



General Information							
Course Title:	<b>Molecular Pharmacology</b>	Course Designation: <b>PHARM 503</b>			Credits: <b>4</b>		
Semester:	<b>Spring</b>	Year:		<b>2008</b>			
Department:	<b>Pharmacology</b>						
Director:	<b>Christopher Herzog</b>	Phone #	<b>5986</b>	Email:	<b>crh13@psu.edu</b>	Office Rm #	<b>HCAR 3015</b>
Time :	<b>9:00 to 11:00</b>	Days:	<b>Tuesday and Thursday</b>		Location:	<b>HCAR - 3019</b>	

Course Information
Description and/or Overview: <p style="margin-top: 20px;">This course includes lectures and student participation to be presented in 3 separate sections. It will provide an understanding of the basic principles and current investigative research in the following areas of molecular pharmacology: antimicrobials/antivirals, antifungals, and antiparasitics and nutritional pharmacology (Section 1); immunomodulation and cancer chemoprevention (Section 2); and anticancer drugs (Section 3).</p>
Goals and/or Objectives: <p style="margin-top: 20px;">Following the completion of this course, students should be able to:</p> <ol style="list-style-type: none"> <li>1. Discuss the pharmacokinetics, mechanisms and sites of action, and pharmacological effects of drugs (e.g. antibiotics, antifungals, cancer chemopreventives and chemotherapeutics).</li> <li>2. Describe the therapeutic uses and adverse effects/toxicities associated with the prototype drugs.</li> <li>3. Understand the mechanisms of drug resistance and the rationale for target cancer therapy.</li> </ol>

Pre-requisites:

Undergraduate courses in biochemistry and physiology

Requirements; course-specific policies and expectations:

Pre-class preparation and reading of assigned texts.

Achievement of a grade of 70% to pass and 80% for a "B"

Class participation

Required Texts and Resources:

*The Pharmacological Basis of Therapeutics*, Goodman & Gilman, latest edition

Electronic Links:

Angel web page

Attendance Policy:

Class participation is required and contributes to 10% of the final grade, therefore attendance is strongly encouraged.

Examination Policy:

There will be two written mid-term examinations (Section I followed by Section II), and a final written examination (Sections I, II, III).

Grading Criteria:

Exam #1 (Section 1): 30% of final grade

Exam #2 (Section 2): 30% of final grade

Exam #3 (Section 3): 30% of final grade

Student participation/presentation: 10% of final grade

## Academic Integrity

Academic Integrity at Penn State is defined by Faculty Senate Policy 49-20 as “the pursuit of scholarly activity in an open, honest and responsible manner”. The University’s Code of Conduct states that “all students should act with personal integrity, respect other students’ dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others”. Academic dishonesty (including, but not limited to cheating, plagiarism, or falsification of information) will not be tolerated and can result in academic or disciplinary sanctions such as a failing (F) grade in the course.

## Plagiarism

[For more information, see: <http://tlt.its.psu.edu/suggestions/cyberplag/cyberplagstudent.html> ]

## Statement on Remediation

The basis for grades, as stated in [Senate Policy 47-20](#), is "...the instructor's judgment of the student's scholastic achievement..." Occasionally, a disagreement arises in the assignment of a grade. A student who wishes to question or challenge the grade assigned in a course must first discuss grading practices and assignments with the instructor. It is expected that the student and instructor will try to eliminate any misunderstandings and will attempt to work out any disagreements over grades.

On the rare occasion that a student and instructor fail to resolve the grade dispute through informal means, the student may request that the head of the academic program offering the course act as a mediator. If this mediation does not resolve the dispute, the student who is a graduate student may request further mediation from the associate dean for graduate studies.

