Admission

Since our program is interdisciplinary, we admit students from various backgrounds. Applicants recently admitted to our program have undergraduate degrees in a wide range of disciplines, including Molecular Biology, Psychology, and Chemical Engineering.

Prerequisite Requirements

- Research experience (laboratory or fieldwork) is a primary criterion for acceptance into our program.
- Some biology courses are required. Biochemistry course is highly recommended, but not required.

Application Requirements

- A completed and submitted online application
- A valid e-mail address that you will maintain at least 8 months after you apply (Admitted students will be notified via the e-mail address provided).
- An application fee payment of $70 for U.S. Citizens and lawful U.S. Permanent Residents or $90 for all other applicants.
- Standardized test scores if applicable: GRE, TOEFL.
- The GRE Subject Test is highly recommended, but not required.
- The minimum required score for the TOEFL iBT is 80 (computer-based exam) or a 550 (paper-based exam).
- Three letters of recommendation.
- Two official transcripts.

How to Apply

Applications are located at: www.grad.uci.edu/

- Completed applications, including official transcripts of grades, three letters of recommendation and GRE scores, should be received by December 5. To be eligible for financial support it is crucial that you meet this deadline.
- Suitable applicants will be invited to visit in January at departmental expense. Decisions on admission will be made after that time.

** UC Irvine's Institution code is 4859
** Pharmacology's Department code is 0216

Mission

Pharmacology is an exciting branch of biological and medical sciences that embraces our knowledge of how molecules affect living things. The mission of the Department is threefold: research, teaching, and training in the conduct of research.

Our Ph.D. program prepares students for careers in academia, research institutions, and the pharmaceutical industry by providing a foundation in all aspects of pharmacology, from molecular basis of drug–receptor interactions, signaling pathways, and molecular mechanisms of gene expression.

To facilitate these broad–ranging investigations, the faculty employ molecular biological, biochemical, anatomical, physiological, and behavioral strategies. Students are thus exposed to most of the methods used in pharmacological research.

Although diverse in their research specialties, the faculty shares a common interest in the discovery of drug–

Contact Information

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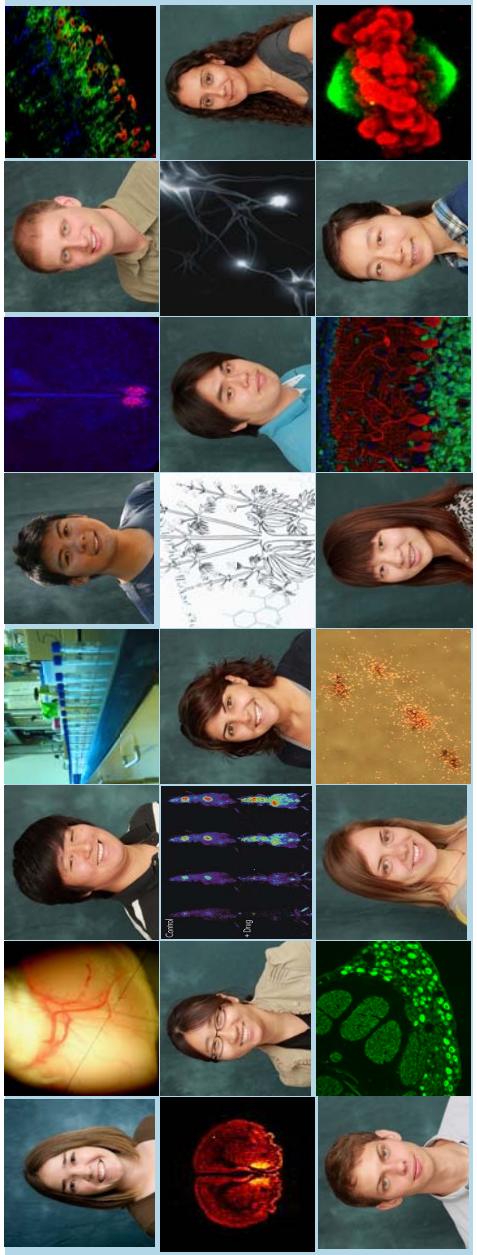
Department of Pharmacology University of California, Irvine

Ph.D. Program in Pharmacology and Toxicology



http://www.pharmacology.uci.edu/

Program of Study

The Department of Pharmacology offers a program leading to a Ph.D. in Pharmacology and Toxicology. A combined M.D./Ph.D. program is available to students who are interested in pursuing medical careers that include basic research.

