Pharmacological Sciences

Qun-Yong Zhou, Graduate Program Director/Advisor for the Interdisciplinary Program

Graduate Student Affairs: 949-824-7651 (Program administered by the Department of Pharmacology)

The Department of Pharmacology and Pharmaceutical Sciences join forces to offer an interdisciplinary program leading to the Ph.D. in Pharmacological Sciences with a concentration in Pharmacology or in Pharmaceutical Sciences. For complete program information, see the Interdisciplinary Studies section of the Catalogue.

The Department of Pharmacology also admits students through the following two gateway programs:

Graduate Gateway Program in Medicinal Chemistry and Pharmacology (MCP). The one-year graduate MCP Gateway Program is designed to function in concert with selected department programs, including the Ph.D. in Pharmacological Sciences. Upon successful completion of the MCP curriculum at the end of their first year, students choose a faculty advisor who is affiliated with one of the participating departments, and transition into their “home” department to complete the remaining degree requirements. They will receive their Ph.D. from the department of their chosen advisor. Detailed information is available at Department of Pharmacology (http://www.pharmacology.uci.edu) website (http://www.pharmacology.uci.edu).

The Department also participates in the Interdepartmental Neuroscience Gateway Program, described in the Francisco J. Ayala School of Biological Sciences section of the Catalogue. Students who select a focus in Neuroscience and a research advisor in the Department begin following the departmental requirements for the Ph.D. at the beginning of their second year and will receive their Ph.D. from the department of their chosen advisor. Detailed information is available at Interdepartmental Neuroscience Gateway Program website (http://www.inp.uci.edu).

M.S. in Pharmacology

The online M.S. in Pharmacology is designed to meet the needs of working professionals and traditional students by providing educational access and flexibility in an online format. It is well-suited to meet the goals of individuals who are seeking leadership positions within their organizations in a variety of fields.

The curriculum emphasizes both theoretical and practical applications and an interdisciplinary approach that serves not only as excellent pathways to career advancement, but also provides a solid foundation from which to pursue doctoral study in related fields.

The M.S. in Pharmacology prepares students for careers in academic research institutions, in the biotechnology and pharmaceutical industry, in federal and state agencies, and in private research institutions.

Admission

The online M.S. in Pharmacology is targeted to working professionals in the pharmaceutical industry and related fields, and is open to any non-traditional student who can benefit from the flexibility and convenience of online learning. Requirements include:

• A bachelor’s degree from a recognized academic institution with degree standards equivalent to UC
• A minimum cumulative undergraduate GPA of 3.0
• One official transcript
• Some coursework in biology is required, but applicants may be admitted with a variety of undergraduate disciplines, including biology, molecular biology, psychology, and chemistry
• Some research experience is required
• Personal statement
• Three letters of recommendation

Applications must be received by June 1.

Requirements

The program consists of 13 required courses (39 units) to be completed sequentially over two years of study (six quarters).

A. Complete the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>PHARM 270</td>
<td>Applied Pharmacology</td>
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<tr>
<td>PHARM 271</td>
<td>Principles of Pharmacology</td>
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<tr>
<td>PHARM 272</td>
<td>Receptors and Drug Targets</td>
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<td>PHARM 274</td>
<td>Research Techniques in Pharmacology</td>
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<td>PHARM 276</td>
<td>Experimental Design and Data Analysis</td>
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<td>PHARM 277</td>
<td>Ethics in Scientific Research</td>
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<td>PHARM 278</td>
<td>Concepts in Drug Discovery</td>
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<td>PHARM 279</td>
<td>Special Topics in Pharmacology</td>
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<td>PHARM 280</td>
<td>Master's Project in Pharmacology</td>
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<td>PHARM 281</td>
<td>Neuropharmacology</td>
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<td>PHARM 282</td>
<td>Behavioral Pharmacology</td>
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<td>PHARM 283</td>
<td>Cardiovascular Pharmacology</td>
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<tr>
<td>PHARM 284</td>
<td>Endocrine, Respiratory, and Gastrointestinal Pharmacology</td>
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</table>

1 Students take PHARM 270 at the beginning of the first year; it is an accelerated five-day in-residence course offered on the UCI campus.

The capstone paper is written while the student is enrolled in PHARM 280. The student, in consultation with their faculty mentor, selects a topic of interest in pharmacology. The final product will be evaluated by the mentor and the course director for acceptability in meeting the capstone requirement.

