

## School of Pharmacy

### Degrees Available at SIUE

- Master of Science

Areas of Concentration: Medicinal Chemistry, Pharmacology, Pharmaceutics

### Pharmaceutical Sciences at SIUE

While pharmacists work to manage patient care with emphasis on therapies using existing drugs, pharmaceutical scientists are engaged in the discovery and development of new drugs. The pharmaceutical sciences provide a multidisciplinary approach to not only determine the detailed biological mechanism of disease, but develop the molecular interventions that can provide the treatment or cure. Students are taught by an internationally-recognized faculty, with many years of both academic and pharmaceutical industry experience, in state-of-the-art laboratories.

### Faculty

At the SIUE School of Pharmacy Department of Pharmaceutical Sciences, our faculty provides opportunities for students to study in three of the main areas of the discipline. Our medicinal chemistry faculty enables students to explore all aspects of drug design and discovery, including computational methods, structure-activity studies, synthetic methods development and natural products chemistry. Our pharmacology team enables students to engage in studying the cellular signaling pathways that are important in disease processes and the mechanism of action of drug candidates for treating the resulting diseases, including pharmacogenomic aspects of patient populations. Our pharmaceutics faculty guides students in the study of mathematical, computational and experimental methods to study the pharmacokinetics (ADME) of drug molecules in vivo, as well as all aspects of drug delivery.

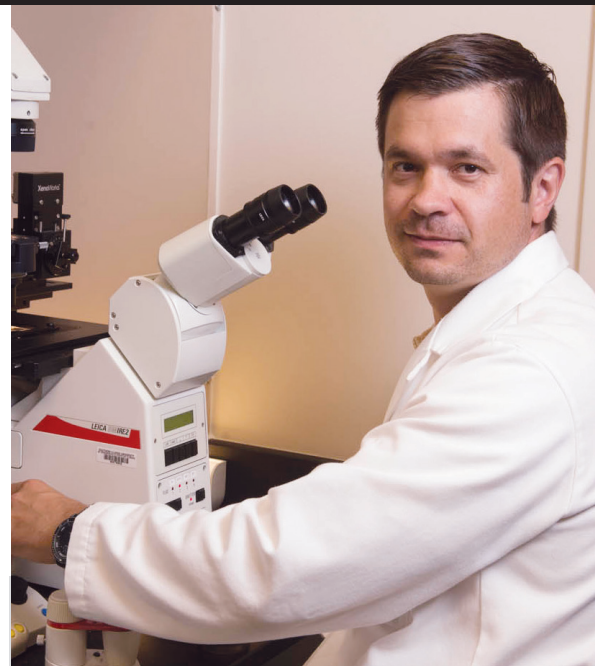
### Career Opportunities

This master's program prepares students for research positions in the pharmaceutical sciences (industrial, academic or government), or to pursue PhD degrees in health sciences, medical and drug discovery research. In addition, students will be prepared for the sciences component of other non-research but science- and technology-related positions relevant to the pharmaceutical industry (e.g. evaluation of new technologies for business development units, scientific patent advising, administration, consulting). Data from the Bureau of Labor Statistics, U.S. Department of Labor, indicates a continued growth rate for medical scientists of 8% between the years 2014-2024.

### Admission Requirements

In addition to the requirements for admissions to the SIUE graduate school (which include an application fee of \$30, submission of official transcripts, and a formal application to the Graduate Admissions Office), candidates will be evaluated on the following criteria:

- Completion of a baccalaureate degree in pharmacy, chemistry, or the biological sciences. Prior academic work should include a year each of biology or biochemistry and organic chemistry.
- Graduate Point Average: at least 3.00 (A = 4.00) for the final 60 semester hours of baccalaureate study.
- Graduate Record Examination (GRE) general is required. The GRE advanced subject (chemistry, biochemistry or biology) test is optional.
- For International Applicants a minimum TOEFL Score of 550 (paper based); 213 (computer based), or 79 (internet based) is required.
- Letters of Recommendation: Three required.
- Personal Statement: Required.



### Graduate Assistantships

Graduate assistantships for teaching, research and related administrative duties are available. Assistantships include a tuition waiver and monthly stipend. A graduate assistantship enhances your educational experience and helps to develop valuable professional skills.