[For more information, see: <http://www.psu.edu/dept/oue/aappm/G-10.html> ]

## Educator's Code of Conduct

**The Penn State Milton S. Hershey Medical Center and Penn State College of Medicine are dedicated to developing and maintaining a strong commitment to ethical teaching practices at all levels of the education process.**

The foundation for this Educator's Code of Conduct is provided by the Penn State University Graduate School Statement on Teaching Ethics (1). The development of this Graduate School statement was based on a special issue of the journal, *New Directions for Teaching and Learning*. In this special issue, entitled *Ethical Dimensions of College and University Teaching: Understanding and Honoring the Special Relationship between Teachers and Students* (2), several authors provided theoretical and practical guidelines for honing ethical college teaching skills. Some of the authors' recommendations have been used to formulate the Educator's Code of Conduct provided herein. Some of these recommendations were modified to specifically fit the needs of both educators and students at the Hershey Medical Center and the Penn State College of Medicine. Both the Unified Campus Commitment to Excellence of the Hershey Medical Center and Penn State College of Medicine (3) and the Code of Ethical Behavior of the Hershey Medical Center, Policy A-20 HAM (4) were also consulted in preparing this Educator's Code of Conduct.

### Four Norms to Govern Teaching

#### **Honesty**

Honesty and integrity must be practiced during all aspects of the education process.

#### **Promise-Keeping**

Promise keeping requires the educator to fulfill the "promises" made at the beginning of the semester or any other learning activity. Syllabi, assignments, grading principles, and class and office hour schedules each involve promises that are made to students and that must be adhered to under normal circumstances.

#### **Respect for Persons**

The educator must approach the learner with personal respect. In addition, the educator ought to encourage mutual respect among students. In particular, respect for race, religion, sexual orientation, disability gender, age, marital status, cultural differences, and political conviction should be supported and encouraged in all aspects of the educational process. Additionally, educators ought to show respect and common courtesy for students both during interpersonal interactions and in responding promptly to students' need for guidance and feedback. An environment free from harassment and discrimination, verbal abuse, physical violence, and intimidation in any form must also be provided for all learning activities.

#### **Fairness**

Recognizing the inherent subjectivity involved in grading, an educator ought to ensure that their grading practices are as objective as possible by creating and adhering to unambiguous criteria.

### Principles of Ethical College and University Teaching

#### **Content Competence**

An educator maintains a high level of subject matter knowledge and ensures that the content of the educational experience is current, accurate, representative, and appropriate to the position of the learning experience within the students' program of study. The educator must be capable of approaching each learner with a commitment to meeting his or her educational needs.

#### **Pedagogical Competence**

A pedagogically competent educator communicates the objectives of the educational experience to students, is aware of alternative instructional methods or strategies, and selects methods of instruction that are effective in helping students to achieve the course objectives.

#### **Dealing with Sensitive Topics**

Topics that students are likely to find sensitive or discomfiting are dealt with in an open, honest, and positive way.

#### **Student Development**

The overriding responsibility of the educator is to contribute to the intellectual development of the student, at least in the context of the educator's own area of expertise, and to avoid actions such as exploitation and discrimination that detract from student development.

### **Dual Relationship with Students**

To avoid conflict of interest, an educator does not enter into dual-role relationships with students that are likely to detract from student development or lead to actual or perceived favoritism on the part of the educator. The establishment of a romantic/sexual relationship between an educator and a student should be reported to the immediate supervisor of the educator. Such relationships should be dealt with consistent with Penn State Administrative Policy AD41 — Sexual Harassment (5).

### **Student Confidentiality**

Student grades, letters of evaluation, attendance records, and private communications are treated as confidential materials and are released only with student consent, for legitimate academic purposes, or if there are reasonable grounds for believing that releasing such information will be beneficial to the student or will prevent harm to the student or to others.

### **Patient Privacy and Confidentiality**

Educators who utilize patient information as part of any educational experience must follow patient privacy and confidentiality guidelines as outlined by the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

### **Respect for Colleagues**

An educator respects the dignity of his or her colleagues and works cooperatively with colleagues in the interest of fostering student development.

### **Valid Assessment of Students**

An educator is responsible for taking adequate steps to ensure that the assessment of a student's performance is valid, open, fair, and congruent with the course/educational experience objectives. An educator must be aware that such assessments are important in students' lives and in the development of their careers.

