UNIVERSITY *of* WASHINGTON

SCHOOL OF PHARMACY
DEPARTMENT OF PHARMACEUTICS

PHD STUDENT HANDBOOK

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PROGRAM TRAINING OBJECTIVES

The doctoral program in Pharmaceutics trains research scholars in the fundamental aspects of drug delivery, drug disposition, and drug action. Drug disposition pertains to the facets of drug absorption, distribution, metabolism, transport and excretion; pharmacokinetics is a sub-discipline within the pharmaceutical sciences and is the study of the time course of these processes. Areas of training emphasis in the UW Pharmaceutics program include:

1) **Drug delivery** – methods for enhancing systemic drug exposure, its retention in the body and targeting it to the site of action in order to improve therapeutic effect
2) **Drug metabolism** – hepatic and intestinal enzyme catalyzed molecular transformations of a drug to a metabolite that often has different disposition and pharmacological properties compared to the parent molecule
3) **Drug transport** – active transfer of drug molecules across biological cell membranes in body tissues where some pharmacological or toxicological effects are elicited (e.g., brain and fetus) or drug metabolism and excretion occur (liver and kidney)
4) **Drug action** – pharmacological effects of drugs in the whole body, with a special emphasis on unique disease states or special patient populations (e.g. epilepsy, aging, pregnancy)
5) **Mathematical modeling** of drug disposition and action

Graduates of the Pharmaceutics doctoral program (PhD) will possess expertise in basic biochemical, cellular, and molecular techniques and quantitative analytical methods, as well as technical skills for the elaboration of mathematical models that describe the kinetics of drug disposition and action. They will be capable of investigating the causes of inadequate exposure to a drug at the site of action and elucidating the relationship between the kinetics of drug and metabolites in various body compartments or tissues and the manifestation of pharmacologic, therapeutic and toxic effects. They will be able to probe the impact of alteration in physiological and biochemical processes on drug disposition and pharmacological response, which may occur due to ontogeny, evolving disease states, concomitant medications and natural products, or genetic variation.

Many of these studies will require expertise with *in vitro* methodologies and the conduct of pharmacokinetic and pharmacodynamic studies in animals and humans. Pharmaceutics graduate students will receive significant interdisciplinary training by interacting with clinicians, medicinal chemists, biochemists, pharmacologists, analytical chemists, physiologists, and biostatisticians. Such training is highly valued by the pharmaceutical industry, regulatory agencies, research institutions, and academia.

THE DEPARTMENT

The Department of Pharmaceutics is comprised of approximately 90 personnel, including graduate students, post-doctoral fellows, faculty members, and research and administrative staff, all currently led by the Milo Gibaldi Endowed Chair, Dr. Nina Isoherranen. Administrative and research labs are housed within H-wing, T-wing, D-wing and F-wing of the Heath Sciences Building, on the University of Washington, Seattle campus.

The goal of our graduate programs (Doctoral and Master's) is to provide the most favorable environment possible in which students can develop their maximal potential for creative scholarship and independent research. We espouse a philosophy of inclusivity. Our overall mission in this regard is to attract, retain, and promote the success of students from all populations seeking training in the profession of pharmacy and in the pharmaceutical sciences. We subscribe to the University of Washington's mission of enhancing diversity and equity in all forms and helping students, faculty and staff understand differences in areas such as, but not limited to, religious, racial, cultural, sexual orientation, political, economic, disability, and gender perspectives. The School of Pharmacy Strategic Plan for Diversity, Equity and Inclusion can be found in its entirety at the following link here.

STUDENT CONDUCT AND EXPECTATIONS

The Pharmaceutics faculty expect students in the doctoral graduate program to take ownership of their training. Required and recommended courses of instruction are provided, but students should develop individual career development plans (please see ***Progression of Steps*** below) that integrate their coursework and research activities with relevant knowledge gained from within the broader University community and from outside sources, to best prepare themselves for the career that they envision. Students should not be constrained by what others in the program have done in the past or the activities of current peers, but rather customize their training plan to meet their personal goals.

