



GRADUATE STUDENT HANDBOOK

(Revised February, 2009)

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INTRODUCTION TO THE PHARMACOLOGY & TOXICOLOGY GRADUATE PROGRAM

The Department of Pharmacology & Toxicology offers a Ph.D. program through the Graduate School of the University of Utah. It is the goal of the program to prepare students to function independently as scientists in a variety of settings including academic, pharmaceutical, and biotechnology research laboratories, as well as non-laboratory, science-related professions such as scientific writing, law, and business fields. This goal is accomplished through formal didactic courses, seminars and journal clubs, laboratory research rotations, and dissertation research. Every attempt is made by the faculty to help the student complete the program in a timely fashion. Typically, students graduate within 5 years of entering the program, although it is appreciated that the nature of some projects and approaches requires a longer time commitment for full completion of the dissertation work.

I. OVERVIEW OF MAJOR EVENTS

First summer

Visit all faculty (first two weeks on campus) *First rotation*

First year – Fall

Coursework *First, Second rotation*
Research rotations *First rotation report and slides due*
Seminar
Journal Club

First year – Spring

Coursework *Second, Third rotation*
Research rotations *Second rotation report and slides due*
Seminar
Journal Club

First year – Summer

Finish first-year rotations *Select mentor for dissertation research*
Third rotation report and slides due by beginning of August

Second year – Fall

Coursework *1st-year rotation report seminar; Written portion of qualifying exam (in Pharmacology class); Three research-proposal abstracts for oral exam due beginning of January*
Seminars
Journal Club
Begin Dissertation research

Second year – Spring

Coursework *Written qualifying exam (in class)*
Seminars *Qualifying Exam research proposal due ~1 week after end of term*
Journal Club

Second year – Summer

Dissertation research *Oral Qualifying Exam (approx. 3 weeks after Spring semester ends)*
Choose dissertation committee, prepare proposal

Third year -- Fall

Dissertation research

Fulfill teaching requirement

Finish any core courses/electives

Third year – Spring

Dissertation research

*Dissertation proposal seminar presentation**Fulfill teaching requirement***Fourth-Fifth year**

Dissertation research and defense

*Fulfill teaching requirement***II. GRADUATE STUDENT FUNDING****A. Stipend**

Admission to the Ph.D. program includes a stipend (\$25,000 as of 7/1/09) plus the cost of individual health insurance for a 12-month period. Stipend support for the first year derives from Departmental resources, whereas stipend support during the student’s dissertation research derives from the mentor’s research funding.

B. Outside Employment

The stipend above is considered a livable wage, and students are therefore strongly discouraged from engaging in employment outside the Department. If a student is employed outside the Department, the GTC or the student’s Dissertation Committee will monitor whether such employment interferes with the expectations of the program regarding the student’s progress in courses and research work and in the amount of time the student is expected to spend in research and service. If the GTC or the Dissertation Committee determines that outside employment is interfering with the student’s progress, the student may be asked to reduce their outside employment or to leave the program.

C. Stipend Support During Dissertation Research

Stipend support for the period in which the student is conducting dissertation research is the responsibility of the student’s faculty mentor and is normally derived from research grants. No Departmental funds are available for this purpose. Normally, the student will select the laboratory in which to pursue dissertation research in summer between the first and second year (see “Choice of Dissertation Advisor” below), and the student should verify that stipend support will likely be available from the mentor for the duration of the project.

D. Supplement to the Graduate Student Annual Stipend Program

To encourage graduate students to apply for non-departmental support, the Department allows students who are awarded a competitive individual fellowship or a minority supplement to supplement the standard graduate stipend by \$5,000. These supplementary funds will derive from the same source as the student’s current stipend support. Some fellowships do not allow stipend supplementation, and students should be aware of such limitations. The following conditions apply to stipend supplementation:

- 1) Only students awarded additional funding from an extra-departmental source are eligible to receive a stipend supplement.

- 2) If a student receives a fellowship that awards less than \$5000, then the supplement is only for the amount of the fellowship award.
- 3) A student receiving a fellowship can choose between being awarded a supplement to his/her stipend or a travel award of up to \$5,000 to visit a laboratory or to attend a scientific meeting. The student is restricted to the travel award if the organization funding the fellowship does not permit stipend supplementation.
- 4) The funds allotted for supplementing the stipend or for a travel award should be used during the period covered by the fellowship.
- 5) Any travel award is regulated by the policy of the University regarding travel.

E. Tuition

Tuition for graduate students is paid by the University of Utah Graduate School with the following conditions:

- 1) The student must be enrolled for 9-11 semester hours of graduate coursework (5000 level or above) in the fall and spring semesters. Students covered by the tuition benefit plan through the graduate school can register for 3 semester hours in the summer. Incoming first-year students should register for 3 credit hours of PHTX 7920 and students defending a dissertation should register for 3 credit hours of PHTX 7970 or 7980. The Graduate School will NOT pay for more than 11 credits in either the spring or fall semester or more than 3 credits in the summer. If the student wishes to enroll in more credits, he/she will be financially responsible for the classes. Tuition support for such instances should be discussed by the student, the mentor, and the Department Chair.
- 2) The student must be receiving support from the Pharmacology and Toxicology Department or its faculty of at least \$6,000 per year.

The Graduate School will NOT pay tuition if the student receives a fellowship that includes tuition support.

At present, the policy of the Graduate School is to provide tuition payments for only five years, with the exceptions noted below. Tuition for students beyond five years will not be paid by the Department, and is the responsibility of the student and/or mentor. Students still enrolled beyond the fifth year need only register for three credit hours per semester to retain full time status and to minimize tuition obligations.

Exceptions: Students entering with an MS (or other advanced) degree from *another University* will receive only 4 years of tuition support from the University of Utah. Students entering with an MS (or other advanced) degree from the *University of Utah* will receive only 3 years of tuition support for the PhD from the University of Utah.

Students graduating in the summer semester must be registered for three credit hours.

Important note: (from the guidelines for the Graduate Tuition Benefit in the Graduate School) **Out-of-state, non-international graduate students who receive a tuition benefit MUST apply for Utah residency upon fulfilling sixty (60) semester credit hours at a regionally accredited Utah higher education institution. Credit hours for graduate-level courses 6000 and above shall be multiplied by 1.5 in calculating the required 60 semester credit hours (i.e. you only need 40 hours of graduate level credit). A student's ability to establish residency will not affect receipt of a tuition benefit. (For the complete Code on Utah residency, revised 2002, go to: <http://www.sa.utah.edu/admiss/appdownload/Resident.pdf>).**

III. GRADUATE STUDENT CURRICULUM

A. Course Registration

The University of Utah "Class Schedule Student Handbook" is available in the lobby of the Olpin Student Union Building approximately 3 months before each semester begins. The Class Schedule also is available on-line at:

<http://www.utah.edu/portal/site/uuhome/menuitem.ddac5bbd6efcaf8ab123b610c1e916b9/?vgnextoid=1223584d6f665110VgnVCM1000001c9e619bRCRD>.

