The objective of the doctoral minor in molecular and cellular pharmacology is to equip students with an introduction to some of the skills required to conduct state-of-the-art biomolecular, biomedical, and pharmacological basic research. Advances in biomedical sciences are often based on the development of new drugs, which improve and save the lives of millions of patients. Drugs with specific biochemical actions are also powerful research tools. They provide pharmacologists and other biomedical scientists unique research opportunities which help to elucidate cellular signaling cascades.

**STUDENT LEARNING GOALS**

**Knowledge, Skills Learning Goals**
1. Gain a basic understanding of the pharmacological principles that underlie all biological processes.

2. Become aware of the current limitations of the state of understanding of this discipline and the strategies that are required to advance the field of pharmacology.

**Professional Conduct Learning Goals**
3. Fosters ethical and professional conduct in the sciences, including but not limited to: exposition of the scientific method; ethical design of experimental protocols; reproducibility in science; professional behavior in industrial, government, and academic settings; documentation of scientific results; communication to other scientists and the public; peer review; and confidentiality.

**REQUIREMENTS**

PHMCOL-M/PHM SCI 521 Pharmacology I (3 cr)

PHMCOL-M/PHM SCI 522 Pharmacology II (3 cr)

PHMCOL-M/BIOCHEM/ZOOLOGY 630 Cellular Signal Transduction Mechanisms (3 cr)

PHMCOL-M/M&ENVT/OX/MEDICINE/ONCOLOGY/PATH/PHM SCI/POP HLTH 625 Toxicology I (3 cr)

**ADMISSIONS**

Kristin Cooper, Program Coordinator: kgcooper@wisc.edu

**PEOPLE**

**Faculty:** Professors Anderson, Auger, Beebe, Bement, Bresnick, Chapman, Cryns, Czajkowski, Denu, Greenspan, Hardin, Hayney, Huttenlocher, Jackson, Jefcoate, Johnson, Kalejta, Kamp, Keck, Keely, Kimble, Kolesar, Kwon, Li, Martin, Miyamoto, Mosher, Murphy, Raines, Rapraeger, Schuler, Sheibani, Swarten, Thomson, Tibbetts, Wasserman, Xu, Yang, Zhang, Zhao; Associate Professors Audhya (director), Balijepalli, Burkard, Buxton, Chanda, Chang, Ge, Hornberger, Jorgensen, Kuo, Kalejta, Lee, Masters, Pagliarini, Roopra, Striker, Tang, Weaver, Wheeler, Xing; Assistant Professors Blum, Collier, Jiang, Johannsen, M. Kimple, R. Kimple, Kreeger, Lamming, Lou, Rui, Saha, Sherer, Sridharan