PHRS 801 (Section 001): Ethics & Foundations in Pharmaceutical Sciences

Fall, 2017
UNC Eshelman School of Pharmacy
University of North Carolina at Chapel Hill

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UNC Pharmaceutical Sciences / Approved; last update April 17, 2017
CLASS MEETING TIMES AND LOCATIONS
This course will meet weekly on Tuesdays from 12:30-1:20 pm in Beard, Room 102.

COURSE DESCRIPTION AND PREREQUISITES:
There are no prerequisites for PHRS 801 which is a required 1.25 credit hour course for all first year students in the Pharmaceutical Sciences graduate program. Students participate on cross-discipline teams to discuss topics in three foundational areas essential to their development as pharmaceutical scientists: research ethics which meets RCR training requirements; leading research articles within five areas of pharmaceutical sciences; and professional development. The course is offered in the fall semester and utilizes a format combining lecture with interactive case discussion and group activities. Importantly, PHRS 801 satisfies NIH and NSF requirements for responsible conduct of research training required for all research personnel supported on grants. Twelve weeks of the course cover 9 chapters from "Responsible Conduct of Research (authors Shampoo and Resnik). General ethical topics include research misconduct, conflicts of interest, data management, mentoring, authorship, peer review, publication, plagiarism, and ethical decision making. To give proper perspective for students in Pharmaceutical Sciences, the conceptual framework of this course is centered on ethical issues involved in the delivery of safe and effective medications to patients. Both real and hypothetical problems are presented for discussion and analysis. Topics specific to our research and discovery environment include to: fraud and misrepresentation of data, scientific honesty, academic recognition and financial success, intellectual property and patenting, ethical issues in human subjects research, ethical issues in animal research, clinical data safety and monitoring, and ethical issues relevant to pharmacogenomics research. Guest lecturers from each of the Pharmaceutical Sciences divisions, as well as UNC experts outside of the School, will provide experience-driven learning opportunities. Students will read assigned pages from each chapter prior to class and the invited speakers will lecture/engage the class in discussion on topics related to the assigned reading.

During the last 4 weeks of this course, each research division will have an opportunity to engage students in a “divisional discussion” to provide an opportunity:

1) To highlight the types of research problems investigated by faculty within the different concentrations of pharmaceutical sciences. Interdisciplinary teams comprised of students from each of the four research Divisions may be asked to submit one or two examples of highly publicized failures of scientific or ethical competence in an area related to each concentration area within pharmaceutical sciences for discussion in class.

2) To broaden the perspectives of first year students by engaging them in discussions with faculty role models on current or past ethical issues or scientific failures related to the development and delivery of safe, efficacious, and cost-effective drug therapies.

TEACHING AND LEARNING METHODS
The teaching and learning methods used in this course consist of textbook-based classroom discussion and group activities involving current ethical topics impacting today’s career scientist and their responsible conduct of research and research practices. The overall goal of this course is to provide a nurturing environment for the development of students as ethical translational research scientists through their interaction with professional role models and their adoption of ethical standards and guiding principles which students express in their person philosophy statement.

DESIRED COURSE OUTCOMES
Students will gain an understanding of, and will develop perspectives on the many social, ethical, and legal issues facing today’s career scientists. In addition, through their collaboration on interdisciplinary teams, students will gain an appreciation of some fundamental concepts and
foundational knowledge underlying the translational sciences. At the completion of this course, students will have the training to engage in the responsible conduct of research on NIH or NSF funded research projects.

