

Graduate Program in Pharmaceutical Sciences

The **Pharmaceutical Sciences Ph.D. Program** at the University of Wisconsin-Madison School of Pharmacy provides a rigorous background in a range of scientific disciplines that are critical to the success of pharmaceutical scientists. With 25 faculty members and approximately 50 graduate students, the program's interdisciplinary training combines pharmaceutically relevant aspects of classical disciplines such as chemistry, biology and engineering. Students earn a Ph.D. in Pharmaceutical Sciences, concentrating in one of three research cores: Drug Discovery, Drug Action, or Drug Delivery. The Pharmaceutical Sciences graduate program has educated generations of scientists for challenging positions in industry, academia, and government.

Research in **Drug Discovery** focuses on applications of chemistry in the context of drug design and development. **Drug Action** uses various biological principles and tools to study molecular and cellular processes altered by drugs. **Drug Delivery** involves basic and translational research using novel methods of drug administration and targeting. The UW-Madison Pharmaceutical Sciences Division has been recognized for its research productivity, extramural funding support, publication record and teaching. The School of Pharmacy is housed in Rennebohm Hall, a seven-story, state-of-the-art facility.

Accepted graduate applicants commonly have strong scientific backgrounds, a passion for research, and significant laboratory experience. Students with undergraduate degrees in the physical or biological sciences, engineering, pharmacy and related fields are encouraged to apply.

UW-Madison is one of the nation's most prolific research universities, located on the shores of Lake Mendota in the state's vibrant capital city. The city of Madison is consistently recognized as one of the best cities in multiple categories for quality of life. Visit www.grad.wisc.edu to learn more about the many reasons to choose UW-Madison for graduate study.

Contact:

Linda Frei

Graduate Program Coordinator

lfrei@pharmacy.wisc.edu

Phone: 608-262-1200

www.pharmacy.wisc.edu/admissions/pharmsci/

Pharmaceutical Sciences Division

School of Pharmacy

University of Wisconsin-Madison

777 Highland Avenue

Madison, WI 53705-2222



SCHOOL OF
PHARMACY
University of Wisconsin-Madison

Pharmaceutical Sciences Division Faculty

Ralph M. Albrecht, Professor (Action/Delivery)

Use of inductively heated, antibody targeted, core-shell nanoparticles for selective removal of targeted cells in vitro and in vivo. Development of high resolution nanoparticle labeling systems for correlative microscopy. E-mail: albrecht@ansci.wisc.edu

Arash Bashirullah, Assistant Professor (Action)

Molecular genetics of hormone action and developmental timing. E-mail: bashirullah@wisc.edu

Tim S. Bugni, Assistant Professor (Discovery)

Marine natural products chemistry; drug discovery; structure determination of novel natural products using NMR and mass spectrometry; and marine invertebrate associated microorganisms. E-mail: bugni@wisc.edu

Ron Burnette, Associate Professor, Vice Chair (Delivery)

Developing a molecular level mechanistic understanding of the delivery and stability of drugs by physical chemical characterization of guest-host interactions using computational chemistry and NMR. E-mail: rrburnette@wisc.edu

Margaret Clagett-Dame, Professor (Action)

Therapeutic applications of vitamin A and vitamin D analogs; retinoids in embryonic and nervous system development. E-mail: dame@biochem.wisc.edu

Lara Collier, Assistant Professor (Action)

Genetic approaches to identify genes involved in cancer initiation, progression, and therapy resistance. E-mail: lcollier@pharmacy.wisc.edu

Adnan Elfarra, Professor (Action)

Bioactivation of drugs, industrial chemicals, and environmental toxicants; biochemical basis for target organ selectivity; biomarkers of exposure and effect; structure and function of flavin-containing monooxygenases; glutathione-dependent prodrugs of anticancer drugs. E-mail: elfarra@svm.vetmed.wisc.edu

Warren Heideman, Professor (Action)

Understanding the molecular mechanisms that regulate the cellular transition from quiescence to growth; identifying critical mechanisms regulating vertebrate development that are disrupted by environmental contaminants; creating strategies for the fermentative production of biofuels. E-mail: wheidema@wisc.edu