Registration materials are e-mailed to students informing them of their assigned registration dates.

Registration must be completed by the assigned date or a late registration fee is charged to the student.

NOTE: All official university correspondence is done via e-mail through the student's U of U e-mail address. All official department correspondence also occurs via this route. It is therefore imperative that students check their official U of U e-mail daily.

Nine credit hours per semester is considered full-time enrollment. The graduate school tuition waiver will cover 9-11 credit hours for the fall and spring semesters, and 3 credits in the summer. Because Departmental funding is contingent upon student enrollment hours, **students receiving the Graduate School Tuition waiver should be instructed to always register for the maximum number of credits covered by the TBP.**

Continuing students are **NOT** required to register for **summer semester** unless they intend to defend their dissertation that semester or if they have to demonstrate continuous registration for student housing, foreign student visa status, or fellowship validation. In such instances, the student should register for the minimum of 3 credit hours. **Students DO NOT need to register for the summer semester to maintain health insurance coverage.**

Students who have passed prelims and/or completed course requirements must register for 9-11 credit hours of Pharmacology 7970 (Thesis Research: Ph.D.) in each of the Fall and Spring semesters.

B. Program Curriculum:

The objectives of the curriculum are 1) to provide a strong background in modern-day, basic biomedical sciences that provides the underpinning for pharmacology and toxicology, 2) to train students in the fundamental concepts of pharmacology and toxicology as a discipline, and 3) to facilitate more specialized training as needed for the dissertation research. Coursework is normally completed during the first two years.

The required curriculum in basic biomedical sciences consists of required courses in molecular biology, biochemistry and cell biology and may be fulfilled by the following courses:

Molecular Biology Requirement:

- Genetic Engineering (BLCM 6400); 2 sem hr, Fall semester **OR**
- Genetic Engineering for Drug Delivery (PHCEU 7960); 1.5 sem hr, Fall semester **OR**
- Gene Expression (MBIOL 6440); 1.5 sem hr, Fall semester **OR**
- Molecular Biology and Genetic Engineering (BIOL 5110); 3 sem hr, Fall semester

Biochemistry Requirement

- Protein and Nucleic Acid Biochemistry (BLCM 6410 or MBIOL 6410); 2 sem hr, Fall sem **OR**
- Advanced Biological Chemistry (CHEM 6510); 3 sem hrs, Fall semester

Cell Biology Requirement:

- Cell Biology (MBIOL 6480); 1.5 sem hr, Spring Semester **OR**
- Cellular Physiology (BIOEN 6050); 3 sem hr, Fall Semester

Physiology Requirement

The GTC will evaluate the student's undergraduate preparation in systems/organ physiology and will waive this requirement if the student has had the relevant course work and has a solid foundation in basic organismal physiology. If needed, this requirement can be met via:

- Systemic Physiology I and II (BIOEN 6000 and 6010; cross listed with PHYSL 6000/6010); 4 and 3 sem hr, Spring semester.
- Principles of Physiology (PHYSL 6200); 5 sem hr, Spring semester
- Biomedical Basis of Disease (“Pathophysiology”) (PHTX 5121); 5 sem hr, Spring semester

The Pharmacology and Toxicology core course requirements are:

- Fundamentals of Pharmaceutical Sciences (PHARM 7113); 3 sem hr, Fall Semester Year 1
- Methods in Pharmacology (PHTX 6600); 2 sem hr, Fall semester Year 1
- Principles of Toxicology, (PH TX 7114); 2 sem hr, Spring semester Year 1
- Pharmacology I (PHTX 6211); 6 sem hr, Fall semester; Taken with Pharmacy students in fall of student's second year and supplemented with 2 additional hours per week of graduate seminar in Pharmacology.
- Pharmacology II (PHTX 6221); 6 sem hr, Spring semester; Taken with Pharmacy students in spring of student's second year and supplemented with 2 additional hours per week of graduate seminar in Pharmacology.
- Professional Skills (PHTX 6690); 2 sem hr, Fall semester Year 2
- Research Ethics (PHIL 7570); 1 sem hr, Fall semester; (may be taken any Fall semester)
- Statistics (PHTX 6680); 2 sem hr, Spring semester Year 2 or 3.

In addition, the program requires **three** advanced pharmacology and toxicology courses from the list below:

- Analytical Toxicology (PHTX 7620; Spring*; 2 sem hr)

- Mechanisms of Toxicology (PHTX 7630; Spring*; 2 sem hr)
- Enzymology of Xenobiotic Metabolism (PHTX 7650; Fall*; 2 sem hr)
- Advances in Endocrine Pharmacology (PH TX 7100; Spring*, 2 sem hr)
- Advanced Topics in Cardiovascular Pharmacology (PHTX 7410; Spring*; 2 sem hr)
- Biochemical Mechanisms of Signal Transduction (PHTX 7500; Spring*; 2 sem hr)
- Cell Biol II (H GEN 6481; Spring, 1.5 sem hr)
- Neuropharmacology (PHTX 7270; Spring; 2 sem hr)
- Advances in Neuropharmacology (PHTX 7280; Spring*; 2 sem hr)

A course semester followed by an asterisk (e.g., Spring*) indicates that the course is not offered every year. Check the course catalog to determine the availability of the course or check with the course master to determine when it is to be offered.

