

# DEPARTMENT OF PHARMACOLOGY

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**More Information:** <http://pharmacology.case.edu/>

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The Department of Pharmacology offers training leading to MS, PhD, or MD/PhD degrees for highly qualified post-undergraduate candidates committed to research careers in the biomedical sciences. Adequate preparation in the biological sciences, mathematics, organic chemistry, and physics or physical chemistry is a prerequisite for admission.

Multidisciplinary training carried out by faculty in pharmacology and other basic science departments, emphasizes molecular, cellular, physiological, and translational aspects of the pharmacological sciences. Areas of faculty expertise include drug/xenobiotic metabolism; receptor-ligand interactions, and biochemical reaction mechanisms; cell biology of signaling pathways; structure-function of membrane components; endocrine and metabolic regulation; cell surface and nuclear receptors, hormonal regulation of gene expression; cancer biology and therapeutics, bacterial and viral pathogenesis, neuroscience/neuropharmacology, and drug resistance.

Students who desire the combined MD/PhD degrees are admitted to the Medical Scientist Training Program (MSTP). These students participate in the two-year integrated preclinical curriculum of the School of Medicine (University Program), which features clinical correlation of basic biologic concepts. Combined degree students who select the PhD in pharmacology undertake a series of advanced courses, research rotations, preliminary examinations, and dissertation research in the same manner as that described for the PhD program.

## Facilities

The Department of Pharmacology occupies about 25,000 net square feet distributed among several locations, namely the School of Medicine Harland Goff Wood Building and the adjacent Wood Research Tower, as well as facilities in the West Quad Bldg. Facilities include extensive chromatographic and tissue culture facilities, a transgenic mouse laboratory, imaging and confocal microscopy equipment, and ready access to specialized research techniques, including various aspects of recombinant DNA and hybridoma technology, in situ hybridization histochemistry, fluorescence cell sorting, NMR spectroscopy and mass spectrometry, X-ray crystallography, and cryo electron microscopy.

## Programs

- Pharmacology, MS
- Pharmacology, PhD
- Translational Pharmaceutical Science, MS

## Dual Degrees

- Pharmacology, MS/Medicine, MD
- Medical Scientist Training Program (MSTP), PhD/Medicine, MD