PHARMACOLOGY

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http://medicine.yale.edu/pharm
M.S., M.Phil., Ph.D.

Chair
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Associate Professors Titus Boggon, Jason Cai (Radiology and Biomedical Imaging), Kathryn Ferguson, Daryl Klein, Yansheng Liu, Ya Ha, Faye Rogers (Therapeutic Radiology), Benjamin Turk

Assistant Professors Claudio Alarcón, Assaf Alon, Moitrayee Bhattacharyya, Joel Butterwick, Sangwon Lee, Ken Loh (Comparative Medicine), Wei Mi

FIELDS OF STUDY

Major emphases in the Pharmacology Graduate Program are in the areas of molecular pharmacology, mechanisms of drug action, signal transduction, structural biology, infectious diseases, neuropharmacology, and chemotherapy.

To enter the Ph.D. program, students should apply to the interdepartmental graduate program in Biological and Biomedical Sciences (BBS), https://medicine.yale.edu/bbs, and select one of the interest-based tracks. Most students interested in a Ph.D. in pharmacology select the Translational Molecular Medicine, Pharmacology, and Physiology (TMMPP) or the Biochemistry, Quantitative Biology, Biophysics, and Structural Biology (BQBS) tracks.

SPECIAL REQUIREMENTS FOR THE PH.D. DEGREE

The field of pharmacology encompasses many disciplines. Flexibility in the Pharmacology Graduate Program permits students to concentrate in the areas of their particular interest. Students are required to take at least five courses. Students must take both terms of the graduate seminar course (PHAR 501 and PHAR 502) or equivalent courses from another program. The other three required courses are selected based on the interest of each student, but must include at least one of the following core courses: PHAR 504, PHAR 528, PHAR 529, MB&B 720, MB&B 752, or other DGS-approved BBS courses. Students are also required to do three laboratory rotations in their first year (PHAR 506). The graduate school requires a grade of Honors for a minimum of two courses. Honors for rotations cannot be used toward this requirement and only one Honors grade from PHAR 501/PHAR 502 can count
toward this requirement. Students must meet this Honors requirement prior to being admitted to candidacy and must maintain an overall High Pass average. A grade of Honors or High Pass is required for the selected core courses. Student progress toward these goals is reviewed at the end of the second and subsequent terms.

Prior to registering for a second year of study, students must successfully complete PHAR 580, The Responsible Conduct of Research, or the equivalent from another department. In addition, B&BS 503, RCR Refresher for Senior BBS Students, must be completed by the end of the fourth year. PHAR 580 and B&BS 503 do not count towards the five required courses.

Students are required to pass the qualifying examination by the end of their fourth term. In preparation for this, Pharmacology Graduate Program students must take PHAR 540, Developing and Writing a Scientific Research Proposal, in the spring term of their second year (this does not count toward the five-course requirement). Before the end of the third year, a thesis prospectus must be submitted and accepted for admission to candidacy. Once a student’s original doctoral dissertation research is largely complete, they give an oral presentation to the Pharmacology faculty (pre-defense) for approval. Within six months of passing the pre-defense, the student must submit a preliminary written thesis to the thesis committee and an outside reader. A public Ph.D. dissertation seminar will then be scheduled, followed by a closed examination by the student’s thesis committee and the outside examiner. Once the draft of the written thesis is approved by the thesis committee, it is submitted to the Graduate School. One first-author manuscript is required from the thesis research. The Pharmacology Graduate Program faculty recognizes that some types of thesis-related work can take a long time. If deemed necessary, with agreement across the faculty that the student has made substantial progress in a project of this sort, the faculty can exempt a student from the one first-author paper requirement.

An important aspect of graduate training in pharmacology is the acquisition of teaching skills through participation in teaching courses related to the student’s scientific interests. These opportunities can be drawn from a diverse menu of lecture, laboratory, and seminar courses given at the undergraduate, graduate, and medical school levels. Ph.D. students are required to participate in two terms (or the equivalent) of teaching. Students are not expected to teach during their first year.

M.D.-PH.D. STUDENTS

M.D.-Ph.D. students must satisfy all of the above requirements for the Ph.D. with the following modifications: (1) only two of three laboratory rotations are required; (2) some medical-school courses (except pharmacology) can qualify as graduate-school courses as long as the M.D.-Ph.D. student registers for them in OCS (Online Course Selection); and (3) only one term of teaching is required. Current graduate-school courses cannot be used to fulfill any medical-school course requirements.

MASTER’S DEGREES

M.Phil. See Degree Requirements under Policies and Regulations.

M.S. Students who withdraw from the Ph.D. program may be eligible to receive the M.S. degree if they have met the requirements and have not already received the
M.Phil. degree. For the M.S., students must successfully complete the first three terms of the Ph.D. program. This includes one year of lab rotations and course requirements.

Program materials are available upon request to the Director of Graduate Studies, Department of Pharmacology, Yale University, PO Box 208066, New Haven CT 06520-8066.