Depending on the student's interests, other courses may be taken at any time. Some of the courses taken by graduate students in Pharmacology and Toxicology include:

- Neuroanatomy (ANAT 7710 / NEUSC 6060; yearly Fall; 3 sem hr)
- Gene Expression (MBIOL 6440; yearly Fall; 1.5 sem hr)
- Basic Immunology (PATH 7330; yearly Fall; 3 sem hr)
- Cellular and Molecular Neuroscience (NEUSC 6040; yearly Fall; 4 sem hr)
- Biomedical Applications of Mass Spectrometry (MD CH 6560; Spring; 2 sem hr)
- Structural Methods (BLCHM 6430; Fall; 3 sem hr)

NOTE: As per the Graduate Student Handbook for the Graduate School at the University of Utah, “Candidates for graduate degrees are required to maintain a 3.0 or higher GPA in course work counted toward the degree. A grade below C- is not accepted for credit toward a graduate degree. *Some departments further restrict C grades.*” **The Department of Pharmacology and Toxicology requires graduate students to complete all required core and elective courses with a grade of B- or better.** Students will be allowed to repeat a course only once. Students failing to pass the repeated course will be dismissed from the program. ***The one exception to the requirement that a core course must be repeated if the student does not get a B- or better is the Graduate Pharmacology class (PHTX 6211/6221) in which the exams serve as the written portion of the Qualifying Exam. The requirements regarding the written portion of the qualifying exam take precedent over this rule in this case (see Section V.C, pp. 15-16).**

A sample curriculum is shown below (**required courses in bold**):

Fall Semester (first year)

Fundamentals of Pharmaceutical Sciences (PHARM 7113)	3 sem hrs
Methods in Pharmacology (PHTX 6600)	2 sem hrs
Biomedical Sciences Requirement	5-6 sem hrs
Journal Club (PHTX 6710 or 6720)	0-1 sem hr
Seminar (PHTX 7890)	0-1 sem hr
*Lab rotation	<u>0 sem hr</u>
	11 sem hrs

Spring Semester (first year)

Principles of Toxicology (PHTX 7114)	2 sem hrs
Biomedical Sciences Requirement	3 sem hrs
Pharm/Tox elective(s) or Physiology	0-5 sem hrs
Journal Club (PHTX 6710 or 6720)	0-1 sem hrs
Seminar (PHTX 7890)	0-1 sem hr
*Lab rotation (PHTX 7920)	<u>0 sem hr</u>
	11 sem hrs

Fall Semester (second year)

Pharmacology I (PHTX 6211)	6 sem hrs
Professional Skills (PHTX 6690)	2 sem hrs
Biomed. Sci. / PHTX elective	0-3 sem hrs
Case Studies and Research Ethics (PHIL 7570; yearly) ¹	1 sem hr
Journal Club (PHTX 6710 or 6720)	0-1 sem hr
Seminar (PHTX 7890)	0-1 sem hr
*Laboratory research (PHTX 7920)	<u>0-2 sem hr</u>
	11 sem hrs

Spring Semester (second year)

Pharmacology II (PHTX 6221)	6 sem hrs
Statistics (PHTX 6680)	2 sem hrs
Electives or Biomedical Sciences Requirement	0-3 sem hrs
*Journal Club (PHTX 6710 or 6720)	0-1 sem hr
*Seminar (PHTX 7890)	0-1 sem hr
*Research (PHTX 7920)	<u>0-3 sem hr</u>
	11 sem hrs

¹ Potentially could be taken at another time.

* Students should be registered for **11 credit hours** each Fall and Spring semester. To bring the total number of hours to 11, students should register for as many research hours (PHTX 7920) as is necessary after all other coursework registration requirements have been met. If in a given semester the coursework requirements place the student at 11 hours, he/she should not register for additional hours. In some cases, this may mean that the student will not register for seminar (PHTX 7890) or Journal Club (PHTX

6710/6720); however, **students are still expected to participate fully in these events, even if not registered.** The Graduate School tuition waiver covers a maximum of 11 hours.

**** SUMMER:** Incoming first year students should register for 3 credit hours of PHTX 7920. Students defending a dissertation should register for 3 credit hours of PHTX 7970 or 7980. Other students covered by the Tuition Benefit Plan should register for 3 credits in the summer semester.

C. Petition for Prior Class Credits to Count Toward Degree

A student may petition for prior class credits to apply toward the fulfillment of required coursework. The student should write a letter to the GTC listing the course, the text used in the course, the number of credit hours given for the course, the grade received and a brief description of the course content. If available, the class syllabus should be included. **The GTC will determine whether the course can be counted toward the degree based on the relevance of the topic to the student's training in Pharmacology and Toxicology, the demands of the course being commensurate with graduate course-level requirements, the course material covered being current within the past two years, and the student's performance in the course being satisfactory. Approval will be granted by majority vote of the GTC.**

D. Research Rotations

Three research rotations, each 15 weeks in duration, are required to be completed in the student's first year. These rotations must be performed with different mentors so as to provide a better introduction to diverse areas of research and varied styles of scientific approach, and to provide a wider platform from which to choose a dissertation mentor.

Upon matriculation into the program in July, students are given 1-2 weeks to meet individually with all faculty and adjunct faculty in the department. This meeting serves two purposes. First, it allows the students and faculty to get acquainted, thereby increasing the sense of community in the Department. Second, it serves as an opportunity for the students to determine what laboratories and research projects are available for their first-year research rotations. Although some students enter with a strong bias regarding with whom they would like to do their research rotation, students *must* meet with all faculty, because of the dual purpose of these meetings.

Once the student has identified a laboratory in which to work, the student confirms with the mentor that adequate supervision, space and a project are available. The student then begins work on the project as soon as possible so that the project is underway before classes begin.

The exact timing of the research rotations is somewhat flexible, but in general, will follow the following schedule:

- Rotation 1: July through October
- Rotation 2: November through February
- Rotation 3: March through June

If a student enters with a Master's degree, he/she can petition the GTC to have the Master's thesis research count as one research rotation. In this case, the student need complete only two additional research rotations to fulfill the requirement.

A research rotation report and copies of the Powerpoint slides to be used in the First Year Rotation Report seminar must be submitted to the GTC by the student at the end of each rotation. Normally, the report is 2-4 pages in length and in an Introduction, Methods, Results, Discussion format. If a manuscript was submitted on the work conducted during the rotation, this will suffice as the report. *Mentors should make certain that students have completed their previous rotation reports/and slides and have submitted copies of each to the GTC.*

E. Seminars and Student Presentations

1. *Seminar Attendance:* The Department hosts seminar speakers every week, except during holiday breaks. Occasionally, two seminars will be held in one week. ***It is mandatory that graduate students attend these seminars.*** Grades (credit / no credit) for Research Seminar (PHTX 7890) are based on attendance at the seminars and are the responsibility of the Seminar Committee Chair.

2. *Student Seminars:* In the Fall semester or early in the Spring semester of the second year, each student will present an hour-long research seminar on the research rotations completed during the first year. This seminar will be given during the regular Departmental Seminar period, and is attended by the Department faculty, post-doctoral fellows, and students. This seminar will cover each of the rotations completed, and also should provide some integration across the three rotations. In general, these talks will follow a meeting presentation format, with an introduction, discussion of methods, results obtained and overall discussion for the presentation on each of the rotations, **and then end with the integrative section.** Students are **required** to practice the entire talk with **all three research rotation mentors** before presenting the final talk to the Department. The research rotation mentors are expected to assist the student in the preparation of the presentation, as well as in the integration across the three rotations.