Richard P. Hsung, Professor (Discovery)

Developing novel and practical synthetic methods for drug discovery, total syntheses of complex natural products with biological relevance, syntheses of de novo protease inhibitors for drug designs and asymmetric catalysis. Email: rhsung@pharmacy.wisc.edu

Jeffrey A. Johnson, Professor (Action)

Signal transduction, transcriptional control of neuroprotective genes and neurotoxicity in Parkinson's, Alzheimer's, Huntington's and Neuromuscular disease. E-mail: jajohnson@pharmacy.wisc.edu

W. John Kao, Professor (Delivery)

Mechanisms of cell adhesion and activation on biomaterials, biomaterial biocompatibility and biodegradation, novel materials for tissue engineering. E-mail: wjkao@pharmacy.wisc.edu

Glen S. Kwon, Professor (Delivery)

Polymeric nanobiomaterials for drug, gene, and antigen delivery. E-mail: gskwon@pharmacy.wisc.edu

Charles T. Lauhon, Associate Professor, Vice Chair (Discovery)

Bioorganic chemistry of RNA; biochemistry of RNA modifying enzymes; nucleotide based drug design. E-mail: ctlauhon@pharmacy.wisc.edu

Lingjun Li, Associate Professor (Action/Discovery)

Analytical neurochemistry, neuropeptides, proteomics, biomarker discovery, microseparations and biological mass spectrometry. E-mail: lli@pharmacy.wisc.edu

Paul Marker, Assistant Professor (Action)

Molecular basis of prostate development and prostate cancer progression: roles of cell-cell signaling pathways and use of mouse genetics to discover novel prostatic oncogenes and tumor suppressors. E-mail: pcmarker@pharmacy.wisc.edu

Sandro Mecozzi, Associate Professor (Delivery/Discovery)

Design and synthesis of fluorinated agents for nanobiomedicine. Molecular recognition and bioorganic chemistry of RNA. E-mail: smecozzi@wisc.edu

William S. Mellon, Professor (Action)

Biochemical pharmacology of hormones. Mechanosensitive pathways of cellular function. E-mail: wsmellon@wisc.edu

Richard E. Peterson, Professor and Chair (Action)

Reproductive and developmental toxicity of dioxin and nanomaterials in zebrafish and mouse models. E-mail: repeterson@pharmacy.wisc.edu

Ben Shen, Professor (Discovery)

The chemistry, biochemistry, and genetics of natural products; enzyme reaction mechanisms; biosynthesis; metabolic pathway engineering, and drug discovery. E-mail: bshen@pharmacy.wisc.edu

Weiping Tang, Assistant Professor (Discovery)

Stereoselective synthetic methodologies; total synthesis, asymmetric catalysis, and chemical biology of chromatin. E-mail: wtang@pharmacy.wisc.edu

Jon S. Thorson, Professor (Discovery)

Biocatalysis, bioorganic chemistry, biosynthesis, enzyme engineering, glycorandomization, mechanistic enzymology, and organic synthesis. E-mail: jsthorson@pharmacy.wisc.edu

Lauren Trepanier, Associate Professor (Action)

Pharmacogenetics; metabolic basis of arylamine drug toxicity and arylamine carcinogenesis. E-mail: latrepanier@svm.vetmed.wisc.edu

Jamey Weichert, Associate Professor (Delivery/Discovery)

Design and development of molecular contrast and imaging agents for a wide range of applications in diagnostic imaging as well as in the development of radiopharmaceuticals for therapeutic use in oncology. Email: jweichert@uwhealth.org

May P. Xiong, Assistant Professor (Delivery)

Biomaterials and stem cells for drug, siRNA and gene delivery. E-mail: mxiong@pharmacy.wisc.edu

Lian Yu, Professor (Delivery)

Solid-state chemistry of drugs; crystallization, polymorphism, molecular self-assembly and organic glasses. E-mail: lyu@pharmacy.wisc.edu