PHARMACOLOGY

OVERVIEW
The Department of Pharmacology offers a Thesis Master’s for a Master of Science degree. This is a course and research based program, with 24 credits in course work, and 6 in research. A thesis is written and there is a defense. Research interests are diverse, with special emphasis on cardiovascular and cerebrovascular pharmacology, physiology, neurovascular coupling, signal transduction, and medicinal chemistry/cancer chemotherapy. In addition to the Pharmacology M.S., the pharmacology faculty participate in interdisciplinary doctoral programs in neuroscience, and cellular, molecular, and biomedical sciences found elsewhere in this catalogue.

DEGREES
• Pharmacology M.S.

FACULTY
Brayden, Joseph Elliott; Professor, Department of Pharmacology; PHD, University of Vermont
Carr, Frances Eileen; Professor, Department of Pharmacology; PHD, University of Illinois Chicago
Dostmann, Wolfgang R. G.; Professor, Department of Pharmacology; PHD, University of Munich
Heppner, Thomas Jon; Assistant Professor, Department of Pharmacology; PHD, Iowa State University
Howe, Alan K.; Associate Professor, Department of Pharmacology; PHD, Northwestern University
Lounsbury, Karen M.; Professor, Department of Pharmacology; PHD, University of Pennsylvania
McCormack, John; Professor Emeritus, Department of Pharmacology; PHD, Yale University
Morielli, Anthony D.; Associate Professor, Department of Pharmacology; PHD, University of California Berkeley
Nelson, Mark Tuxford; Professor, Department of Pharmacology; PHD, Washington University in St Louis
Wellman, George C.; Professor, Department of Pharmacology; PHD, University of Vermont

Courses
PHRM 201. Introduction to Pharmacology. 3 Credits.
This course will focus on biochemical and physiological actions of prototype drugs used in the treatment and prevention of human diseases. Prerequisite: Introductory courses in Biology and Organic Chemistry.

PHRM 240. Molecules & Medicine. 3 Credits.
This course conveys an understanding about drug design and the molecular mechanisms by which drugs act in the body. It highlights the importance of medicinal chemistry as it overlaps with the disciplines of chemistry, biochemistry, microbiology, cell biology, and pharmacology. Prerequisites: Intro to Organic Chemistry, Intro to Biology; Permission.

PHRM 272. Toxicology. 3 Credits.
This course is intended to provide an understanding of the chemical, biochemical and physiological factors that determine the pathological effects of chemicals in living systems. Prerequisites: Organic chemistry, background in Biology, or Instructor permission.

PHRM 290. Topics Molecular&Cell Pharm. 3 Credits.
Focuses on basic principles, drug interactions with receptors, membranes, synapses, neurotransmitters, macromolecules, cytoskeleton, ion channels and pumps, and mechanisms of drug resistance. Prerequisite: Introductory course in organic chemistry, background in physiology or health sciences.

PHRM 301. Medical Pharmacology. 6 Credits.
All topics for a conventional course in pharmacology for medical students or health science students. General pharmacokinetic and pharmacodynamic principles, treatment rationales and adverse effects.

PHRM 302. Pharmacological Techniques. 2 Credits.
Experiments conducted under supervision in the areas of drug metabolism, modes of drug action, physicochemical properties of drugs, bioassay, and toxicology.

PHRM 303. Pharmacological Techniques. 2 Credits.
Experiments conducted under supervision in the areas of drug metabolism, modes of drug action, physicochemical properties of drugs, bioassay, and toxicology.

PHRM 305. Milestones in Pharmacology. 2 Credits.
A critical readings class where students read and present landmark pharmacology papers and link them to modern experiments and clinical applications. Co-requisites: PHRM 201 or Graduate standing.

PHRM 372. Special Topics. 1-3 Credits.
Topics of current interest and importance in pharmacology are considered in depth through presentations by staff, students, and visiting scientists. Prerequisite: Instructor Permission. Credit variable.

PHRM 373. Readings in Pharmacology. 2 Credits.
Intensive directed reading in one area of pharmacology. Pharmacology students must choose a topic outside thesis research area. Term paper and seminar on selected topic required. Prerequisite: Instructor Permission.

PHRM 381. Seminar. 1 Credit.
Current developments in pharmacology are presented for discussion by students. Prerequisite: Instructor Permission.

PHRM 391. Master’s Thesis Research. 1-12 Credits.

PHRM 491. Doctoral Dissertation Research. 1-12 Credits.