In addition to the research rotation presentation, students will present a **dissertation proposal seminar no later than the Spring semester of the third year**, and a dissertation defense seminar just prior to the final dissertation defense. Mentors are strongly encouraged to assist their students in preparing for these seminars well in advance of the seminar date. Preparation **must** include practice presentations and questions with ample time for re-formatting the slides and presentations prior to the final public presentation.

3. *Research In Progress (RIPs):* Each month, the graduate students hold a “Research In Progress” gathering wherein one or two students present their current research (~30 min per person). Pizza typically is served at these sessions and only graduate students are present. The students organize the sessions, with the process being overseen by the graduate student representative to the GTC. Presentations can be on completed work, but also can be given on difficulties encountered in the lab/with experiments or research plans being put together (e.g. during preparation of the dissertation proposal). Students should view these gatherings as opportunities to obtain feedback on their ideas / plans / research from their peers. It is important to note that students should NOT postpone giving a RIP because they have not yet obtained “data” to talk about. Thus, students are expected to present at least once each year in a RIP session, and to attend all other RIP sessions throughout the year in order to provide feedback to their peers and to gain insight into different research projects, experimental approaches, and analytical methods.

F. Journal Club

Journal clubs meet every week throughout the academic year, during which time graduate students, post-doctoral fellows, and faculty present a scientific publication of their choice and discuss with the group the

results, strengths and weaknesses, and techniques used in the paper. Students are required to participate in a club of their choice, and will be graded on attendance (credit / no credit). The purpose of these journal clubs is to enable students to stay abreast of broad areas of research and to foster critical analysis of scientific work. There are two such journal clubs — toxicology and neuropharmacology — associated with the department at present. Students are expected to participate actively in the journal club every semester, including making presentations, even if they are not registered for Journal Club (PHTX 6710 or 6720). Students may participate in an alternative journal club on campus with permission of the GTC.

G. Teaching

Every student in the program must give **two, one-hour** lectures as a part of their graduate training. The first lecture is given in the **student's third year**, and the second lecture is given in the **fourth year** to the undergraduate pharmacy students in one of the two pharmacology classes (PHTX 5211 or 5221). The graduate student should choose a lecture topic from the previous course syllabus and then contact the faculty member who is usually responsible for the lecture to discuss the possibility of the student presenting it in his/her stead. After the lecture topic is chosen and affirmed by that faculty member, the student is to contact the coursemaster. The student will be helped by the faculty member who is otherwise responsible for that particular lecture, the coursemaster, and a member of the department Teaching Committee in organizing the lecture notes and lecture presentation and practicing the lecture presentation. The faculty member, coursemaster, and member of the Teaching Committee will also evaluate the presentation and review the evaluation with the student.

Because course handouts are due at least one month prior to the start of the course, the student must make arrangements for the lecture no later than two months before the start of the semester. **Mentors should encourage third- and fourth-year students in their laboratories to arrange for these lectures in a timely manner, but it is ultimately the responsibility of the student to arrange for these teaching experiences.**

H. Graduate School Curriculum Requirements

- *Program:* Candidates for the Ph.D. degree ordinarily must complete no fewer than three full years (six semesters) of approved graduate work (i.e., courses numbered 5000 and above), inclusive of work for the MA or MS degrees. In truly exceptional cases, a shorter period in graduate work may be approved by the Dean of the Graduate School. If a supervisory committee (e.g. the GTC) finds a graduate student's preliminary work deficient, the student may be required to register for and complete supplementary courses that do not carry graduate credit.

Doctoral candidates must file the "**Program of Study**" form with the Graduate Records Office. This form lists course work and research hours completed. **It is due by the last day of the semester preceding the semester of graduation.** The form should not be filed until approximately 75 percent of required course work is completed.

2. *Registration:* The candidate must register for a minimum of 14 credit hours of dissertation research (PHTX 7970, Dissertation Research Ph.D.) during his/her graduate tenure, and be **regularly enrolled at the University for three or more credit hours during the semester in which the final oral examination dissertation defense is taken.** Students must be continuously enrolled (excluding summer semester) until graduation.

3. *Residency*: At least one year (i.e., two consecutive semesters) of the doctoral program must be spent in full-time academic work at the University of Utah. Nine credit hours is considered a full load. Off-campus video conference courses may not be used to satisfy any part of this residence requirement.
4. *Language Requirement*: The Department of Pharmacology and Toxicology does not have a language requirement.

IV. GRADUATE STUDENT OVERSIGHT

Graduate Training Committee

1. *Overview of GTC*: Up to five faculty members and one post-qualifying exam student currently form the Graduate Training Committee (GTC). The Chair of the department is an *ex-officio* member of the committee. The basic responsibility of the committee is to monitor the progress of students and to act as liaison between the students and the department. The committee meets once a month. The GTC is responsible for deciding the course requirements and administration/evaluation of the preliminary examinations, as well as evaluating the student research reports. It also makes recommendations at faculty meetings regarding the advancement of students to Ph.D. candidacy. Other responsibilities of the GTC include conducting semi-annual GTC student interviews and considering petitions and complaints of individual students. The student representative to the GTC also serves as the Department representative to the Student Advisory Committee of the College of Pharmacy to review faculty RPT files.

2. *Student Interviews* The GTC conducts meetings with students semi-annually (approximately Dec. and June) on an individual basis to evaluate the progress of the student in the program. The GTC distributes an evaluation form to the students approximately two weeks prior to the meetings. Students are required to fill out their sections of the form and then submit the form to their rotation supervisors or mentors. The supervisor/mentor then completes that portion of the form providing an evaluation of the student's performance in both the lab and coursework. The student then meets with the advisor to discuss the content of the form/evaluation **before** the deadline for submission of the forms to the GTC. *It is the student's responsibility to make sure that the faculty member is given the form with sufficient time to complete it and meet with the student before the form is due to the GTC.* Once the advisor has reviewed his/her comments with the student, both the student and the advisor sign the form. The student then submits the form to the GTC by the due date. These evaluations are used by the GTC, the Chair, and the department to make recommendations regarding issues such as scholarships and *Advancement to Candidacy*. ***Unsatisfactory evaluations may be used as a basis for termination from the graduate program at any time.***

V. QUALIFYING (PRELIMINARY) EXAMINATION

A. General Information

Qualifying Exams, also known as Preliminary Exams, are required of graduate students before official Advancement to Candidacy. The written portion of the Qualifying Exam, consists of the exams associated with the graduate pharmacology class (PHTX 6211 and 6221) during the Fall and Spring semesters of the second year. The oral portion of the Preliminary Exam consists of preparation and oral defense of a research proposal, and is taken at the end of the student's second year, normally in May, approximately two weeks after Spring semester finals. Second-year students will be notified by the GTC of the exam date during Spring semester. The student advances to Ph.D. candidacy only after successful completion of both sections of the Qualifying Examination.

