendant to the completion of research and teaching responsibilities. Integrity and motivation are personal qualities, which are required for success in science.

Disabled individuals are encouraged to apply. Applicants whose response indicates that they cannot meet these expectations will be reviewed and assessed by the Departmental Graduate Student Advisory Committee and KUMC Technical Support staff. At this review the provisions for reasonable accommodation will be determined.

For further information, contact Graduate Director, Department of Molecular and Integrative Physiology, G011 Wahl Hall East, Mail Stop 3043, University of Kansas Medical Center, 3901 Rainbow Blvd., Kansas City, Kansas 66160 Phone: (913) 588-7025

STUDENT POLICY ON INFECTIOUS DISEASE

Due to the need to assure the health and safety of students, faculty, and staff, the fact that an applicant for admission has an infectious disease or is the carrier of an infectious disease may be a factor in determining eligibility for academic program admission at the University of Kansas Medical Center. Determination of eligibility for admission in such cases will be made on an individual basis in consultation with the applicant’s physician, taking into consideration (among other factors), legal requirements and the current best medical information available to determine whether the applicant could complete the normal course of study with reasonable accommodation and without risk to him/herself or to others. Therefore, applicants having an infectious disease or who are carriers of an infectious disease must advise the Departmental Graduate Student Advisory Committee of this fact and may be required to provide medical records for review by the Student Health Physician in order to determine eligibility for admission.

DRUG FREE WORKPLACE POLICY OF THE UNIVERSITY OF KANSAS

It is the policy of the University of Kansas that unlawful manufacture, distribution, dispensing, possession, or use of controlled substances or alcohol is prohibited in buildings, facilities, or grounds controlled by the University. Any student found to be illegally manufacturing, distributing, dispensing, possessing, or using controlled substances or alcohol at the University or any of its affiliated educational sites, shall be subject to disciplinary action in accordance with applicable policies as outlined in the Graduate Student Handbook. Students are reminded that illegal

manufacture, distribution, dispensing, possession, or use of controlled substances may also subject individuals to criminal prosecution.