Students in the Pharmaceutics doctoral program are expected to follow the UW student conduct code here. Importantly, they must adhere to the highest standards of academic and professional conduct. Academic honesty and professional integrity should be foremost in their minds as they navigate through our highly demanding didactic and experiential course of training. To do otherwise is to fail themselves and the public that largely subsidizes their education.

Students will be offered instruction on biomedical research integrity and responsibility in the form of courses (Biomedical Research Integrity series; see the didactic training section) and interactive discourse on scientific rigor and reproducibility (held periodically in Journal Club) to help them achieve these expectations.

DIDACTIC TRAINING

Course work for the **doctoral program** is divided into four components: (1) prerequisites which define the level of entry into the program; (2) a required core program of graded credit courses which is analogous to the major; (3) elective courses, which can be tailored to research needs and student interests; (4) seminars, Journal Club and other research related courses.

The PhD degree requires a minimum of 90 credits. Of the 90 required credits, at least 18 must be numerically graded (the graded credit must be from graduate courses of 500 level or above), and the additional credits (72 minimum) include seminar, Journal Club, research, and dissertation study. Students must complete a minimum of 27 credits of PCEUT 800 (Doctoral Dissertation) for the degree. Elective courses are available and encouraged, but not required.

PREREQUISITES

College Level Differential Calculus or Calculus I (e.g., at UW, MATH 124; 5 credit)
Candidates may be accepted into the program on the condition that any deficiencies in meeting course prerequisite are rectified by the end of the first academic year.

CORE COURSES

Of the 90 minimum required course credits, 18 credits are derived from the following numerically graded "core" courses that are intended to give students a foundational knowledge base in the field of pharmaceutical sciences.

NUMERICALLY GRADED CORE COURSE TAUGHT BY PHARMACEUTICS FACULTY:

- PCEUT 502: Drug Disposition Science (2 credits)
- PCEUT 505: Concepts in Pharmaceutical Sciences I (2 credits)
- PCEUT 506: Concepts in Pharmacokinetics (3 credits)
- PCEUT 532: Clinical Pharmacokinetics (4 credits)

NUMERICALLY GRADED CORE COURSES TAUGHT BY FACULTY OUTSIDE THE DEPARTMENT:

- MEDCH 501: Medicinal Biochemistry (3 credits)
- BIOST 511: Medical Biometry I (4 credits)

The above core courses are considered essential for all students in the doctoral program. All must be taken for graded credit. In addition, the faculty recognizes that each student may have prior training in Pharmaceutics and will accommodate petitions by the student to waive these requirements if the student demonstrates equivalent previous graduate-level coursework in the required areas. For any waived core course, the student needs to get an alternative graded course of equivalent credit approved as a replacement course. All PhD students must obtain a

grade of 3.0 or higher in the core Pharmaceutics courses and 2.7 or above in the other core courses, with a cumulative GPA 3.0 or greater for all graded credit. There may be other required courses for training grant support that students might receive.

ELECTIVE GRANT WRITING COURSE IN PHARMACEUTICS:

In response to student requests, the Department is in the process of creating and evaluating a new grant writing course that will facilitate the preparation of the research proposal needed for the General Exam and individual training grant applications such as the NIH F31. Course content has been developed and will be initially offered under the PCEUT 598 listing in Winter quarter 2025. Students who enter the doctoral program in 2024 and thereafter will be required to take the class during Winter and Spring quarters of their 2nd year in the program, in preparation for a General exam in autumn or winter quarter of their 3rd year. Students who entered the program in 2023 or earlier may take the class, but it is not a requirement. The course performance evaluation will be C/NC; it is a required course, but not numerically graded.

- PCEUT 598, Independent Study (1 cr/qtr, winter and spring Yr 02)

ELECTIVES

Elective coursework is intended to enhance the core training and should be highly individualized. There is no formal requirement for elective coursework in the Pharmaceutics doctoral program. However, the student is encouraged to take electives courses offered by UW that might be a benefit to their dissertation project and career goals.