COURSE OBJECTIVES
Upon completion of this course, students will be able to:
1. Discuss the issues and relationship between research ethics and the scientific process
2. Identify a range of ethical, legal, and social issues relevant to translational research in academic, and industrial settings
3. Explore the relationships between the moral, professional, social and institutional responsibilities of the scientist;
4. Develop analytic skills for evaluating arguments, positions and approaches for responsible ethical conduct of translational research.
5. Facilitate the understanding and acquisition of new knowledge in self and in group members.
6. Develop an effective assessment process including the skills of problem/hypothesis identification, and critical appraisal of the translational pathway leading to new therapies.
7. Function effectively as an active participant within a team engaged in learning and in the assessment of translational research strategies.
8. Cultivate the skills necessary to become self-directed as a learner, to acknowledge personal educational needs and those of team members, and to make effective use of available learning resources.
9. Recognize, develop, and maintain personal characteristics and attitudes including the following*:
   • responsibility and dependability;
   • awareness of personal abilities, limitations and emotions;
   • ability to relate to, and show concern for, other individuals; and
   • ability to evaluate personal progress, that of other team members, and the team process itself.
   (*Adapted in 1998 from School of Medicine, Queen's University, Kingston, Ontario, Canada.)

TEXTBOOKS AND REQUIRED READINGS/RESOURCES
Required readings will introduce students to basic terms and concepts associated with the responsible and ethical conduct of research, which are reinforced by related lectures and group discussions. The readings will be made available electronically on Sakai by the course director on the first day of class.

The required readings represent various sections found in the textbook by Adil Shamoo and David Resnik, Responsible Conduct of Research, 2nd edition, 2009, Oxford University Press. [Available electronically through Davis Library or by loan from the course director].

EXPECTATIONS FOR COURSE DECORUM
Students are expected to actively engage in class discussions and activities. Students’ contributions and participation will contribute to their final grade. Students should arrive on time and be in their seats at the start of each seminar, and be respectful of their fellow colleagues by not engaging in work or computer activities during the class. Student preparedness, self-motivation and initiative, timeliness to follow-up on required assignment, are critical elements for the development of students. Students should expect instructors to communicate expectations and instructions clearly and concisely. Students should also expect faculty to provide them with relevant resources, activities, experiences and feedback to facilitate their success. The graduate faculty is fully committed to fulfilling their responsibilities and pledge to work diligently to ensure that each of
our students has the opportunity to be successful. In return, faculty expect their students to behave in a professional, responsible, and ethical manner; demonstrate a positive attitude and an enthusiasm for learning, and respect for themselves and for others; engage in open and enabling dialogue, and be prepared for each class; be flexible and be accountable for any assigned responsibilities. Ethics is not always “black” and “white”. In fact, the most difficult (and most interesting) issues are those that fall in this “grey” zone. Perspectives from a diverse audience enhance the learning experience. You should feel welcome to discuss your views and experiences from different countries, cultures, values, and beliefs. Therefore, it is essential that we respect each other’s position or opinion (student or lecturer) on a topic, even if we don’t agree with that perspective. There will be rich opportunity to explore the factors upon which those perspectives are based. This can be a meaningful (and even fun) experience provided we have an environment that is mutually respectful and invites participation from day one.

CLASS RECORDINGS
Classes are recorded for instructor purposes and students should check with their course director for availability.

ASSESSMENT AND GRADING
A student’s final grade in this course will be based on the following three components: 1) the quality and consistency of the student’s participation in class and team discussion on various topics in ethics, which will account for 40% of their final grade; 2) the average grade received by the student’s team on 5 written team assignments which will account for 20% of their final grade; 3) the final grade received for completion of the on-line drug development course which will account for 30% of their final grade; and 4) the development of a personal “ethics statement” and its inclusion in the student’s e-portfolio which will account for the final 10% of their final grade.

The following grading scheme will be used to determine a final course grade based on 500 TOTAL POINTS:

1. **Class and Team Participation Grade = 40% of Total Points (200/500 possible points):**

   **Attendance (100 possible points)**
   Participation in responsible conduct of research training is an NIH requirement before scientists can engage in human or animal research. Therefore classroom attendance will be an important component of your grade and will comprise 20% of your final grade (i.e. 100/500 Total Points):

   - 1 absence is allowed = 100 % of 100 possible points = 100 points
   - 2 absences = 75% of 100 possible points = 75 points
   - 3 absences = 50% of 100 possible points = 50 points
   - 4 absences = 25% of 100 possible points = 25 points
   - 5 absences = 0% of 100 possible points = 0 points

   **Quality and Consistency of Classroom Participation (100 possible points)**
   At various times throughout the semester, the course director will assess the quality and consistency of each student’s participation in class using the Course Director’s Evaluation of the Quality and Consistency of Student Participation form found in this syllabus. As needed, the course director may provide students with a “mid-term evaluation” during the first Week of October to inform students on areas for improvement for the rest of the semester. Students will be assessed in 5 domains each worth 20 points (100 possible points).

