

Doctor of Philosophy in Pharmaceutical Chemistry

Pharmaceutical Chemistry Graduate Programs

Pharmaceutical Chemistry is a broad discipline that integrates diverse areas of science ranging from biological to chemical sciences. Students in the program will become familiar with aspects of physical, organic and analytical chemistry, chemical kinetics, biopharmaceutics and pharmacokinetics, and biotechnology including vaccines. To address these needs, the department offers a series of core courses (refer to the graduate student handbook <http://www.pharmchem.ku.edu> (<http://www.pharmchem.ku.edu/>)) designed to hone the student's skills in these topical areas, which are considered essential in understanding problems of biological, biophysical and chemical processes at the molecular level. Every student entering the program is expected to complete the core courses during the first three semesters of graduate study. Students can choose from a variety of elective courses that allow them to gain knowledge and skills in areas specific to individual research project interests. The department places emphasis on excellence in research making every effort to ensure that students can maximize efforts on their research projects toward earning the Ph.D. degree in a timely fashion.

Admitted students receive a competitive stipend, tuition, and basic health insurance. Students also can be selected to participate in the Takeru Higuchi and Nigel Manning Ph.D. Intersearch Program, allowing them to conduct a portion of their research at the Victorian College of Pharmacy (<http://www.vcp.monash.edu.au> (<https://www.monash.edu/pharm/>)) at Monash University in Melbourne, Australia. In addition, students are encouraged to participate in other industrial and/or academic internship programs the department offers.

Graduate Admission

Students with a bachelor level degree or a master's degree in chemistry, pharmacy, the biological sciences, material sciences, chemical engineering or related disciplines are encouraged to seek admission to our program. Except under unusual circumstances, we review and accept candidates for admission into the fall semester only. All information must be delivered to us before we can begin to consider your application. Entering students are expected to be competent in basic principles of organic chemistry, physical chemistry and two semesters of calculus equivalent to KU MATH 121/122.

Refer to the website (<http://pharmchem.ku.edu/academics-overview> (<http://pharmchem.ku.edu/academics-overview/>)) then consult the link Admissions and Requirements, then the sub-link Admissions Requirements for details. Although the department does not have a formal application deadline, the faculty begins evaluations of applications around January 15 each year. To ensure full consideration, it is highly recommended that complete applications be in the department far in advance of **January 15**.

Admitted students receive a competitive stipend, tuition, and basic health insurance. Students also can be selected to participate in the Takeru Higuchi and Nigel Manning Ph.D. Intersearch Program, allowing them to

conduct a portion of their research at the Victorian College of Pharmacy (<http://www.vcp.monash.edu.au> (<https://www.monash.edu/pharm/>)) at Monash University in Melbourne, Australia. In addition, students are encouraged to participate in other industrial and/or academic internship programs the department offers.

A number of fellowship awards are offered to recognize academic superiority and to assist meritorious students in the timely completion of their degree programs. The number of fellowships awarded each year depends upon available funds. For a description of funding opportunities for KU graduate students, visit the Graduate Studies website (<https://graduate.ku.edu/funding> (<https://graduate.ku.edu/funding/>)). Students with particularly outstanding undergraduate records may be eligible for special awards. The Department of Pharmaceutical Chemistry is a Madison and Lila Self Graduate Fellowship Program (<http://selfgraduate.ku.edu> (<http://selfgraduate.ku.edu/>)) partner at KU. The program provides a generous stipend and tuition to outstanding students for 4 years of graduate study. At the department level, the Higuchi, Lindenbaum, Rytting, Stella, and Waugh Fellowships are awarded each year to incoming graduate students with high promise.

Any materials sent directly to the department should be directed to:

The University of Kansas
Department of Pharmaceutical Chemistry
Attn: Michelle Huslig
Simons Labs
2095 Constant Ave., Room 182
Lawrence, KS 66047
Telephone: 785-864-4822, fax: 785-864-5736, mrhuslig@ku.edu

Ph.D. Degree Requirements

Entering Background

Students entering the program are expected to be competent in basic principles of physical/organic chemistry and mathematics. These requirements are typically satisfied by most degrees in the basic or pharmaceutical sciences. One year of organic chemistry for majors, a physical chemistry course that includes classical thermodynamics, and two semesters of calculus equivalent to KU MATH 121/122.

Core Courses and Foundation Exam

All students participating in the Pharmaceutical Chemistry Ph.D. program are required to take eight (8) core courses, which are designed to ensure that graduates maintain the department's long-standing reputation for strength in the physical-chemical sciences as they relate to modern research in Pharmaceutical Chemistry (Pharmaceutics). After satisfactory completion of the eight (8) core courses the student is eligible to take the Foundation Exam.

Research Skills (RS2) and Elective Requirements

Graduate students must take one elective course in addition to core courses. This may be from the courses offered by the Department of Pharmaceutical Chemistry or from other science and engineering departments on campus with prior approval from the graduate director. This requirement must be completed prior to undertaking the comprehensive examination at the end of year 2.

Comprehensive Examination for Ph.D. Students

The student will be eligible for the comprehensive examination subsequent a satisfactory performance on the Foundation Exam and the completion of RS2 requirements. The exam will be based on a series of oral questions based upon an oral presentation of a research proposal focused on their research. For addition details refer to the website (<http://pharmchem.ku.edu/academics-overview>) then consult the link Department Graduate Student Handbook. Upon passing the comprehensive examination, students continuing on to the Ph.D. degree will receive a non-thesis M.S. degree.

Dissertation

Each Ph.D. candidate must submit and defend a dissertation resulting from research of sufficient originality and quality for publication in peer-reviewed scientific journals. The research is conducted under the supervision and guidance of the student's advisor, with input from the dissertation committee as needed. The median time for students to complete the Ph.D. degree is 5.3 years.

Distance Ph.D. Degree Program

The department also offers a distance Ph.D. program. Admittance is offered to a limited number of highly qualified students who excelled while completing the Distance M.S. degree program. Interested students should inquire with their M.S. advisor, onsite advisor and the graduate director for details. This program features the same didactic coursework and research requirements as in the onsite Ph.D. program but allows students to complete the degree while working at a remote location. For questions, contact the graduate director, John Stobaugh, 785-864-3996, stobaugh@ku.edu.

At the completion of this program, students will be able to:

- Acquire & Demonstrate Core Knowledge.
- Demonstrate Background Knowledge.
- Demonstrate Writing Skills.
- Demonstrate Oral Communication Skills.
- Execute Data Analysis Skills.
- Exhibit Critical Thinking.