Currently, the department offers the following electives:

- PCEUT 501 Pharmacometrics (3 credits) – offered in autumn quarter of even years
- PCEUT 503 Drug Transport (3 credits) – offered typically in the spring quarter of odd years
- PCEUT 534 Principles of Precision Medicine (2 credits) – offered in spring quarter of every year
- PCEUT 551 Intro to Drug Discovery (2 credits) – offered winter quarter of every year
- PCEUT 586 Pharmaceutical Biotechnology (2-3 credits) – offered spring quarter of every year

A longer list of selected electives offered by faculty outside of the Department can be found in ***Appendix G***. In addition, there are many other electives offered by UW faculty (see ***UW Course Descriptions*** for a complete listing) that a graduate student might find of interest to further their training and career aspirations.

SEMINARS AND LITERATURE REVIEW

All students are required to register and participate in PCEUT 583 (Journal Club) and PCEUT 520 (Seminar). They will need to accumulate at least 15 credits each during their time in the

program, unless they graduate before the minimum is achieved. Once the requirement is met, they will no longer need to sign up in these classes for credit, but are encouraged to attend.

PCEUT 520: SEMINAR (1 CREDIT/QUARTER):

Beginning in the second year, students are required to make a minimum of three PCEUT 520 Seminar presentations during their graduate study as a core component of their graduate training. The first seminar presentation will occur in their second-year in the program and can be on a general topic of relevance to the program and personal interest. Seminars in subsequent years should focus on the student's research and findings. The required number of seminar presentations can be less that three if the student defends before the 15 credit minimum is reached. See the PCEUT 520 course coordinator for additional guidance.

PCEUT 583: JOURNAL CLUB (1 CREDIT/QUARTER):

Beginning in the first year in the program, students are required to enroll in PCEUT 583 as part of their graduate training until the 15 total credit requirement is met or they graduate before that occurs. During their second year, students should expect to present or discuss one article in each quarter as a 'class lead' and actively participate in all weekly discussions. During the final examination week at the end of each quarter, first-year students are required to give a ~10 min research presentation following the conclusion of each quarterly lab rotation, as part of the Journal Club course. Students in their second year and later are expected to attend these lab rotation presentations and provide constructive feedback to their junior peers. See the course coordinator (rotates quarterly) for additional guidance, as well as senior students in the program.

RESEARCH

PCEUT 600 & 800 (VARIABLE CREDITS):

Students entering the doctoral program are required to complete three laboratory rotations under PCEUT 600 credit as research assistants (RAship) during the autumn, winter and spring quarters of their first year, before a research advisor has been declared. The first two rotations are decided by correspondence with the Department Chair and Graduate Program Director during the summer before matriculation. Students will be asked to submit their first, second and third choices. Every effort will be made to accommodate student preferences, but the first choice cannot be guaranteed. Selection of the third rotation will be based on student interest and lab availability and should be declared during the winter quarter of the first year.

Students should sign up for PCEUT 600 (variable credits) to receive credit for the rotational experience. The advisor will complete a ***Rotation Evaluation form*** at the end of each quarter to determine if the experience has been productive and credit is deserved.

Students must choose a research advisor no later than the end of spring quarter of their first academic year (Please see section on ***Choice of Advisor***). They should begin research in the lab

of their advisor by the start of summer quarter in their first academic year, signing up again for PCEUT 600 (variable credits).

After successful completion of the General Exam requirements during their third year in the program (see Appendix A), students should sign up for PCEUT 800 (variable credits) in every academic quarter (unless they take a leave of absence), until the defense of their dissertation, to meet the research requirements of the Department and the Graduate School. The student must satisfactorily complete a minimum of 27 credits of dissertation research (PCEUT 800), over a period of at least three quarters.