2. **Team Assignment Grade = 10% of Total Points (50/500 possible points):**

   To provide students with an opportunity to engage in interdisciplinary collaboration, build on the knowledge gained from assigned readings, as well as draw from the expertise students from different disciplines possess, the class will be divided into three interdisciplinary teams that will
work together throughout the semester on team assignments. Each written team assignment (i.e. a collective team opinion on required readings) will be graded on a 25 point scale, and each student will receive the total points their team receives for 2 written assignments (50 total possible points) which will account for 10% of their final course grade.

3. **Making Medicines On-Line Course Grade = 40% of Total Points (200/500 possible points):**

Completion of all seven modules of the on-line *Making Medicines* course is required to receive a final grade in this course. A student’s final *Making Medicines* on-line course grade, which is the average of 7 chapter tests taken at the end of each module, will account for 40% (200 possible points) of the final PHRS 801l course grade. Points earned for the *Making Medicines* grade each student achieves is allocated as follows:

- *Making Medicines* Grade of 80 -100% = 200 points
- *Making Medicines* Grade of 70% - 79.99% = 160 points
- *Making Medicines* Grade of 62.5% - 69.99% = 140 points
- *Making Medicines* Grade < 62.5% = 50 points

4. **Development of an Ethical Philosophy Statement Grade = 10% of Total Points (50/500 possible points):**

Students are required to develop a personal reflection on the ethical principles that will guide them through their career. To develop their personal statement on ethics, students will use the knowledge gained from this course as well as insight they have acquired through the process of self-discovery they have engaged in during the semester from their readings and discussions with faculty and peers. The student’s philosophy statement on ethics is meant to serve as a guiding compass throughout their graduate training as issues involving ethical practices will be encountered early in their scientific careers. To receive full credit for this course, students are required to present their personal ethics statement as a single page in their e-portfolio. By displaying their ethical compass in their e-portfolio, it will be easily accessible and visible to others as a reminder of the shared ethical principles valued and practiced by students and faculty. Students must submit an ethics statement to receive a final grade in this course and will receive 50 points after posting their ethics philosophy statement on the e-portfolio and sending the link to their e-portfolio to the course director for review.

**FINAL COURSE GRADE**

Students in "Ethics & Foundations" will be evaluated on the basis the total points as detailed below:

<table>
<thead>
<tr>
<th>I. Class and Team Participation</th>
<th>200 points (40%)</th>
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<tr>
<td>II. Written Team Assignments</td>
<td>100 points (20%)</td>
</tr>
<tr>
<td>III. Making Medicines Course</td>
<td>150 points (30%)</td>
</tr>
<tr>
<td>IV. Ethics Statement</td>
<td>50 points (10%)</td>
</tr>
</tbody>
</table>
| **Total:**                      | **500 points**   (

Only final letter grades of H, P, L, or F can be assigned for this course according the following scale:

<table>
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<tr>
<th>PHRS 801 Course Guidelines for the Assignment of Letter Grades</th>
<th>Letter Grade</th>
<th>Numerical Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>The H grade clearly indicates the student has shown such outstanding promise in all aspects of the research field under study that he/she will be strongly encouraged to continue. Demonstrates clear mastery of subject matter; superior knowledge in terms of breadth and depth; outstanding ability to extend research beyond current knowledge base; clear evidence of creative thought.</td>
<td>H</td>
<td>88.0 - 100</td>
</tr>
</tbody>
</table>
The P grade indicates the student has shown solid promise in the aspect of the discipline under study. Good but not outstanding breadth and depth of knowledge of subject matter; logical extension of experiments; appropriate level of ability to synthesize and extend research beyond knowledge base; some evidence of creative thought.  