### **Respect for Institution and Profession**

In the interest of student development, an educator is aware of and respects the educational goals, policies, and standards of the institution in which he or she teaches and the profession which he or she represents.

### **Citing Sources of Educational Material**

An educator acknowledges and documents, as appropriate, the sources of information and other materials used for teaching.

## **Violations of the Educator's Code of Conduct**

Should a learner experience conduct that is inconsistent with the Educator's Code of Conduct, he/she is encouraged to first address the issue with either the educator responsible for the inconsistency or the director of the course in which the educator teaches. Should this attempt to resolve the problem fail, or if the nature of the inconsistency is such that the learner does not feel comfortable addressing the issue with either the educator or the course director, the student may consult other individuals. These individuals may include but are not limited to: faculty advisor, student ombudsman, departmental chair, the Vice Dean for Educational Affairs, and the Vice Dean for Faculty and Administrative Affairs. The decision of who to contact may be dependent on the educational program of the learner and/or type of violation that was encountered.

### **References:**

- (1) <http://www.gradsch.psu.edu/research/ethics.html#teaching>)
- (2) <http://cte.uncwil.edu/et/br030697.htm>
- (3) Unified Campus Commitment to Excellence of the Penn State Milton S. Hershey Medical Center and College of Medicine; 05/11/01
- (4) Code of Ethical Behavior of the Hershey Medical Center, Policy A-20 HAM; Effective Date October, 2001
- (5) <http://guru.psu.edu/POLICIES/Ad41.html>

**Developed by the Unified Campus Academic Team Endorsed by Teams Council — May 21, 2003**

### Course Schedule

<b>Course Title:</b>		<b>Molecular Pharmacology</b>	<b>Course Designation:</b>	PHARM 503	
<b>Course Director:</b>		<b>Christopher Herzog, Ph.D.</b>			
<b>Time :</b>	<b>9:00 am to 11:00 am</b>	<b>Days:</b>	<b>Tuesday and Thursday</b>	<b>Location:</b>	<b>HCAR-3019</b>
<b>Date</b>	<b>Lecture #</b>	<b>Instructor Last, first</b>	<b>Instruction Type (Lecture or lab)</b>	<b>Projected Lecture Topic - This list is an approximate guide to lecture topics. Titles and content are subject to change</b>	
01/15/08	1	Karpa, Kelly	Lecture	Antimicrobials	
01/17/08	2	Karpa, Kelly	Lecture	Antivirals	
01/22/08	3	Karpa, Kelly	Lecture	Journal Presentation/Discussion	
01/24/08	4	Sharma, Arun	Lecture	Antifungals/Antiparasitics	
01/29/08	5	Sharma, Arun	Lecture	Journal Presentation/Discussion	
01/31/08	6	Amin, Shantu	Lecture	Drugs of Plant Origin	
02/05/08	7	Kester, Mark	Lecture	Nutritional Pharmacology	
02/07/08	8	Boan, Jarol	Lecture	Micronutrients, Vitamins, Co-enzymes	
02/12/08	9	Amin, Shantu	Lecture	Journal Presentation/Discussion	
02/14/08				Exam I	
02/19/08	10	Fitzpatrick, Leo	Lecture	Immunomodulation	
02/21/08	11	Fitzpatrick, Leo	Lecture	Anti-Inflammatory Drugs	
02/26/08	12	Fitzpatrick, Leo	Lecture	Journal Presentation/Discussion	
02/28/08	13	Prokopczyk, Bogdan	Lecture	Cancer Chemoprevention	
03/04/08	14	Prokopczyk, Bogdan	Lecture	Journal Presentation/Discussion	
03/06/08	15	Prokopczyk, Bogdan	Lecture	Cancer Chemoprevention	
03/11/08				No class - spring break	
03/13/08				No class - spring break	
03/18/08	16	Desai, Dhimant	Lecture	Cancer Chemotherapy	
03/20/08	17	Herzog, Chris	Lecture	Cancer Chemotherapy	
03/25/08	18	Herzog, Chris	Lecture	Journal Presentation/Discussion	
03/27/08				Exam II	
04/01/08	19	Yun, Jong	Lecture	Cancer Target Therapy	
04/03/08	20	Yun, Jong	Lecture	New Cancer Targets on the Horizon	
04/08/08	21	Yun, Jong	Lecture	Journal Presentation/Discussion	
04/10/08	22	Dellinger, Ryan	Lecture	Anticancer Drug Metabolism	
04/15/08	23	Dellinger, Ryan	Lecture	Journal Presentation/Discussion	
04/17/08	24	Vrana, Kent	Lecture	Principles of Clinical Pharmacology	
04/22/08	25	Vrana, Kent	Lecture	Principles of Clinical Pharmacology	
04/24/08	26	Desai, Dhimant	Lecture	Clinical Trials	
04/29/08	27	Desai, Dhimant	Lecture	Journal Presentation/Discussion	
05/01/08	28	Desai, Dhimant	Lecture	Clinical Trials	
05/06/08				Exam III	