TRAINING SESSIONS

In addition to the requirements above, all students are required to attend and complete the following training sessions:

PRIOR TO BEGINNING LABORATORY RESEARCH

See list of required on-line training courses (students' welcome letter). Radiation Safety, Human Subjects (CITI course), and Animal Use Regulations training may also be required if relevant to the student's lab/dissertation research.

AUTUMN/SPRING QUARTER – YEAR 2

Starting summer quarter of their first year, all Pharmaceutics students are required to attend:

- Biomedical Research Integrity; the policy can be found here. The UW BRI course consists of a series of lectures and small group discussions. The entire course will take 8 hours of in-person instruction and can be fulfilled during a single 8-hr session or in parts the two annual 8-hour sessions. The first session occurs in early September and the second is in early March. Typically, researchers are required to take eight hours of training every four years.

TRAINING IN RIGOR AND REPRODUCIBILITY

The Department will provide additional scientific rigor and reproducibility training (spring, odd years) through its Journal Club course (PCEUT 583). Every student will likely receive the training twice during their time in the doctoral program (early when they are building an understanding of the research process and later when they can share their knowledge and experience).

TEACHING ASSISTANT (TA) TRAINING

Students who are to be supported by a TA appointment must take the following training:

- UW TA training is here

TITLE IX TRAINING

Husky Prevention & Response (Title IX) is a foundational, required online prevention and response course about sex- and gender-based violence and harassment. Throughout the course, the strategies offered are meant to create and support positive UW climates and endeavor to stop sex- and gender-based violence and harassment before they happen. The course includes tailored content based on your role as a graduate student. **Entering students who have not completed the Husky Prevention & Response (Title IX) student course in their first quarter will be blocked from registering for their second quarter.** The course takes 60 – 90 minutes to complete. The registration block will be lifted within approximately an hour of course completion.

Access the student course here

AUDITING A COURSE AND GRADING OPTIONS

To audit a class, students must get permission from the course coordinator. If students do not need an official record on their transcript for the class, as long as they have permission from the course coordinator and faculty advisor, they can sit in the class. If they need to audit a class with an official record on their transcript, students need to follow the process listed below. The audit option can be changed after the registration period has begun through the end of the second week of the quarter.

Students will not get credits for audited classes.

1) Register for the course.
2) Complete the **Registration Transaction Form** here [UoW 2127] (Section 2) to change the course to "Audit".
3) Obtain approval from the course coordinator to audit the course and provide initials on the form indicating such.
4) Submit the completed form to the Office of the University Registrar (OUR) via email to regoff@uw.edu.

Instructors in Pharmaceutics will not grade the homework or exams of students who audit a class. To have their homework and exams graded, students must register for the course. If the course is a required core course, students must register for it as a numerically graded course. If the course is optional, students may register for it either as numerically graded or CR/NC. Whether students can register for a course as CR/NC is at the discretion of the course coordinator. Please visit here for more information regarding the UW Graduate School's CR/NC policy.

GRADUATION

The timing of graduation is based on dissertation research progress. Students will form a dissertation supervisory committee prior to their general exam (during the second year in the

program). That committee is charged with assessing student progress at least annually starting in the spring of the second year and determining when they are ready to defend their dissertation and graduate. The average time to graduation is currently 5.5 years from matriculation; this is expected to go down, as we pull further away from the COVID pandemic. Additional information can be found below under Progression of Steps in Relation to the Doctoral Degree. The following website here is a useful resource for students as they prepare to graduate.

