

Pharmacological Sciences Training Program

Program Overview

The Pharmacological Sciences Training Program is designed to provide predoctoral students with a strong foundation in basic pharmacological principles and a broad knowledge of other related basic science disciplines, including biochemistry, medicinal chemistry, chemistry, physiology, and toxicology. All students will complete a core pharmacological sciences curriculum consisting of courses in pharmacology and biological chemistry, with other courses designed to fit the programmatic needs of individual students.

Students may follow one of two general tracks with emphasis on biological or chemical research. In the Biology Track, a degree may be obtained in pharmacology, biological chemistry, pharmaceutical science, physiology, or toxicology. In the Chemistry Track, a degree may be obtained in medicinal chemistry, chemistry, biological chemistry, or pharmaceutical sciences. Areas of research concentration within the program include cardiovascular/renal pharmacology, neuropharmacology, xenobiotic metabolism, growth and metabolic regulation, receptor structure and function, synthesis and pharmacology of therapeutic and diagnostic agents, transport mechanisms, drug absorption, drug delivery, and pharmacokinetics.

Students obtain laboratory experience in several types of pharmacological research and learn how to design experiments, evaluate experimental data, and use appropriate statistical methods. The training program includes formal, graduate-level courses with lectures, discussions, and examinations; seminar programs, both formal and informal; supervised laboratory investigation leading to an independent study which forms the basis for the student's doctoral dissertation; a preliminary examination, and a final oral examination, during which the trainee defends the dissertation before a doctoral committee.

PIBS students supported by the PSTP training grant are expected to fulfill all of the requirements for their degree as well as taking Biological Chemistry 550-Protein Structure and Function; Pharmacology 610-Receptor Pharmacology; Pharmacology 611-Principles of Pharmacology; Pharmacology 614-Autonomic Pharmacology; Physiology 510; and one of the following courses: Pharmacology 612-Antimicrobial and Cancer Pharmacology; Pharmacology 615-Seminars in Molecular Neuropharmacology; Pharmacology 616-Seminars in Cardiovascular Pharmacology; and Pharmacology 617-Seminars in Endocrine Pharmacology. In addition they are expected to take the Medicinal Chemistry 550/Pharmacology 504-Seminars in Pharmacological Sciences for two years.

Deadline

The deadline for application is May 15. Students who are eligible are all PIBS students who are working with a faculty member on the training grant and who are working on a project that is related to the pharmacological sciences. Students are to be nominated by his/her mentor. If a student has not chosen a mentor but has narrowed it down to two faculty members of the training grant, the student may be nominated by both but must then interview describing a project in each laboratory.

Program Requirements

Highly qualified students who have an interest in pharmacological sciences are selected from among the students enrolled in the participating departments or programs. Selection of students is based on undergraduate and graduate GPA, GRE scores, research experience, letters of recommendation, and personal interviews. **Students enter the PSTP at the beginning of their second year of graduate school** and are generally supported (stipend, tuition and health care) by the training grant for two years, after which time they are usually supported by individual faculty research grants, industrial grants, national fellowships, departmental endowments, or University merit fellowships.

Application Materials

The nomination must include undergraduate and graduate transcripts, GRE scores, information on undergraduate research experience and graduate school rotations, and two letters of recommendation. The student will undergo a personal interview with members of the appropriate subcommittee of the Parent Committee of the PSTP Training Grant and will be asked to describe the research that they plan to do for their thesis. The PIBS Office should be able to provide the undergraduate and graduate transcripts, GRE scores, information on research experience, and information on graduate rotations.

For More Information

Students interested in more information regarding the training grant can contact Eileen Ferguson (Pharmacology Department), Kim Barrett (Medicinal Chemistry), Dr. Paul Hollenberg (Pharmacology Department), or Dr. Ron Woodard (Medicinal Chemistry).

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