The L grade states that, while not yet showing unusual promise, the student may continue to study in the discipline with reasonable hope of intellectual development. Limited breadth or depth of knowledge; evidence of minimal competency; limited ability to synthesize and extend research knowledge base; little evidence of creative thought.

A grade of F should warrant an advisor’s questioning of whether the student may suitably register for further study in the discipline. No understanding of subject matter; evidence of major deficiencies in subject matter; insufficient breadth and depth of knowledge; absence of ability to synthesize and extend.

### COURSE GRADING POLICIES

Registrar’s guidelines on grading and use of numerical grading scales for this course can be found on the University’s policy page [http://registrar.unc.edu/academic-services/policies-procedures/university-policy-memorandums/upm-24-the-grading-system](http://registrar.unc.edu/academic-services/policies-procedures/university-policy-memorandums/upm-24-the-grading-system)

### ADJUSTING GRADES

Missed written assignments will receive a grade of “0” unless alternate arrangements have been made. All assignments must be submitted, or the student will receive an “Incomplete” for the course. If a student disagrees with a grade for a particular assignment, she or he must raise this with the course instructor within one week of receiving the grade. Students who have questions regarding their semester grade must contact the course director within two business days after the grade has been posted on ConnectCarolina.

### ATTENDANCE

Students are expected to be present at each class unless arrangements are made with the course coordinator at the beginning of the semester. Student attendance and participation are required to receive a passing grade for this course. The course coordinator will meet individually with any student whose attendance is considered unacceptable, or who is not actively participating in class and team discussions, to discuss the matter in greater detail. Make up time is not permitted for unexcused absences and only students providing a doctor’s note stating they were sick during class time will be exempt from this rule. In this case, assessment of a student’s participation during their absence will be decided by the course director and may be made up by:

1. The assessment of the quality and consistency of student participation in class during the semester will be based upon those classes in which they were present.
2. Other make-up opportunities that are left to the discretion of the course instructor which include: student review of class recordings and individual completion of writing assignments on the assigned readings; a special written assignment on the class topic that may require a literature search; or an oral exam on the class topic by the course director.
3. Students who have not completed required additional work as determined by the course coordinator will receive a temporary grade of IN (incomplete). Students with an incomplete grade must arrange a meeting with the course coordinator to complete the necessary additional work. Faculty are aware that at times students may have a conflict with PHRS 801 that may prevent them from attending or arriving on time. In such instances, students must notify the course director in advance of their impending absence. If a student is aware of a conflict with their schedule, it is their responsibility to contact the course coordinator to discuss the issue and to make up any missed work if given the opportunity by the course director.
If a student wishes to drop the course after a semester begins, the student must complete a Withdrawal Form and obtain the permission of both the course director and Divisional Director of Graduate Studies. If at the time of withdrawal the student is failing, then a grade of F will be assigned to the student's permanent record by the Graduate School and the student will become ineligible to continue in the program.

COURSE POLICIES FOR REMEDIATION AND RESOLUTION OF IN GRADES

1. A course policy of no remediation for a final course F grade is in place for this course.
2. By University policy, IN grades must be resolved by the first day of the next semester before the student may progress to any course for which this course is a prerequisite; All other IN grades must be resolved as specified to the student in writing, by the course director, but in no circumstance later than the first day of class when the course is next offered.
3. A temporary grade converts to F* unless the grade is replaced with a permanent grade by the last day of classes for the same term one year later.