B. Qualifying Examination Committee Composition

The Qualifying Exam Committee consists of five faculty members. Each student suggests to the GTC the names of three faculty members to serve on his/her Qualifying (Preliminary) Exam Committee. The GTC then assigns the remaining two members of the committee. The GTC makes every attempt to include the three faculty members requested by the student on the student's Qualifying Exam Committee. However, sometimes it is necessary to omit one of the requested members because he/she has been asked to serve on more than two committees. In that case, the GTC assigns the remaining member of the committee as well. The student's dissertation research advisor may not serve on the Qualifying Exam Committee, but may attend the exam if he/she wishes. Each committee is chaired by a member of the GTC, who is responsible for supervising the oral section of the exam and recording the questions asked and the answers given.

C. The Exam

- *Written Essay Exam:* The written portion of the Qualifying Exam consists of the essay exams given throughout the second year in the graduate Pharmacology class (PHTX 6211 and 6221). Each exam (there typically are 8 exams throughout the year) consists of 6 essay questions, from which the student is required to answer 4 questions. Each answer will be graded by the responsible faculty member, as well as the Coursemaster. Students must pass each exam with a B or better in order to successfully complete this aspect of the Qualifying Exam. Students passing all exams with a "B" or better grade will be considered to have successfully completed the written portion of the Qualifying Exam.

For the written portion of the Qualifying Exam, if there are answers on any exam that are deemed unacceptable, the student will meet with the Coursemaster and responsible faculty member to discuss the shortcomings of the student's answer. The faculty may, at their prerogative, assign additional reading / exercises to the student to facilitate the student's understanding of the material.

Approximately one-week later, the student will be given an oral or written exam (one or more questions, as necessary) by the responsible faculty member(s) and the Coursemaster to assess whether the student now has sufficient mastery of the material. The student's grade(s) on the new question(s) will be recorded as the new grade(s) for that portion of that exam. If the student does not pass all of the exams in PHTX 6211 and 6221 with at least a "B-" (80%), or if there are significant deficiencies referred to the GTC, the student will be required to take a comprehensive written exam on the material from PHTX 6211/6221 at the end of the second year (no later than July 1). The faculty who participated in the Graduate Pharmacology classes will prepare and grade the comprehensive exam.

This is considered the second attempt at the written qualifying exam. The student is required to pass all questions on this comprehensive examination with a "B-" (80%) or better mark in order to successfully complete the written component of the Qualifying Exam. If this examination is not passed with a B- (80%) or better grade, the student will not be admitted to candidacy for the Ph.D. degree, as per the policy of the Graduate School at the University of Utah. The student may petition the GTC, in consultation with his/her mentor, to pursue a terminal Master's Degree.

***Note:** In the case that a student does not get an overall grade of B- or better in PHTX 6211 and/or PHTX 6221, they will be given an "incomplete" (I) for that course. If the student successfully passes the comprehensive, written qualifying exam described above, the grade on that comprehensive exam

will be recorded as the grade of record for PHTX 6211/6221. If the student does not successfully pass the comprehensive written exam, the original grade received in PHTX6211/6221 will be recorded as the grade of record.

- *Written Research Proposal:* By 5:00 PM on the first Monday in January, each second-year student submits three, research-proposal abstracts to the Chair of the GTC. The topics can be anything related to pharmacology and toxicology, but MAY NOT be the student's intended dissertation topic nor may they include the proposal that the student prepared for the Professional Skills class (PHTX 6690). Students often expand on projects that they worked on during their first-year rotations or on research questions they've been intrigued by in their coursework. The abstract, to be written in a manner analogous to the Specific Aims page of a grant, is to state concisely the significant background for the proposed project, the hypothesis to be tested, the specific aims, the methods to be used, and the potential significance of the findings. Each abstract should be approximately one page, single-spaced. The abstract should be detailed enough to enable the Qualifying Exam committee to determine what techniques will be used to address the problem.

By the first Monday in January, each second-year student also should submit to the Chair of the GTC the names of three faculty members who he/she wants to have serve on his/her Qualifying Exam Committee. As is current practice, the student's mentor may not serve on the Qualifying Exam Committee, but can attend all meetings of the student with the committee if he/she wishes. The GTC makes every attempt to include at least two of the three requested faculty members on the student's Qualifying Exam committee.

Upon receipt of the abstracts and faculty names, members of the GTC will read those abstracts and meet the following day to assign five faculty to each student's Qualifying Exam Committee, including members of the GTC as Chair of each committee. The GTC member who is the Chair of the Qualifying Exam Committee will be responsible for ensuring that the Qualifying Exam Committee then meets with the student within the next two weeks (**no later than the third week of January**). While the Chair of the Qualifying Exam Committee will work with the student to schedule this meeting, it will be the ultimate responsibility of the Chair to schedule the meeting.

At that meeting between the Qualifying Exam Committee and the student, the student will present (in Powerpoint format or as a chalk-talk) each of the abstracts to the committee. The student should allot ~ 20 min for each presentation. After the abstracts are presented by the student, the student will be dismissed, and the Qualifying Exam Committee will discuss and choose an abstract for the student to further develop for his/her qualifying exam. The student will then be invited back into the room, informed of the proposal selected, and given feedback to consider as they develop the full proposal. If the Qualifying Exam Committee deems it necessary, an additional meeting can be scheduled, to occur no later than the end of January, at which time the student can be given more feedback about the proposal. Any preparation to be done by the student for such an additional meeting will be communicated to the student by the Qualifying Exam Committee during the meeting at which the proposal topic is selected. During the initial meeting between the Qualifying Exam Committee and the student, the student and Committee also set a date for the oral exam, which typically occurs about the 3rd week of May.