The Ph.D. programs are flexible and tailored to the needs of individual students. Training consists of an initial sequence of courses and seminars that provide a strong basic foundation in pharmacology and related biomedical science. Students primarily select courses in molecular biology, neurobiology, biochemistry, physiology, neuroanatomy and behavioral science. All students are actively engaged in research throughout their training: in the first year, laboratory rotations insure exposure to a variety of techniques and research problems. At the end of the second year, students are considered for advancement to Ph.D. candidacy on the basis of academic standing, laboratory performance, and the outcome of a qualifying examination. After advancement to candidacy, students devote all of their time to completion of an original research thesis.

Students typically complete their graduate education in four to five years. Candidates for the M.D./Ph.D. normally begin the program by completing the first two years of the medical school curriculum. Advanced graduate training, dissertation research, and clinical training occupy the next four to five years. Provided the degree requirements for both the School of Medicine and the Graduate School have been fulfilled, students are eligible for both the M.D. and Ph.D. degrees at the end of seven years.

Financial Support

Pharmacology graduate students are currently supported with an annual stipend of $27,500. Graduate Student fees (including health insurance) are also covered for all students. For domestic students, non-resident tuition is covered for 1st year only, if applicable. However, tuition costs are not guaranteed for foreign students. Graduate support is largely provided through departmental and faculty research funds and training grant funds. However, a number of students have competed successfully for national fellow-

Research Areas

In vivo Pharmacology studies the action of drugs on the whole animal. Researchers study the effect of drugs on a wide range of behaviors and physiological endpoints including, feeding, locomotion, learning and memory, reward, seizures, sleep, stress, stroke and anti-aging.

Cardiovascular Pharmacology studies the heart, vascular system, and parts of the nervous and endocrine systems that regulate cardiovascular function. Researchers observe the effects of drugs on arterial pressure, blood flow in specific vascular beds, release of physiological mediators, and on neural activity in central nervous system structures.

Drug Abuse research in pharmacology seeks to offer help in suppressing withdrawal, and in reducing drug craving by blocking the effects of drugs on the pleasure centers of the brain. Researchers study the physical and behavioral processes of addiction to drugs such as nicotine, marijuana and heroin.

Hormonal Actions involve hormones or hormone derivatives, or drugs that alter the effects of naturally occurring hormones. Endocrine pharmacologists study the origins and action of metabolic diseases.

Neuropharmacology encompasses the nervous system, including the brain, spinal cord, and nerves that communicate with all parts of the body. Researchers study drug actions of specific diseases of the nervous system and use drugs as tools to understand basic mechanisms of neural function.

Novel Therapies are new drugs or therapeutic processes, or new uses for existing drugs and therapies, to treat illness. Researchers evaluate the medical usefulness of a potential drug by identifying the specific manner in which it disrupts the disease process.

Signal Transduction - Gene Regulation explores the body's responses, at the cellular level, to changes in the environment, the use of signaling pathways to regulate the expression of genes, and the role of gene expression in human disease. Researchers identify the genes and mechanisms involved, including cellular and molecular biology of transcription, chromatin remodeling and epigenetics - specifically within physiological settings and work to discover and refine new inhibitors or activators.

Department of Pharmacology Faculty Mentors

Geoffrey Abbott: Ion channel and transporter physiology, pharmacology, regulation and trafficking.

Olivier Civelli: Molecular biology of G protein-coupled receptors; search for novel neurotransmitters and neuropeptides; pharmacological and behavioral characterizations of the novel neurotransmitters and neuropeptides.

Frederick J. Ehlert: Muscarinic receptor coupling mechanisms; functional role of muscarinic receptor subtypes; pharmacological methods of analysis.

Kelvin W. Gee: Pharmacology of allosteric modulators of ligand-gated ion channels, selective modulation of ligand-gated ion channel subtypes and its therapeutic applications.

Naoto Hoshi: Physiological role and regulation of the M-channel, molecular biology, electrophysiology and live cell FRET imaging.

Frances M. Leslie: Effects of drugs of abuse on the developing brain.

Qun-Yong Zhou: Neurobiology of prokineticins and prokineticin receptors.

Joint G.P. Faculty Mentors

Emiliana Borrelli: Microbiology & Molecular Genetics
Pietro Galassetti: Pediatrics
Mahtab Jafari: Pharmaceutical Sciences
Z. David Luo: Anesthesiology
Daniele Piomelli: Anatomy & Neurobiology
Rainer Reinscheid: Pharmaceutical Sciences
Xiaolin Zi: Urology