ASSIGNMENT GUIDELINES

Required reading assignments for each class can be found on the course schedule at the end of this syllabus. The actual reading materials corresponding to the topics described in the course schedule are posted on the course's Sakai site in a folder titled, “Assigned Readings”. During the first week of class, students will be assigned to an interdisciplinary team and introduced to the topics that will be discussed during the semester on which they will address specific issues through group discussion. Generally, students will be expected to complete and submit each written group assignment on an assigned reading to the course director by 5 pm on the Friday prior to the next class in parallel with the schedule of topics that will be discussed in class (see Course Schedule). Late assignments will not be accepted and make-up assignments will not be permitted for unexcused absences and only students providing a doctor’s note stating they were sick during this time will be exempt from this rule. In this case, the nature and scope of the make-up assignment will be decided by the course director.

ACADEMIC INTEGRITY / HONOR CODE

The principles of academic honesty, integrity, and responsible citizenship govern the performance of all academic work and student conduct at the University as they have during the long life of this institution. Your acceptance of enrollment in the University presupposes a commitment to the principles embodied in the Code of Student Conduct and a respect for this most significant Carolina tradition. Your participation in this course comes with the expectation that your work will be completed in full observance of the Honor Code. Academic dishonesty in any form is unacceptable. If a violation is suspected, it may be reported to the Student Attorney General’s Office. If you have any questions about your responsibility or the responsibility of faculty members under the Honor Code, please visit the Office of Student Conduct web site (https://studentconduct.unc.edu/), consult the Graduate and Professional Student Attorney General (gpsag@unc.edu), or contact a representative within the UNC Eshelman School of Pharmacy. More information on The Honor Code can be found in the UNC Eshelman School of Pharmacy Student Handbook. Additionally, The Instrument can be found at https://studentconduct.unc.edu/sites/studentconduct.unc.edu/files/documents/instrument.pdf
OTHER COURSE POLICIES

Plagiarism and Referencing  You are encouraged to use a variety of information resources to support your assignments, but you must give credit for any and all ideas that are not originally your own. In addition to citing published works, you must also reference any ideas derived from the Internet, lectures or seminars, or personal correspondence.

Students with Disabilities  The UNC Eshelman School of Pharmacy is committed to providing reasonable accommodations for all persons with documented disabilities or accessibility concerns in accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If you have a medical condition, disability, or accessibility concern that may impact your ability to meet the academic demands or requirements of the course and you would like to speak with someone, please contact the UNC Office of Accessibility Resources and Service (ARS) in person at the Student and Academic Services Building (SASB) North (Suite 2126), by email at accessibility@unc.edu or via their website: https://accessibility.unc.edu. To review the steps students take to register with ARS, visit this link: https://accessibility.unc.edu/students/not-yet-registered-ars/register-accommodations-resources-services-overview. For other general questions, please contact the Director of Student Affairs at the UNC Eshelman School of Pharmacy.

Information Technology  Information Technology is an important part of the educational experience at the UNC Eshelman School of Pharmacy. The staff of the School’s IT department (known as ITSOP) will assist in any way possible with IT and computing needs within the appropriate guidelines of the University. For more information on the School’s IT resources visit the General Information section of the UNC Eshelman School of Pharmacy Student Handbook. The University of North Carolina also provides numerous IT and computing resources, and students are urged to take advantage of all available resources (see http://faopharmacy.unc.edu/information-technology-2/).

Inclement Weather  Occasionally, inclement weather impacts the School’s ability to hold regularly scheduled classes. The school’s inclement weather policy is intended to provide equity for students regardless of campus as well as allow the School and its students, faculty, and staff to remain fluid and agile during inclement weather events. Ultimately, the safety of students, faculty, and staff is the ruling factor that guides the policy.

Campus closings and delayed/flex starts due to inclement weather are administered on a university level. Students are encouraged to visit their campus specific website to determine if classes have been cancelled or if a delayed/flex start has been enacted. Students are also encouraged to register for their campus specific alert system to be notified via text or social media platforms.