Students submit an application for advancement to candidacy in the fifth quarter of study. The capstone research project and required courses for the fifth and sixth quarters must be completed before the degree will be conferred. The normative time to degree is two years.

**Faculty**

Geoffrey W. Abbott, Ph.D. University of London, *Professor of Pharmacology; Physiology and Biophysics*

Amal Alachkar, Ph.D. University of Manchester, *Associate Adjunct Professor of Pharmacology*

James D. Belluzzi, Ph.D. University of Chicago, *Adjunct Professor of Pharmacology*

Stephen C. Bondy, Ph.D. University of Birmingham, *Professor of Medicine; Environmental Health Sciences; Pharmacology; Program in Public Health*

Emiliana Borrelli, Ph.D. University of Strasbourg, *Professor of Microbiology and Molecular Genetics; Pharmacology*

Catherine M. Cahill, Ph.D. Dalhousie University, *Acting Associate Professor of Anesthesiology and Perioperative Care; Anesthesiology and Perioperative Care; Pharmacology*

A. Richard Chamberlin, Ph.D. University of California, San Diego, *Department Chair and Professor of Pharmaceutical Sciences; Chemistry; Pharmacology* (chemical biology, organic and synthetic)

Olivier Civelli, Ph.D. Swiss Federal Institute of Technology in Zurich, *Department Chair and Eric L. and Lila D. Nelson Chair in Neuropharmacology and Professor of Pharmacology; Developmental and Cell Biology; Pharmaceutical Sciences* (novel neuroactive molecules)

Sue P. Duckles, Ph.D. University of California, San Francisco, *Professor Emerita of Pharmacology*

Frederick J. Ehler, Ph.D. University of California, Irvine, *Professor of Pharmacology*

Pietro R. Galassetti, Ph.D. Vanderbilt University, *Associate Professor of Pediatrics; Pharmacology*

Kelvin W. Gee, Ph.D. University of California, Davis, *Professor of Pharmacology*

Stephen Hanessian, Ph.D. Ohio State University, *Director of Medicinal Chemistry and Pharmacology Graduate Program and Professor of Pharmaceutical Sciences; Chemistry; Pharmacology* (organic chemistry)

Naoto Hoshi, Ph.D. Kanazawa University, *Assistant Professor of Pharmacology; Physiology and Biophysics*

Mahtab F. Jafari, Ph.D. University of California, San Francisco, *Vice Chair and Professor of Pharmaceutical Sciences; Ecology and Evolutionary Biology; Pharmacology*

Diana N. Krause, Ph.D. University of California, Los Angeles, *Adjunct Professor of Pharmacology*

Arthur D. Lander, Ph.D. University of California, San Francisco, *Donald Bren Professor and Professor of Developmental and Cell Biology; Biomedical Engineering; Logic and Philosophy of Science; Pharmacology* (systems biology of development, pattern formation, growth control)

Frances L. Leslie, Ph.D. University of Aberdeen, *Professor of Pharmacology; Anatomy and Neurobiology*

Ellis Levin, M.D. Thomas Jefferson University, Jefferson Medical College, *Professor in Residence of Medicine; Biological Chemistry; Pharmacology*

John C. Longhurst, Ph.D. University of California, Davis, *Susan Samuei Chair in Integrative Medicine and Professor of Medicine; Pharmacology; Physiology and Biophysics*

Shahrdad Lotfipour, Ph.D. University of California, Irvine, *Assistant Professor of Pharmacology*
Sandra E. Loughlin-Burkhead, B.A. University of California, San Diego, Specialist of Pharmacology

Zhigang D. Luo, Ph.D. State University of New York at Buffalo, Professor of Anesthesiology and Perioperative Care; Pharmacology

Daniele Piomelli, Ph.D. Columbia University, Louise Turner Arnold Chair in the Neurosciences and Professor of Anatomy and Neurobiology; Biological Chemistry; Pharmacology

Ralph E. Purdy, Ph.D. University of California, Los Angeles, Professor Emeritus of Pharmacology

Stefano Sensi, M.D. Gabriele D’Annunzio University of Chieti Pescara, Associate Adjunct Professor of Neurology; Pharmacology

Larry Stein, Ph.D. University of Iowa, Professor Emeritus of Pharmacology

Jeffrey R. Suchard, M.D. University of California, Los Angeles, Professor of Emergency Medicine; Pharmacology

Qun-Yong Zhou, Ph.D. Oregon Health & Science University, Professor of Pharmacology

Xiaolin Zi, Ph.D. Shanghai University, Associate Professor of Urology; Pharmacology