After the meeting(s) between the Qualifying Exam Committee and the student, the student then prepares the written research proposal. The proposal *must* follow the NIH NRSA application format / instructions for the research plan. In addition, all questions about the use of vertebrate animals and/or human subjects must be addressed in the proposal, as per the instructions for the NIH NRSA. The purpose of this exercise is to evaluate each student's ability to identify and approach a research problem and to write a grant proposal. The students' ability to defend their research approach is also assessed. The proposal is submitted to the committee early in May, typically the week after Spring semester finals (actual date is set by the GTC in January). The oral defense of the proposal (oral exam) is then held approximately two weeks later (~ third week of May).

Summary of Oral Qualifying Examination Process

- Student submits three research proposal abstracts/specific aims pages and names of three desired faculty members to serve on the Qualifying Exam Committee to the Chair of GTC by 5:00 PM of the first Monday in January.
 - GTC reviews abstracts and assigns committees the following day.
 - Chair of each students' Qualifying Exam, in consultation with the student, schedules the meeting between the student and the Qualifying Exam Committee at which the student will present the three abstracts/proposal topics. This meeting is to take place no later than the third week of January.
 - The student presents (Powerpoint or chalk-talk) each proposal topic/abstract to the Qualifying Exam Committee. Presentations should be ~ 20 min long and include a review of the relevant background leading to the hypothesis, the hypothesis, the aims to test the hypothesis, and the methods to be used. A statement of the significance of the work also should be included.
 - The Qualifying Exam Committee chooses one of the topics for the student to develop into a full research proposal. If needed, the committee can schedule another meeting with the student at which time further feedback on the proposal could be given. Such a meeting has to occur before the end of January.
 - Student and committee decide on a date for the oral exam (usually the third week of May; specific date range to be determined by the GTC each year).
 - The student writes the full, NRSA-format research proposal. The proposal will be submitted to the Committee in early May (specific date determined by GTC each year).
- *Oral Exam:* The Chair of the Qualifying Examination Committee will provide a brief introduction to the rules of conduct in the presence of the student. The Chair will be the timekeeper and is entitled to terminate questioning at the specified limits. The Chair will keep a record of the questions asked and the relative strengths and weaknesses of the responses given.

The chair should ask the student to provide a very brief educational background to the committee. The student will then provide a brief (10 min) description of his/her research project proposal. Each examiner will then be given up to 15-min of uninterrupted time for examination on research proposal-related topics. Following all individual 15-min segments, each member of the committee will be allowed an additional five minutes during which to ask any additional questions.

The student will then be excused and informed that they will not receive (nor should they solicit) any indication of performance until after the faculty meeting at which all candidates are considered.

The committee will then discuss the student performance on the research proposal to determine, by vote, whether the performance on the oral portion of the Qualifying Exam was satisfactory or unsatisfactory. The Chair will keep a record of the discussion. The committee will vote on a recommendation for pass, conditional pass, or fail. **A simple majority vote is required to pass the student.** If a conditional pass is voted, the committee will define possible courses of remedial action to be presented to the entire faculty for consideration and approval. **A broad, clearly unsatisfactory performance (“fail”) will require a re-write of the proposal and/or a re-take of the oral portion of the Qualifying Examination.**

D. Advancement to Candidacy Faculty Meeting

The Chair of each student’s committee will summarize the student’s academic file including coursework taken, grades received, research rotation evaluations, seminar evaluations, publications, fellowships received, and other relevant factors. The Chair of the Qualifying Exam Committee will provide the faculty with a brief verbal synopsis of the student’s performance on the written portion of the Qualifying Exam, as well as on the research proposal and oral examination, together with the final recommendation of the Qualifying Exam Committee. Faculty may then ask questions of the committee Chair to which he/she will respond or allow other members of the committee to respond. The floor will then be available for free comment and discussion. The recommendation of the Qualifying Exam Committee concerning advancement to candidacy will be voted upon by the whole faculty after considering the student’s performance on the Qualifying Examination, academic achievement, and research achievements. If negative, the faculty will discuss and vote on any remedial action suggested by the Qualifying Examination Committee. **The decision to advance the student to candidacy, to require remedial work or re-take of any or all of the Qualifying exam, or to terminate the student from the Graduate Program will be made by simple majority vote of the faculty in attendance at the meeting or voting by proxy.**

E. Advancement to Candidacy

After successful completion of the preliminary examinations and forwarding to candidacy has been approved, the “Report of the Qualifying Examination for the PhD Degree and Recommendation for Admission to Candidacy” form is filled out by the student with help from the staff in the departmental office and placed in the student’s folder in the departmental office. Original forms are located in the department office or can be obtained from the Graduate School website. The form states that signatures of the Qualifying Examination Committee are required, but in our Department students have the members of the Dissertation Supervisory Committee sign this form. The University anticipates that the Qualifying Examination Committee and the Dissertation Supervisory Committee will be composed of the same individuals, but this is not the case in our Department. Thus, students do not have this form signed until they meet with their Dissertation Supervisory Committee for the first time. Proceedings may be delayed if the signatures on the “Report of the Qualifying Examination for the PhD Degree and Recommendation for Admission to Candidacy” form do not match the Dissertation Supervisory Committee member signatures on the dissertation.

Once the faculty votes to recommend a student for candidacy, that student is then eligible to register for dissertation work towards completion of the Ph.D. degree (PHTX 7970; Thesis Research: Ph.D.).

F. Remedial Action

In the instance where a student is perceived by the faculty to have performed poorly on the oral portion of the Qualifying Exam and a conditional pass is recommended, or if the student has not met other research or academic standards of the program, a number of different actions may be taken. The student may be asked to complete some remedial coursework with guidance from a faculty member, or the student may be required to take further tests, oral or written. The decision is up to the faculty as a whole and is based upon the extent of shortcomings the faculty perceives the student has demonstrated in either academic or research areas. If a re-take of the oral portion of the Qualifying exam is necessary, only one re-take is allowed, as per the policy of the Graduate School at the University of Utah..

Students who have not shown the ability or motivation that is expected of a Ph.D. candidate may be allowed to pursue only a Master's Degree if sufficient research has been completed or may simply be terminated from the program, if there is not sufficient research completed for a Master's Thesis. The faculty of the Pharmacology and Toxicology Department make every effort to encourage a student to succeed and become a scientist of high caliber, but feel that such steps may be necessary to keep the standards of the program high. It is the responsibility of the GTC and **each student's mentor** to make the student aware of the quality of his/her performance throughout his/her tenure in this program.

VI. DISSERTATION

A. Choice of Dissertation Advisor

Toward the end of the student's first year, the student must choose the mentor and laboratory with which to conduct the dissertation research. The student should discuss with the prospective mentor whether there is funding and space available for the student to conduct his/her dissertation research in the laboratory. Once the faculty member and student agree to pursue the dissertation together, he/she can begin the dissertation research.