Students are highly encouraged to familiarize themselves with the complete inclement weather policy found in the UNC Eshelman School of Pharmacy Student Handbook. This policy provides explicit details for all inclement weather related scenarios and acts as the school’s guide for handling them.
COURSE POLICY ON STUDENT EVALUATIONS OF INSTRUCTOR AND COURSE EFFECTIVENESS

It is a course expectation and a responsibility of all students completing a course to complete the course evaluation. Student feedback is essential and highly valued in the School’s efforts to continually improve the quality of courses and the effectiveness of our faculty as educators. In addition, the accrediting body for the University of North Carolina requires that the School collects and uses assessment data for continuous quality improvement. As a faculty, we can assure you that your feedback is reviewed in detail. The evaluations are taken very seriously by course directors, individual instructors, and the School. For more information about course evaluations: https://pharmacy.unc.edu/about/ospa/course-evaluations/.

Online course evaluations will be available for students beginning the last week of the course. Students will receive an email message directing them to a website where they can login using their ONYEN and complete the course evaluation. The course evaluation must be completed by midnight December 9th, 2016. All course evaluations are confidential and anonymous. Course evaluation website: www.digitalmeasures.com/login/unc/student

FINAL COMMENTS

The course director reserves the right to make changes to the syllabus, including project due dates and test dates, when unforeseen circumstances occur. These changes will be announced as early as possible so that students can adjust their schedules.

SYLLABUS CHANGES STATEMENT:

The course director reserves the right to make changes to the syllabus, including project due dates and test dates, when unforeseen circumstances occur. These changes will be announced as early as possible so that students can adjust their schedules.

COURSE SCHEDULE

The first and last day of this course will conform to the University’s Academic Calendar. A detailed listing of the lecture topics and dates for this course can be found on the Table at the end of this syllabus.

STUDENT ASSIGNMENT TO INTERDISCIPLINARY GROUPS

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<thead>
<tr>
<th>Team 1</th>
<th>Team 2</th>
<th>Team 3</th>
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I. Course Director’s Evaluation of the Quality and Consistency of Student Participation Form

Student's Name: ______________________________________________________

Course Director's Name: ________________________________________________

Overall assessment: (Total Points out of 100) = __________ points

Quality of Class Participation (points):

