

DOCTORAL

Pharmacology and Neuroscience

School of Pharmacy

SIUE



siue.edu/pharmacology-neuroscience

Degrees Available at SIUE

Pharmacology and Neuroscience - Cooperative PhD at SIUE
The School of Pharmacy at SIUE participates in the Doctor of Philosophy in pharmacology and neuroscience offered by the School of Medicine at SIUC. Students who have a passion for research and are driven to make an impact through a career in drug discovery or other areas of pharmaceutical sciences in both industry and academia should consider pursuing this program.

Collaboration between experts in medicinal chemistry and regional leaders in neuroscience and pharmacology has allowed for the creation of a degree opportunity that will help meet the demands of the fast-moving biotechnology field.

What can I do with a degree in pharmacology and neuroscience?

With a degree in pharmacology and neuroscience, students can pursue careers in:

- Drug design and discovery
- Pharmacodynamic and translational research
 - Industry and academic settings

Degrees Available at SIUE

- Doctor of Philosophy

Specialization

- Medicinal Chemistry

Admission Requirements

To be considered for this program, students must first apply for the PhD program through the SIU School of Medicine and select the option for the cooperative program with the SIUE School of Pharmacy.

Students with an interest in pursuing pharmacology and neuroscience can be nominated by SIUC, at which time materials submitted for the SIUC application will be shared with SIUE. Nominated students will receive an email with instructions to complete and submit the SIUE application for final consideration. The preferred application deadline is February 15 for fall applications. SIUE will not require an application fee. If additional materials or documentation is required, students will be notified promptly.

Admission to the program will be granted by the SIU School of Medicine. Concurrent admission by SIUE in unclassified status is required to register for SIUE coursework.

Please contact the Office of Graduate Admissions with questions regarding the application submission process at graduateadmissions@siue.edu.

Graduation Requirements

- Maintain a GPA of at least 3.0 (A=4.0)
- Complete 24 semester hours in residency
- Pass a comprehensive written preliminary exam covering core coursework
- Complete four semester hours of PHRM 501 with a grade of B or better
- Be admitted to candidacy
- Present an oral proposal or proposed dissertation research
- Submit at least one manuscript for publication in a peer-reviewed journal
- Complete 24 hours of dissertation research
- Defend dissertation
- Deposit dissertation with the SIUC Graduate School

Please reference the SIUC Graduate Catalog for additional details.

Curriculum

The minimum course requirements in the pharmacology and neuroscience PhD program are listed in the SIUC Graduate Catalog and on the SIU School of Medicine Department of Pharmacology website. Students must complete core coursework, electives, research tools and dissertation research credit. The required core coursework includes:

- PHRM 550A and B Principles of Pharmacology (8)
- PHRM 577 Neuroscience (4)
- PHRM 530 Advanced Pharmacology and Neuroscience (3)
- Research Tools (at least two as outlined by the Graduate College)
- PHRM 501 or 500 (1 credit each semester in residence)
- PHRM 540 Responsible Conduct of Research
- SIUC's 601 Continuing Enrollment Course (SIUE students will be registered for 601 at SIUC without any charge)

Elective coursework, up to 24 credit hours, will be taken within an area of chosen concentration. The student and the research supervisor(s), in consultation with the student's graduate committee, will determine specific courses. If a student chooses an area of concentration in medicinal chemistry, core coursework can be substituted at the discretion of the graduate

program committee. The multi-disciplinary curriculum for each concentration is customized to meet the student's individual interests and career goals.

In addition, an SIUE student must register for 12 of the 24 credit hours of dissertation research for residency at SIUC and for the remaining 12 credit hours at SIUE. Only six hours of dissertation research credit may be taken prior to the oral defense of the dissertation proposal and approval of the dissertation proposal.

Medicinal Chemistry Specialization Curriculum

Required Courses

- (4) PHPS 420 Principles of Pharmacology
- (3) PHPS 500 Current Targets for Drug Discovery
- (3) PHPS 501 Principles of Rational Drug Discovery
- (3) CHEM 541 Advanced Organic Chemistry
- (3) CHEM 551 Advanced Biochemistry
- (1) PHRM 501 Introduction of Seminar (SIU School of Medicine)
- (1) PHRM 500 Pharmacology Seminar (SIU School of Medicine)
- (1) PHRM 540 Responsible Conduct of Research (SIU School of Medicine)

Research Tools

PhD students are required to take two of these courses (SIU School of Medicine requirement), but can take more if they choose. PHRM 552 is required for all students, CHEM 531 is required for synthetic chemistry students while CHEM 561 is required for computational chemistry students.

- (3) PHRM 552 Applied Statistics for the Basic Sciences (SIU School of Medicine)
- (3) CHEM 531 Advanced Analytical Chemistry
- (3) CHEM 561 Advanced Physical Chemistry
- (4) PHRM 551 Methods in Pharmacology (SIUE or SIU School of Medicine)
- (3) MBMB 504 Research Methods (SIU School of Medicine)

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Contact Information

Graduate Program Director
Phone: 618-650-5129
Email: joschob@siue.edu