Students normally conduct dissertation research in one of the laboratories in which they did their rotations. However, it is acceptable for a student to conduct dissertation research in a laboratory that is different from any of the laboratories in which he/she has previously worked.

B. Dissertation Project

Once the student has decided on a laboratory in which to do the dissertation research, the student, in consultation with the dissertation advisor, should choose a research project for the dissertation. The student is to design and conduct experiments to address a novel research question and interpret results of the experiments in light of that question. While it is understood that the student's dissertation project will be related to the work ongoing in the mentor's laboratory, it is expected that the actual hypothesis to be tested and experimental design will originate with the student, be original, and show creativity on the part of the student.

Thus, the dissertation project should represent a high degree of original and independent work by the student. The dissertation presents proof that the student is ready to be independent; *i.e.*, that the student has the ability to ask questions relevant to some field of inquiry, that the student has developed an appropriate, detailed approach to addressing these questions, and that the student can gather data and interpret them in relation to the current status of the field. Where components of the research project are performed by someone other than the student (*e.g.*, by core facilities, by technical support personnel, by collaborators, or by fellow laboratory members), it is the expectation that the student will have complete

familiarity with the experimental details, the underlying basis of any tests or assays, the interpretation of the data, and the validity of any conclusions. It will be the responsibility of the Dissertation Committee members to assure the student's adequate command of this information before signing the Report of the Final Oral Examination. If such components completed by others are to be incorporated into the dissertation document, that information and data generated by others should be clearly identified and labeled as work by others.

C. Dissertation Supervisory Committee

The student forms the Dissertation Supervisory Committee shortly after passing the preliminary examinations (**i.e. in the summer of the second year**). The purpose of the committee is to aid the student in successful completion of the dissertation project. The committee must have an odd number of members, with the minimum being five. One member must hold a primary academic appointment **outside** the Department of Pharmacology and Toxicology. The students generally have five committee members with the **dissertation advisor as the chairperson of the committee**. In the case where the student's mentor has a primary appointment in a department outside of the Department of Pharmacology and Toxicology, the committee must contain a chairperson whose primary appointment is in the Department of Pharmacology and Toxicology. The mentor then serves as co-chair of the committee. All University of Utah faculty members (including regular, research, clinical, emeritus, visiting and adjunct faculty) are eligible to serve as Committee members. Committee members must hold an academic or professional doctorate and/or have demonstrated competence to do research and scholarly work in the student's general field.

Dissertation committee formation is a joint effort by the student and the dissertation research advisor. Once the composition of the committee is agreed upon by both the student and advisor, a list of potential committee members' names is given to the GTC for examination. Students should not notify the individuals who will be asked to sit on the committee until the GTC has given approval. The GTC may have suggestions or perceive problems about the committee composition that should be addressed before anyone is asked to be a member. **The dissertation committee must also be approved by the Graduate School via completion of the "Request for Supervisory Committee" form.** This form can be obtained from the department office. **The student has the committee members sign this form at the FIRST committee meeting. The form is then filed with the Department Office, and a copy of the completed form with signatures is sent to the Graduate Records office for approval by the Dean of The Graduate School. At this same meeting, the student should also have the Supervisory Committee members sign the "Report of the Qualifying Examination for the PhD Degree and Recommendation for Admission to Candidacy" form.** Both forms should be turned in immediately after the meeting to the main office so that they can be submitted to the Graduate School.

Note: If the student's mentor is a research-track faculty member, a letter from the Chair, as well as a letter from the mentor and a copy of the mentor's CV should be sent to the Dean of the Graduate School, along with the "Request for Supervisory Committee" form, asking permission for the research-track faculty member to serve as Chair of the Supervisory Committee.

The first dissertation committee meeting should be scheduled **early in the Fall semester of the third year**. At least two weeks prior to that meeting, the student should submit to the committee members the dissertation proposal. The proposal should be an NRSA-format research proposal (*i.e.* ~10 pages single-spaced with a Specific Aims section, Background and Significance Section, Preliminary Data Section (if any), and a Research Design section). It is imperative that this proposal be distributed in a timely manner to the committee so that members of the committee have time to study and consider the proposal/research design so that they can provide meaningful feedback to the student at the first meeting. At the meeting, the student presents a summary of the relevant background literature, preliminary data, the hypothesis to be tested, and the specific aims of the dissertation, as well as a description of the specific experiments to be conducted. Once the committee approves the dissertation proposal, a copy of the proposal should be submitted to the GTC. **The student will present the public/departmental dissertation proposal seminar during a regularly scheduled Department seminar time in the Spring semester of the third year**. The GTC will schedule the date of that seminar during the semi-annual GTC interview with the student the preceding December.

The dissertation committee will aid the student in experimental design and data interpretation, but the student is expected to show notable independence and motivation in regards to his/her research. The student is required to meet with the dissertation committee **every six months** so that the committee can monitor research progress. More meetings may be scheduled if desired. At least **three members** of the committee must be present at each meeting. Departmental guidelines indicate that if a meeting has not been held within the sixth months prior to the GTC interviews, an incomplete grade will be given for the course "Research-Ph.D. (PHTX 7970) until the meeting is held.

D. Dissertation Document

Before a Ph.D. can be conferred, the student is required to prepare a formal written description of the work, present the work in a public seminar and successfully defend the work during a formal dissertation defense. As a partial fulfillment of the requirements for the degree of Doctor of Philosophy in Pharmacology, the written dissertation document must be signed by members of the student's dissertation committee.

The dissertation document must follow the established University of Utah format. "A Handbook for Theses and Dissertations", which gives the guidelines for the dissertation document, is available through the office of the Thesis and Dissertation Editor located in Room 208, Building 44. Document styles acceptable to the Pharmacology and Toxicology department are listed in that handbook. Doctoral candidates may submit one preliminary draft to the editor's office prior to the oral defense where a precursory check for style accuracy will be performed.

The public seminar and dissertation defense usually occur on the same day. The seminar/defense date is set by the student and dissertation committee members. **The student should submit the written dissertation to the Chair of the dissertation committee at least 3 weeks prior to the defense and to the other committee members at least 2 weeks before the oral defense. Failure to meet these deadlines will result in rescheduling of the defense date by the Department Chair.** In most cases, the student will submit numerous drafts to his/her mentor before the date is set and will have received significant input from the rest of the committee regarding the document contents. **The student and the Chair (mentor) share responsibility for deciding on the dissertation defense date.** The publishing of

announcements of the defense is the responsibility of the student and should be distributed via the main office at least one week prior to the defense date.

