

# PHARMACOLOGY

---

Office: 6374 Scott Hall; 313-577-1580

Chairperson: Ray Mattingly

Associate Chairperson: Lawrence H. Lash

<http://www.pharmacology.med.wayne.edu/>

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.

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

BAKER, TRACIE: Ph.D., D.V.M., University of Wisconsin; M.S., University of Alaska-Fairbanks; B.S., Cleveland State University; Assistant Professor

BANNON, MICHAEL: Ph.D., M.Phil., Yale University; M.S., University of Louisville; B.A., Lewis University; Professor

DAVIS, NICHOLAS G.: Ph.D., Rockefeller University; B.S., Massachusetts Institute of Technology; Professor

GARRETT, ANDREW: Ph.D., University of Iowa; B.S., Cedarville University; Assistant Professor

GOLDMAN, HAROLD: Ph.D., University of Illinois; Ph.D., M.S., University of Chicago; Professor Emeritus

IBRAHIM, AHMED: Ph.D., M.Sc., B.Sc., Pharmaceutical Sciences; Assistant Professor

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

MOIN, KAMIAR: Ph.D., University of Montana; M.S., University of Wisconsin; B.S., University of Minnesota; Professor (Research)

PARK, JOONGKYU: Ph.D., B.S., Yonsei University, South Korea; Assistant Professor

PETRIELLO, MICHAEL: Ph.D., University of Kentucky; B.S., Muhlenberg College; Assistant Professor

PODGORSKI, IZABELA: Ph.D., Oakland University; Associate Professor

REINERS, JOHN J.: Ph.D., Purdue University; B.S., University of Minnesota; Professor

SLOANE, BONNIE F.: Ph.D., Rutgers University; M.A., B.S., Duke University; Distinguished Professor

STEPHEN, LANIER: Ph.D., University of Tennessee Center for Health Sciences; Professor

TISDALE, ELLEN: Ph.D., Case Western Reserve University; M.S., Clemson University; Associate Professor

TODI, SOKOL: Ph.D., University of Iowa; Associate Professor

TSOU, WEI-LING: Ph.D., National Yang Ming University; M.S., B.S., Taipei Medical University; Assistant Professor (Research)

VURAL, ALI: Ph.D., Medical University of South Carolina; B.S., Middle East Technical University; Assistant Professor (Research)

WAKADE, ARUN R.: Ph.D., M.S., State University of New York; B.S., University of Bombay; Professor Emeritus

WANG, GAN: Ph.D., Chinese Academy of Sciences; B.S., Shandong University; Associate Professor

WHITE, JENNEL: M.D., Morehouse School of Medicine; Assistant Professor Research

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 5030 Individual Research in Pharmacology Cr. 2-5

Direct participation in laboratory research into the ways drugs affect cell processes, under the supervision of a departmental faculty advisor. Introduction to experimental protocol and current related scientific literature. Offered for graduate credit only. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

## PHC 6500 Drugs and the Addictive Process Cr. 3

Introduction to general principles of drug action; specific pharmacologic, toxicologic, and pathologic effects of abused drugs; bio-psycho-social bases for addiction. Offered for graduate credit only. Offered Yearly.

**Restriction(s):** Enrollment is limited to Graduate level students.

## PHC 7010 Pharmacology Lecture Cr. 4

Introductory presentation of drug actions on living tissue. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

## PHC 7021 Advanced Health Assessment and Clinical Diagnosis Cr. 3

Advanced systematic focus on health assessment, anatomical and physical limitations, and impact on anesthesia practice. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Course Material Fees:** \$10

**Equivalent:** AN 7010

## PHC 7031 Advanced Pharmacology I Cr. 3

Prepares students with in-depth knowledge and understanding of the Pharmacokinetics and Pharmacodynamics for the nurse anesthetist. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Course Material Fees:** \$15

**Equivalent:** AN 7100

**PHC 7032 Advanced Pharmacology II Cr. 3**

Prepares students with in-depth knowledge and understanding of the Pharmacokinetics and Pharmacodynamics for the anesthetist. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Course Material Fees:** \$15

**Equivalent:** AN 7110

**PHC 7220 Molecular Biology of Cancer Development Cr. 3**

Topics covered include: genetics and molecular basis of normal cell transformation into malignant cancer cells; and molecular mechanisms that are fundamental to the regulation of cell growth, development, and differentiation. The students are expected to present and participate in discussions of one or more key recent papers that are relevant to the lectures. Offered Every Other Fall.

**Prerequisite:** IBS 7015 with a minimum grade of C and CB 7210 with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** CB 7220

**PHC 7221 Advanced Physiology Cr. 4**

Examine normal physiology with emphasis on the respiratory, renal, cardiovascular, neurological, endocrine, liver functions and associated disease. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** AN 7220

**PHC 7240 Principles of Cancer Therapy Cr. 2**

Continuation of the principles of cancer therapy taught in CB 7210. Concepts relating to tumor biology and the biochemistry and pharmacology of both classic and targeted agents are covered. Offered Every Other Winter.

**Prerequisite:** IBS 7015 with a minimum grade of C and CB 7210 with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** CB 7240

**PHC 7241 Advanced Physiology and Pathophysiology I Cr. 3**

Advanced knowledge in physiology; in-depth analysis of disease processes; correlation of pathophysiology, pharmacology, and advanced principles of anesthesia care. Offered Spring/Summer.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Course Material Fees:** \$10

**Equivalent:** AN 7240

**PHC 7242 Advanced Physiology and Pathophysiology II Cr. 3**

An in-depth assessment human physiology, and disease processes to include analysis of cellular structure and functions of the total body system. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** AN 7241

**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.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** BIO 7011

**PHC 7501 Chemistry and Physics for the Anesthetist Cr. 2**

Analysis and principles of chemistry and physics as applied to anesthesia. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Course Material Fees:** \$20

**Equivalent:** AN 7500

**PHC 7601 Regional Anesthesia and Pain Management Cr. 3**

The study and application of regional anesthesia and management and treatment of acute and chronic pain. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Course Material Fees:** \$20

**Equivalent:** AN 7600

**PHC 7641 Research and Statistics for the Anesthetist Cr. 3**

Acquire the knowledge on qualitative and quantitative research, obtain data, and develop appropriate method to analyze data and implementation of research findings. Offered Spring/Summer.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** AN 7640

**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 7880 Anesthesia Seminar Cr. 1**

Current developments in concepts and theories of nurse anesthesia. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** AN 7880

**Repeatable for 5 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 7902 Ethics and Health Care Cr. 3**

Basic understanding of ethical theories and practice, and new challenges encountered in health care settings. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** AN 7902

**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.

**Prerequisite:** PHC 9991 with a minimum grade of S

**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.

**Prerequisite:** PHC 9992 with a minimum grade of S

**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.

**Prerequisite:** PHC 9993 with a minimum grade of S

**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:** \$370.26

**Repeatable for 0 Credits**