SOUTHERN ILLINOIS UNIVERSITY  
**EDWARDSVILLE**  
SCHOOL OF PHARMACY

## Sample Two-Year Curriculum-Pharmaceutical Sciences

### Medicinal Chemistry Track

	FALL SEMESTER	SPRING SEMESTER
<b>YEAR 1</b>	<b>PHPS 500</b> Cellular Targets For Drug Discovery 3 <b>PHPS 520</b> Principles of Pharmacology 3 <b>PHPS 510</b> Pharmaceutical Sciences Foundations and Research Methods 1 Total 7	<b>PHPS 501</b> Principles of Rational Drug Discovery 3 <b>PHPS 540</b> Pharmacokinetics 3 <b>PHPS 598</b> Pharmaceutical Sciences Research 2 Total 8
<b>YEAR 2</b>	PHPS Elective- 1 2 <b>PHPS 595</b> Graduate Seminar in the Pharmaceutical Sciences 1 <b>PHPS 598</b> Pharmaceutical Sciences Research 2 Total 5	PHPS Elective- 2 3 <b>PHPS 595</b> Graduate Seminar in the Pharmaceutical Sciences 1
<b>YEAR 2</b>	<b>SUMMER SEMESTER (IF NEEDED)</b> PHPS 599 Pharmaceutical Sciences Thesis Preparation 3	

### Pharmacology Track

	FALL SEMESTER	SPRING SEMESTER
<b>YEAR 1</b>	<b>PHPS 520</b> Principles of Pharmacology 3 <b>PHPS 500</b> Cellular Targets For Drug Discovery 3 <b>PHPS 510</b> Pharmaceutical Sciences Foundations and Research Methods 1 Total 7	<b>PHPS 501</b> Principles of Rational Drug Discovery 3 <b>PHPS 540</b> Pharmacokinetics 3 <b>PHPS 598</b> Pharmaceutical Sciences Research 2 Total 8
<b>YEAR 2</b>	<b>PHPS Elective-1</b> 2 <b>PHPS 595</b> Graduate Seminar in the Pharmaceutical Sciences 1 <b>PHPS 598</b> Pharmaceutical Sciences Research 2 Total 5	<b>PHPS Elective- 2</b> 3 <b>PHPS 595</b> Graduate Seminar in the Pharmaceutical Sciences 1 <b>PHPS 598</b> Pharmaceutical Sciences Research 3 Total 7
<b>YEAR 2</b>	<b>SUMMER SEMESTER (IF NEEDED)</b> PHPS 599 Pharmaceutical Sciences Thesis Preparation 3	

### Pharmaceutics Track

	FALL SEMESTER	SPRING SEMESTER
<b>YEAR 1</b>	<b>PHPS 500</b> Cellular Targets For Drug Discovery 3 <b>PHPS 541</b> Drug Delivery 3 <b>PHPS 510</b> Pharmaceutical Sciences Foundations and Research Methods 1 Total 7	<b>PHPS 501</b> Principles of Rational Drug Discovery 3 <b>PHPS 540</b> Pharmacokinetics 3 <b>PHPS 598</b> Pharmaceutical Sciences Research 2 Total 8
<b>YEAR 1</b>	<b>SUMMER SEMESTER</b> PHPS 598 Pharmaceutical Sciences Research 3	
<b>YEAR 2</b>	<b>PHPS Elective-1</b> 2 <b>PHPS 595</b> Graduate Seminar in the Pharmaceutical Sciences 1 <b>PHPS 598</b> Pharmaceutical Sciences Research 2 Total 5	<b>PHPS Elective- 2</b> 3 <b>PHPS 595</b> Graduate Seminar in the Pharmaceutical Sciences 1 <b>PHPS 598</b> Pharmaceutical Sciences Research 3 Total 7
<b>YEAR 2</b>	<b>SUMMER SEMESTER (IF NEEDED)</b> PHPS 599 Pharmaceutical Sciences Thesis Preparation 3	

### Graduation Requirements

Students will be required to complete at least 30 hours of acceptable graduate credit with a grade point average of 3.0 or higher (A = 4.0). At least 12 semester hours must be earned from core courses and 2 semester hours from graduate seminar. Students must take a minimum of 4 hours of electives but may take up to 25 hours of electives if desired.

At least 10 semester hours must be earned for research and students must be enrolled in a minimum of 1 hour of research per semester after choosing an advisor. Students must complete a thesis based upon the student's original research work.

Finally, students must assemble an advisory committee and meet with this committee for a public presentation and oral defense of the thesis.