After the public seminar, the student defends the dissertation in front of committee members and any other interested parties. The defense is presided over by the Chair of the Dissertation Committee, and consists of:

- 1) A presentation by the student describing the main points of the dissertation (usually 5 min)
- 2) Fifteen (15) min of uninterrupted questioning by each committee member. However, members are allowed as much time as they feel is required.
- 3) Five (5) min of additional time for committee members to ask any follow-up questions.
- 4) Questions from other individuals attending the defense.
- 5) Deliberation by the committee after all individuals not on the committee have left the room. The committee will reach a majority decision (by vote) to pass or fail the student prior to signing any documents. If the student passes, the **“Report of the Final Oral Examination”** forms are signed immediately. If the student fails the defense, it will be rescheduled as determined by the Dissertation Supervisory Committee. If the student has failed because of the manner in which the dissertation is written, it will be rewritten to the committee’s satisfaction. This may not require, at the discretion of the committee, a retake of the oral defense.
- 6) After the members vote, the student is brought back into the room and the outcome and any stipulations are discussed.
- 7) **Final reading of the document is the responsibility of the Chair of the Dissertation Committee.** After the all the corrections have been made satisfactorily, the Chair of the Dissertation Committee and the Chair of the Department sign the **"Final Reading Approval"** forms. These forms and instructions on how to prepare them are available in the Thesis Office.

When the "Supervisory Committee Approval" and the "Final Reading Approval" forms have been signed, the student should submit one copy of the manuscript to the thesis editor for "Format Approval". The Thesis Editor ascertains that the dissertation follows the correct style and has no grammatical errors, etc.. **"Format Approval"** serves as clearance to duplicate the final copies.

For graduation in a particular semester, one copy of the defended, committee-approved manuscript must be submitted to the Thesis Office for "Format Approval" **four weeks prior to the last day of the semester.** For specific dates, consult *A Handbook for Theses and Dissertations*.

At least one week before the registrar's closing date for the semester, the student should submit three complete, duplicated copies of the thesis or dissertation to the thesis editor for **"Graduation Release"** (Dissertation Release).

Before the registrar's closing date for the semester, the "Graduation Release" and a copy of the "Supervisory Committee Approval" forms are filed in the Graduate Records Office by the thesis editor. The "Graduation Release" will be signed in that office if the student's file is complete.

- After the dissertation is accepted by the thesis editor, the student must submit it for publication. The University accepts three alternatives for complying with the publication requirements:
 1. The entire dissertation may be published and distributed by a publisher of the candidate's choice, exclusive of vanity publishing.
 2. The entire dissertation may consist of an article or articles accepted for publication in scholarly journals that have been approved by the dean of The Graduate School.
 3. The dissertation may be microfilmed by University Microfilms and copies may be made for public sale.

Regardless of the option used for meeting the publication requirement, an abstract of each dissertation is published in *University Microfilm's Dissertation Abstracts International*. Detailed policies and procedures concerning publication requirements, use of restricted data, and other matters pertaining to the preparation and acceptance of the dissertation are contained in *A Handbook for Theses and Dissertations*, published by The Graduate School and available in the Thesis Office, Room 208 Building 44.

The Department of Pharmacology and Toxicology requires that a bound copy of the dissertation (on bond paper) be given to the Department office and to the research mentor (the Department pays for these copies).

VII. TIME LIMIT FOR COMPLETION OF THE DOCTORATE

The time limit for completing the Ph.D. degree is determined by individual departments with the approval of the Graduate Council. Requests to exceed established time limits must be recommended by a candidate's Dissertation Committee and approved by the GTC and the Dean of The Graduate School. Students whose studies have been interrupted for long periods and who have been granted an extension to complete their degrees may be required to complete additional courses, pass examinations, or otherwise demonstrate that they are current in their field.

VIII. UNIVERSITY AND DEPARTMENTAL POLICIES RELEVANT TO GRADUATE STUDENTS

A. Student Travel

Students should be encouraged to present data at national scientific meetings. If the travel is supported by the department or research advisor funds, students should be instructed to obtain and complete travel request forms from the department office at least one month in advance of the expected travel date. Reimbursement forms must be submitted to the office within ten days after completing the travel. Students should be reminded to save receipts for costs that are claimed to accurately claim reimbursement.

B. University Policy on Student Inventions

If a student invents a patentable item under the following conditions: while funded in whole or in part by an agency of the federal government; while using University facilities and/or equipment; while an employee of the University; while participating in sponsored or organized research at the University; the student must assign rights to that invention to the University.

C. University of Utah Policy on Equal Opportunity

The University of Utah is committed to policies of equal opportunity, affirmative action and prohibits discrimination on the basis of race, color, national origin, religion, gender, sexual orientation, age or status as a Vietnam Veteran, disabled veteran or person with a disability. The University seeks to provide equal access to its programs, services and activities for people with disabilities. Reasonable prior notice is needed to arrange accommodations. Evidence of practices not consistent with these policies should be reported to the **Office of Equal Opportunity and Affirmative Action, 581-8365**. Further information also can be obtained through the Women's Resource Center 581-3030.

D. Hazard Communication and Other Laboratory Training

Upon arrival into a lab, it is the responsibility of the advisor to make the student aware of all hazards that are present. The student should be shown what to do in case of emergency, where spill containment equipment and fire extinguishers are located, etc. All labs must have available MSDS (Material Safety Data Sheets) for emergency information. In addition, it is the responsibility of the mentor to ensure that the student is trained in appropriate handling and use of animals, handling of human tissues, and handling of radioactive materials and that the student participates in the Occupational Health and Safety Program, as appropriate.

E. Program Policy on Student Leave for Medical Reasons

Pregnancy or other medical issues will not adversely affect the standing of any graduate student in this program or their eventual ability to continue in the program and complete their degree. In cases where an extended leave is taken and research or coursework is interrupted, the time to obtain the degree may be proportionally increased. Also, if extended leave is taken, stipend/support may be interrupted. It is important for the student and the mentor to fully discuss these particular eventualities if a student finds his/her program interrupted for medical reasons. Arrangements should be made prior to the event if possible.

F. Vacation

There is no formal policy regarding vacation time for graduate students. Students are expected to discuss the length and timing of any vacations with the dissertation or research rotation mentor prior to scheduling the vacation. Semester breaks are not considered "automatic" vacation time, as the University is still open. Therefore, students should discuss vacations during semester breaks with the mentor before scheduling them as well.