### Contact Information

Faculty /Title	Department	Phone #	EMAIL	Office Room #	Mail Code
<b>Kathy Simon, Adm. Asst.</b>	Graduate Student Affairs	6608	<a href="mailto:ksimon@psu.edu">ksimon@psu.edu</a>	1712	H170
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>	<i>Student Walk In Days – Tuesday &amp; Thursday</i>				
<b>Christopher Herzog, Ph.D.,</b> Course Director, Assistant Professor	Pharmacology	5986	<a href="mailto:crh13@hmc.psu.edu">crh13@hmc.psu.edu</a>	3015	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Kelly Karpa, Ph.D.,</b> Assistant Professor	Pharmacology	1621	<a href="mailto:kjd136@psu.edu">kjd136@psu.edu</a>	3027	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Jong Yun, Ph.D.,</b> Assistant Professor	Pharmacology	1508	<a href="mailto:jky1@psu.edu">jky1@psu.edu</a>	3017	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Mark Kester, Ph.D.,</b> Distinguished Professor	Pharmacology	8964	<a href="mailto:mxk38@psu.edu">mxk38@psu.edu</a>	3023	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Bogdan Prokopczyk, Ph.D.,</b> Associate Professor	Pharmacology	5922	<a href="mailto:bup10@psu.edu">bup10@psu.edu</a>	C7714B	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Shantu Amin, Ph.D.,</b> Professor	Pharmacology	1450	<a href="mailto:sga3@psu.edu">sga3@psu.edu</a>	C7526A	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Dhimant Desai, Ph.D.,</b> Associate Professor	Pharmacology	6805	<a href="mailto:dhd11@psu.edu">dhd11@psu.edu</a>	C7525	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Arun Sharma, Ph.D.</b> Assistant Professor	Pharmacology	285016	<a href="mailto:aks14@psu.edu">aks14@psu.edu</a>	C7525	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Kent Vrana, Ph.D.,</b> Professor and Chair	Pharmacology	8285	<a href="mailto:kvrana@psu.edu">kvrana@psu.edu</a>	3009	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Leo Fitzpatrick, Ph.D.,</b> Associate Professor	Pharmacology	0393	<a href="mailto:lfitzpatrick@psu.edu">lfitzpatrick@psu.edu</a>	3010	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Jarol Boan, M.D.,</b> Associate Professor	Internal Medicine	8161	<a href="mailto:jboan@hmc.psu.edu">jboan@hmc.psu.edu</a>	UPC2 1400	HU15
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Ryan Dellinger, Ph.D.,</b> Postdoctoral Scholar	Pharmacology	2973	<a href="mailto:rwd12@psu.edu">rwd12@psu.edu</a>	C3744	H069
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					
<b>Elaine Neidigh,</b> Course Secretary	Pharmacology	8285	<a href="mailto:ekn2@psu.edu">ekn2@psu.edu</a>	3005	R130
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>					