

Doctor of Philosophy in Neurosciences

Neurosciences Graduate Programs

The graduate program in neurosciences at the University of Kansas is a degree-granting program. Students are admitted directly into the program. The program is coordinated by the Lawrence campus of the university - with strengths in the behavioral, biological, chemical, and pharmaceutical sciences - and the Medical Center campus in Kansas City - with strengths in all the biomedical and clinical sciences. Each student is asked to indicate the campus on which he or she would like to be considered for admission. Students in this program should expect to be admitted to and receive a Ph.D. degree in neurosciences.

The program appeals to students who want to teach and/or do research in a university or do research in a pharmaceutical/biotechnology company or government laboratory. Students who are interested in this field wish to work out individual programs spanning a great breadth from molecular and cellular neurobiology to organism-based neurophysiology, behavioral neurobiology, and cognitive neuroscience. Students take advantage of the many research and training opportunities available at two campuses of a major research university. Our students can look forward to personal development in an atmosphere that fosters strong collaborative activities as well as independent scholarship. If this type of program fits your professional training expectations, we invite you to join us.

Applications and Program Administration

The administrative offices for the interdisciplinary neuroscience program are in School of Pharmacy in Lawrence and at the Hemenway Life Sciences Innovation Center in Kansas City.

All application materials are reviewed by faculty committees on the Lawrence and Kansas City campuses. Students should have B.A. or B.S. degrees in one of the following fields: anthropology, behavioral sciences (psychology, human development), biology, chemistry, engineering, neuroscience, or pharmacology. Preference is given to students who have completed courses in introductory biology and at least one course in advanced biology topics such as biochemistry, physiology, microbiology, molecular biology, and courses in introductory and organic chemistry or in calculus and physics. The graduate curriculum requires background knowledge in these fields. Students who do not have sufficient training will be asked to complete the appropriate courses before being admitted. The program requires submission of the standard GRE scores with all applications, three letters of recommendation, and an essay by the applicant about his or her career goals, i.e. why he or she wishes to become a neuroscientist. Selection of graduate students is based on grade-point average, Graduate Record Examination scores, letters of recommendation, and evidence of previous experience in research. The minimum standard acceptable for admission to the graduate program is a grade-point average of 3.0. Inquiries and applications are welcome at any time. Most students enter the program in August. Full consideration for August admission can be assured for all applications received by the **2nd Friday of January**.

The University of Kansas accepts only on-line applications. The fees are:
Domestic student on-line application fee: \$65
International student on-line application fee: \$85

The **deadline for receipt of application materials** to the Neuroscience Graduate Program is the **2nd Friday of January** in consideration for admission to the Fall semester. **Institution Code: 6871 / Neuroscience Program Code: 0213**

Online application (<http://graduate.ku.edu/ku-graduate-application/>)

For further information, contact

The University of Kansas
Neuroscience Graduate Program
c/o Dr. Rick Dobrowsky
School of Pharmacy, Ste 2001-D
2010 Becker Drive
Lawrence, KS 66047
Telephone: (785) 864-3531 or (785) 864-3893
E-mail: neuroscience@ku.edu

or

KUMC Online application The University of Kansas Medical Center
Neuroscience Graduate Program c/o Dr. Julie A. Carlsten Christianson
2087 HLSIC 3901 Rainbow Blvd. Kansas City, KS 66160 Telephone:
(913) 945-6430 E-mail: jchristianson@kumc.edu

KUMC Online application (<http://www.kumc.edu/school-of-medicine/neuroscience.html>)

The University of Kansas Medical Center

Neuroscience Graduate Program
c/o Julie A. Carlsten Christianson
2087 HLSIC
3901 Rainbow Blvd.
Kansas City, KS 66160
Telephone: (913) 945-6430
E-mail: jchristianson@kumc.edu

Ph.D. Degree Requirements

The program consists of coursework, research experience, and the successful completion of a doctoral dissertation. Dissertation research culminates in a final dissertation examination consisting of an oral presentation by the candidate and an examination by the faculty.

There is considerable flexibility in the neuroscience curriculum to accommodate specific interests of the students and course availability. Relevant prior graduate work is taken into consideration in setting up individual programs of study leading to the Ph.D. The neuroscience curriculum is subdivided into core and elective courses that all students must complete.

Course choices should be done by consulting your mentor and the Director of the Neuroscience Program prior to establishing a graduate committee. A 5-member faculty advisory committee including at least 3 members of the neuroscience program should be in place at the beginning of the second year of study to help the student choose electives if needed but more so to provide guidance on the research progress. Students should meet with the committee in the Fall of their second year of study and present their research progress to the committee and an outline of their thoughts for preparing a 6 page proposal for their oral defense in the spring/summer of the second year

Continued enrollment in the neuroscience seminar is required and students are expected to present a yearly seminar. This can constitute a

literature review for first year students and subsequent presentations are typically on research progress.

Students also receive training in the responsible conduct of research and teaching in the neurosciences. For the Ph.D., the student completes the core curriculum as well as research skills training, comprehensive oral examination (<https://policy.ku.edu/office/Graduate-Studies/>), preparation of a dissertation (<https://policy.ku.edu/office/Graduate-Studies/>), and final oral examination and defense (<https://policy.ku.edu/office/Graduate-Studies/>) of the dissertation.

All students must complete a research skill (<https://policy.ku.edu/office/Graduate-Studies/>). Commonly used areas are radiation biology and radiation safety, cell culture methodology, techniques of electron and confocal microscopy, molecular biology laboratory training, computer science training, statistics, and training in electronics and instrumentation.

Note: Contact your department or program for more information about research skills and responsible scholarship, and the current requirements for doctoral students. Current Lawrence and Edwards Campus policies on Doctoral Research Skills and Responsible Scholarship are listed in the KU Policy Library (<https://policy.ku.edu/office/Graduate-Studies/>).

Given the breadth of neuroscience research, the Neuroscience curriculum at KU-Lawrence is individualized for each student's needs and interests. However, there is a series of core courses the student will need to either have taken or complete during the program. A range of elective courses in statistics, genomics, medicinal chemistry, pharmacology, toxicology, sensory and developmental neurobiology or molecular cell biology may supplement the core courses. Credit hours listed.

Core Curriculum for the Ph.D. in Neurosciences

Code	Title	Hours
REQUIRED		
BIOL 636/ GSMC 850	Biochemistry I (or other graduate level biochemistry/ Proteins & Metabolism)	4
NURO/NEUS 799	Neuroscience Seminar Series (Required each semester)	1
NURO/NEUS 800	Neuroscience Teaching Principles	2
NURO 801/ GSMC 856	Issues in Scientific Integrity	1
NURO 805	Neuroscience Literature Review	1
NURO 825/ NEUS 990	Research in Neuroscience	1-10
NURO/NEUS 846	Advanced Neuroscience	4
NURO/NEUS 999	Neuroscience Doctoral Dissertation	1-11
ELECTIVES		
BIOS 720	Analysis of Variance (offered through KUMC statistics program)	3
P&TX/NEUS 730	Advanced Pharmacology I - CNS and ANS (Neuropharmacology - offered through KU Pharmacology and Toxicology)	2
NURO/NEUS 848	Molecular Mechanisms of Neurological Disorders	3
NURO/NEUS 850	Sensory Biology	2
NURO/NEUS 851	Clinical and Biological Basics of Dementia	1