The discipline of pharmacology is concerned with all aspects of the effects of drugs and chemicals on living systems. The field ranges from investigations at the molecular level to population studies on a global level. Drug development and evaluation make up an important part of pharmacology, but the field also includes the use of drugs as tools to probe the functions of macromolecules, cells, organs and even whole animals, and investigation of the harmful effects of chemicals on cells, organs and animals (toxicology). The breadth of interests encompassed by pharmacology provides excellent opportunities for individuals with strong interests and training in biology or chemistry to apply their knowledge to the understanding of fundamental biological processes.

Assistantships and Research

The Department has graduate assistantships and graduate research positions available for a number of qualified students. All students accepted into the graduate degree program are considered for financial assistance and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or assistantship, are required to assist the graduate faculty in research activities as a component of their educational experience.

ANAGLI, JOHN: Ph.D., University of Basel; M.S., Catholic University of Louvain; B.S., University of Science and Technology; Associate Professor
ANDERSON, GORDON F.: Ph.D., M.S., Wayne State University; B.S., Ferris State University; Professor Emeritus
ANDRADE, RODRIGO: Ph.D., Yale University; Professor
ARTALEJO, CRISTINA: M.D., Ph.D., Autonoma University; Associate Professor
CHOPRA, DHARAM: Ph.D., University of Newcastle-Upon-Tyne; M.S., University of London; B.S., University of Delhi; Professor
GOLDMAN, HAROLD: Ph.D., University of Illinois; Ph.D., M.S., University of Chicago; Professor Emeritus
KESSEL, DAVID H.: Ph.D., M.S., University of Michigan; B.S., Massachusetts Institute of Technology; Professor
KOCAREK, THOMAS A.: Ph.D., B.S., Ohio State University; Professor
LASH, LAWRENCE H.: Ph.D., Emory University; B.A., Case Western Reserve University; Professor
LIST, KARIN: Ph.D., M.Sc., University of Copenhagen; Associate Professor
MATTINGLY, RAYMOND R.: Ph.D., University of Virginia; M.A., B.A., University of Cambridge; Professor and Chair
MCCAULEY, ROY B.: Ph.D., B.S., Ohio State University; Professor
MOIN, KAMIAR: Ph.D., University of Montana; M.S., University of Wisconsin; B.S., University of Minnesota; Professor (Research)
REINERS, JOHN J.: Ph.D., Purdue University; B.S., University of Minnesota; Professor
SCHOENER, EUGENE: Ph.D., M.S., Rutgers University; B.S., City College of New York; Professor
SLOANE, BONNIE F.: Ph.D., Rutgers University; M.A., B.S., Duke University; Professor
TISDALE, ELLEN: Ph.D., Case Western Reserve University; M.S., Clemson University; Associate Professor
TODI, SOKOL: Ph.D., University of Iowa; Associate Professor
WAKADE, ARUN R.: Ph.D., M.S., State University of New York; B.S., University of Bombay; Professor
WU, HAI-YOUNG: Ph.D., City University of New York; B.S., National Chung-Hsing University; Associate Professor

- Pharmacology (M.S. and Ph.D.) (http://bulletins.wayne.edu/graduate/school-medicine/programs/pharmacology/pharmacology-phd)
PHC 7410 Principles of Toxicology Cr. 3
Basic concepts and principles of toxicology, including toxicity of major
classes of chemicals (pesticides, solvents, metals) and organ systems
(renal, immune, digestive, neuro and respiratory) affected. Offered Fall.
**Prerequisite:** CHM 2220 with a minimum grade of C- and CHM 2230 with
a minimum grade of C-
**Restriction(s):** Enrollment is limited to Graduate level students.
**Equivalent:** BIO 7011

PHC 7505 Cellular Electrophysiology of CNS Neurons Cr. 3
Molecular mechanisms underlying electrical activity of CNS neurons.
Lectures and student presentations: one hour lecture followed by two
hours of student-led discussion. Offered Biannually (Fall).
**Restriction(s):** Enrollment is limited to Graduate, Medical or Professional
level students.

PHC 7650 Advanced Topics in Pharmacology Cr. 1-6
Modules of instruction in sharply-defined areas of current research
in pharmacology and related disciplines. Each module will cover
fundamental concepts, essential knowledge base, research protocols and
techniques, and future issues. Offered Every Term.
**Prerequisite:** PHC 7010 with a minimum grade of C
**Restriction(s):** Enrollment is limited to Graduate level students.
**Repeatable for 6 Credits**

PHC 7700 Recent Developments in Pharmacology Cr. 1-4
Selected topics and readings in pharmacology. Offered Every Term.
**Restriction(s):** Enrollment is limited to Graduate level students.
**Repeatable for 12 Credits**

PHC 7710 Individual Studies in Pharmacology Cr. 1-8
Offered Every Term.
**Restriction(s):** Enrollment is limited to students with a major in
Pharmacology; enrollment is limited to Graduate level students;
enrollment limited to students in a Doctor of Philosophy or Master of
Science degrees.
**Repeatable for 8 Credits**

PHC 7890 Seminar Cr. 1
Assigned readings and student presentation; faculty and outside
speakers. Offered Every Term.
**Restriction(s):** Enrollment is limited to students with a major in
Pharmacology; enrollment is limited to Graduate level students;
enrollment limited to students in a Doctor of Philosophy or Master of
Science degrees.
**Repeatable for 12 Credits**

PHC 7996 Research Cr. 1-20
Special research topics in specified areas arranged with individual faculty
members. Offered Every Term.
**Restriction(s):** Enrollment is limited to Graduate level students.
**Repeatable for 30 Credits**

PHC 8999 Master’s Thesis Research and Direction Cr. 1-8
Offered Every Term.
**Restriction(s):** Enrollment limited to students with a class of Candidate
Masters; enrollment is limited to Graduate level students.
**Repeatable for 8 Credits**

PHC 9990 Pre-Doctoral Candidacy Research Cr. 1-8
Research in preparation for doctoral dissertation. Offered Every Term.
**Restriction(s):** Enrollment is limited to Graduate level students.
**Repeatable for 12 Credits**

PHC 9991 Doctoral Candidate Status I: Dissertation Research and
Direction Cr. 7.5
Offered Every Term.
**Restriction(s):** Enrollment is limited to Graduate level students.

PHC 9992 Doctoral Candidate Status II: Dissertation Research and
Direction Cr. 7.5
Offered Every Term.
**Restriction(s):** Enrollment is limited to Graduate level students.

PHC 9993 Doctoral Candidate Status III: Dissertation Research and
Direction Cr. 7.5
Offered Every Term.
**Restriction(s):** Enrollment is limited to Graduate level students.

PHC 9994 Doctoral Candidate Status IV: Dissertation Research and
Direction Cr. 7.5
Offered Every Term.
**Restriction(s):** Enrollment is limited to Graduate level students.

PHC 9995 Candidate Maintenance Status: Doctoral Dissertation
Research and Direction Cr. 0
Offered Every Term.
**Restriction(s):** Enrollment is limited to Graduate level students.
**Course Material Fees:** $348.67
**Repeatable for 0 Credits**