Applicants are expected to have a bachelor’s degree (or higher) in Biochemistry, Biology, Chemistry, Pharmacy or related sciences. In addition, those applying for the Pharmacology degree track must have taken 3 credit hours of advanced human physiology and 3 credit hours of biochemistry before admission or during the first graduate year.

All of our students receive financial support as either teaching or research assistants, as well as support for travel to scientific conferences. Students also may be eligible for college/university scholarships and/or fellowships. Interested individuals are encouraged to visit the college website for complete program details, including admission requirements.

About the University of Houston

The University of Houston (UH) is a Carnegie-designated Tier One public research university recognized by The Princeton Review as one of the nation’s best colleges for undergraduate education. UH serves the globally competitive Houston and Gulf Coast Region by providing world-class faculty, experiential learning and strategic industry partnerships. Located in the nation’s fourth-largest city, UH serves more than 40,000 students in the most ethnically and culturally diverse region in the country.

About UH College of Pharmacy

For more than 65 years, UH College of Pharmacy has shaped aspiring pharmacists, scientists and researchers. Founded in 1946, UH College of Pharmacy combines the opportunities and experiences of the Texas Medical Center’s world-class healthcare community with resources of the University of Houston, Texas’ premier urban teaching and research university, to offer its students the best possible education. The college is accredited by the Accreditation Council for Pharmacy Education and holds membership in the American Association of Colleges of Pharmacy.
Ph.D. in Pharmacology, Pharmaceutics, or Pharmacology/Medicinal Chemistry

The Doctor of Philosophy (Ph.D.) degree programs in Pharmacology, Pharmacology/Medicinal Chemistry and Pharmaceutics emphasize independent research, didactic classroom and in-depth study of a pharmacological or pharmaceutical problem in each student’s chosen research specialty. These programs enable students to master the skills necessary for careers in academia, industry and government.

Pharmacology
Pharmacology studies the mechanisms of action of drugs, and their effects on normal and disease states, by integrating chemistry, biochemistry, cell and molecular biology and physiology. Students develop projects in the areas of renal physiology, autonomic and central nervous systems, cardiovascular, renal and pulmonary pharmacology, signal transduction, and the cellular physiology of exercise.

Pharmacology/Medicinal Chemistry
A concentration in Pharmacology/Medicinal Chemistry can be pursued in the areas of virtual drug screening and design, high throughput drug screening and drug synthesis, characterization of drug targets and development of novel therapeutic interventions, and therapeutic natural product screening and identification.

Pharmaceutics
Pharmaceutics emphasizes development of novel drug delivery methods, absorption, metabolism and drug formulations. Early course work provides a solid foundation in pharmaceutics, pharmacokinetics, physical pharmacy, dosage formulation and delivery systems. Areas of research interest include oral dosage formulations, transdermal and liposomal drug delivery, therapeutic DNA delivery, absorption and metabolism, and pharmacokinetics.

Curriculum
The degree tracks in Pharmaceutics, Pharmacology or Pharmacology/Medicinal Chemistry consist of common and specialty courses, with the entire course of study for the doctoral program anticipated to take approximately five years after obtaining a bachelor’s degree. The student must complete a minimum of 80 hours for the Ph.D. degree, including 40 hours of research. In accordance with UH guidelines, the department may approve a maximum of 9 hours of transfer credits from another institution.

A cumulative grade point average of at least 3.00 (A=4.00) must be maintained in all required graduate-level courses required for the Ph.D. degree in order to obtain an advanced degree from the college. Before formal admittance to doctoral candidacy, students must pass a qualifying examination prepared and administered by the student’s dissertation committee as well as present and defend a research proposal to this committee.

Department Faculty
The college’s faculty includes investigators with active National Institutes of Health-supported projects, U.S. and international patents, editorial appointments on high-impact journals, and collaborations with colleagues at fellow Texas Medical Center institutions, including M.D. Anderson Cancer Center, Baylor College of Medicine and The University of Texas Health Science Center at Houston.

Research Programs
Specific areas of investigation and discovery include identifying and developing novel drug targets and therapeutic agents/drug delivery systems for cancer, cardiovascular disease, obesity, hypertension, Alzheimer’s and other neurodegenerative diseases, Fragile X Syndrome and other forms of mental disability, asthma, chronic stress and anxiety, diabetes, alcohol abuse, infectious diseases and inflammation. In addition, several ongoing projects are exploring drug metabolism and transport, and how these processes are affected in disease states.

Faculty and student investigators have access to some of the latest laboratory tools and technology, including high-throughput drug screening systems, 3-D molecular modeling, confocal imaging, nuclear magnetic resonance, mass spectroscopy and genetically modified mice. These resources are located on the UH campus and at the nearby Texas Medical Center.

Students within the college have abundant opportunities to make presentations at international, national, regional and local competitions, and author or contribute to publications in high-impact journals.