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<th>Frequently (20 pts)</th>
<th>Occasionally (15 pts)</th>
<th>Rarely (10 pts)</th>
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<tr>
<td>1</td>
<td>Organizes information logically and effectively when asking or answering questions in class</td>
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<td>2</td>
<td>Asks probing questions on topics discussed in class</td>
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<td>3</td>
<td>Actively participates and contributes to the class discussion</td>
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<td>4</td>
<td>Listens reflectively and responds positively to opinions of others</td>
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<td>5</td>
<td>Demonstrates the highest level of professionalism towards others. Traits such as leadership, accountability, dedication, positive demeanor, and assuming shared responsibility are readily apparent</td>
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UNC Pharmaceutical Sciences / Approved; last update April 17, 2017
## Course Schedule Fall 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Chapters</th>
<th>Topics</th>
<th>Instructor</th>
<th>Department</th>
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<tbody>
<tr>
<td><strong>PROFESSIONAL DEVELOPMENT: TUESDAY CLASS</strong></td>
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<tr>
<td>Tues: 8/22</td>
<td>Chapter 8' pgs 146-153</td>
<td>Orientation: Your Moral Compass, Ethics, and On-line Presence</td>
<td>Roy Hawke, PhD Aaron Todd</td>
<td>DPET; Offices of Grad Ed and Student Affairs</td>
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</tr>
<tr>
<td>Tues: 8/29</td>
<td></td>
<td>Chapter 8' pgs 146-153</td>
<td>Responsible Conduct of Research: Scientific Research and Ethics</td>
<td>Eric T. Everett, Ph.D. <a href="mailto:Eric_Everett@unc.edu">Eric_Everett@unc.edu</a></td>
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<td>Tues: 9/5</td>
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<td>Chapter 4 &amp; 6'</td>
<td>Mentoring, Authorship, and Collaboration</td>
<td>Roy Hawke, PhD <a href="mailto:rhawke@email.unc.edu">rhawke@email.unc.edu</a></td>
</tr>
<tr>
<td>Tues: 9/12</td>
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<td><a href="http://myidp.sciencecareers.org/">http://myidp.sciencecareers.org/</a></td>
<td>The IDP: You Path to Career Goals</td>
<td>Aaron Todd <a href="mailto:aaron_todd@unc.edu">aaron_todd@unc.edu</a></td>
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<td><strong>RESEARCH ETHICS: TUESDAY CLASS</strong></td>
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<tr>
<td>Tues: 9/19</td>
<td></td>
<td>Chapter 10' pgs 189-195</td>
<td>Conflicts of Interest</td>
<td>Joy Bryde <a href="mailto:jbryde@email.unc.edu">jbryde@email.unc.edu</a></td>
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<tr>
<td>Tues: 9/26</td>
<td></td>
<td>Chapter 9' pgs 173-182</td>
<td>Patents and Intellectual Property</td>
<td>Dhiren Thakker, PhD <a href="mailto:dhiren.thakker@unc.edu">dhiren.thakker@unc.edu</a></td>
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<td>Tues: 10/3</td>
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<td>Chapter 5' pgs 88-97</td>
<td>Industry Contracts and Collaboration</td>
<td>Nina Cannon <a href="mailto:nina.cannon@unc.edu">nina.cannon@unc.edu</a></td>
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<tr>
<td>Tues: 10/10</td>
<td></td>
<td>TBA</td>
<td>Plagiarism in Research</td>
<td>Patrick D. Brandt, PhD <a href="mailto:patrick.brandt@med.unc.edu">patrick.brandt@med.unc.edu</a></td>
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<td>Tues: 10/17</td>
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<td>Chapter 3'</td>
<td>Recording, Reporting and Management of Data in the Laboratory</td>
<td>Ken H. Pearce, PhD <a href="mailto:khpearce@unc.edu">khpearce@unc.edu</a></td>
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<td>Tues: 10/24</td>
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<td>Chapter 11' pgs 226-235</td>
<td>Use of Animals in Research</td>
<td>Tracy Heenan, PhD <a href="mailto:tral@med.unc.edu">tral@med.unc.edu</a></td>
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<td>Tues: 10/31</td>
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<td>Chapter 12' Pgs 246-264</td>
<td>Translational Research: Clinical Trials and the IRB with Case Example(s)</td>
<td>Charlotte Coley <a href="mailto:chcoley@email.unc.edu">chcoley@email.unc.edu</a></td>
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<td>Tues: 11/7</td>
<td>TBA</td>
<td>Research Ethics in the Real World</td>
<td>D.B. Resnik, JD, PhD</td>
<td>Bioethicist, NIH</td>
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<td>Tues: 11/14</td>
<td>Six red flags of suspect work, Nature 2013</td>
<td>Problems/Ethical Dilemmas in Medicinal Chemistry Research: Case Discussion/Faculty Perspectives</td>
<td>Mike Jarstfer, PhD</td>
<td>CBMC</td>
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<td>Tues: 11/21</td>
<td>TBA</td>
<td>Problems/Ethical Dilemmas in Pharmaceutics Research: Student Group Cases and Faculty Perspectives</td>
<td>Phil Smith, PhD</td>
<td>MOPH</td>
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<td>Tues: 11/28</td>
<td>Chapter 7’, pgs 112-121</td>
<td>Peer Review, Publication and Open Access</td>
<td>Tim Wiltshire, PhD</td>
<td>DPET</td>
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<td>Tues: 12/5</td>
<td>TBA</td>
<td>Pharmaceutical Outcomes Research with Case Example(s)</td>
<td>Joel Farley, PhD</td>
<td>DPOP</td>
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<td><a href="mailto:jffarley@unc.edu">jffarley@unc.edu</a></td>
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**PHRS 801 Foundations for Cross-Disciplinary Training in the Pharmaceutical Sciences**

**Tuesdays:** 12:30-1:20pm, Room 102 Beard Hall

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