PhD COURSE REQUIREMENT SCHEDULE

YEAR 1			
AUTUMN	**WINTER**	**SPRING**	**SUMMER**
BIOST 511 (4 credits; A,Su)	MEDCH 501 (3 credits)	(Elective)**	
PCEUT 502 (2 credits)	PCEUT 532 (4 credits)	PCEUT 506 (3 credits)	
PCEUT 505 (2 credits)			
PCEUT 520 (1 credit)	PCEUT 520 (1 credit)	PCEUT 520 (1 credit)	
PCEUT 583 (1 credit)	PCEUT 583 (1 credit)	PCEUT 583 (1 credit)	
PCEUT 600: Lab Rotation (2 cr)	PCEUT 600: Lab Rotation (3 cr)	PCEUT 600: Lab Rotation (3-7 cr)	PCEUT 600: Research (2 credits)

YEAR 2			
AUTUMN	**WINTER**	**SPRING**	**SUMMER**
(Elective)**	(Elective)**	(Elective)**	
PCEUT 520 (1 credit)	PCEUT 520 (1 credit)	PCEUT 520 (1 credit)	
PCEUT 583 (1 credit)	PCEUT 583 (1 credit)	PCEUT 583 (1 credit)	
	PCEUT 598 (1 credit)***	PCEUT 598 (1 credit)***	
PCEUT 600: Research (6-10 credits)	PCEUT 600: Research (6-10 credits)	PCEUT 600: Research (6-10 credits)	PCEUT 600: Research (2 credits)

** Electives are not required, but students are encouraged to take classes that will enhance their dissertation research or career. **Students must register for a minimum of 10 credits per quarter AUT, WIN, SPR and a minimum 2 credits in SUM quarter to maintain a full-time status.**

*** The PCEUT 598 course prefix and number are used temporarily for the new Grant Writing course. This will be replaced by a new course prefix/number in future years.

YEAR 3 to Graduation			
AUTUMN	**WINTER**	**SPRING**	**SUMMER**
(Elective)**	(Elective)**	(Elective)**	PCEUT 800: Research (2 credits)
PCEUT 520 (1 credit)	PCEUT 520 (1 credit)	PCEUT 520 (1 credit)	
PCEUT 583 (1 credit)	PCEUT 583 (1 credit)	PCEUT 583 (1 credit)	
PCEUT 800: Research (8 credits)¥	PCEUT 800: Research (8 credits)	PCEUT 800: Research (8 credits)	

** Electives are not required, but students are encouraged to take classes that will enhance their dissertation research or career.

¥ Students who have passed their General Exam should register for PCEUT 800. Before passing the General Exam, continue to register for PCEUT 600.

GENERAL PROGRAM REQUIREMENTS

Graduate students in Pharmaceutics are also students in the UW Graduate School and, as such, must satisfy the general requirements of both the Graduate School and the requirements of the Department in which they undertake their graduate training. A full description of requirements of the Graduate School can be found here. Some of the pertinent requirements of the Graduate School and the Department are described below, dealing with scholarship, residence, supervisory committees, research dissertation, and examinations (general and final). Most forms that a student will need during their time in the doctoral program can be found here within the SOP Sharepoint Intranet (UW NetID password required).

RESIDENCE

A minimum of three academic years of resident study is required (90 credits), two of them (60 credits) being at the University of Washington. Residence is defined as 10 credits per quarter (autumn, winter, spring) or 2 credits during summer quarter. Only courses numbered 300 and above count toward residence. Dissertation research must be conducted at the University of Washington, unless the research is of a collaborative nature requiring off-campus facilities. See link here for On-Leave Policy.

Please also see ***Appendix B*** for our Department's guidelines on on-site work policy.

CREDITS AND SCHOLARSHIP

For students in the PhD program, a minimum of 90 credits must be completed. Of these, at least 18 numerically graded credits at the 500 level are required (UW Graduate School requirement, see here. Students must take all required Core courses for numerically graded credit, with the exception of PCEUT 599 (Grant Writing Course) which will be graded CR/NC. In addition, although the minimum passing grade in any given course is 1.7, to count towards the 18 numerically graded credit requirement, the PhD student must obtain a grade of 3.0 in Pharmaceutics core courses (i.e., those listed with the PCEUT prefix) and a grade of 2.7 or higher in non-Pharmaceutics Core courses.

The graduate school requires that students in a PhD program maintain a minimum cumulative GPA of 3.0 in all numerically graded courses. Failure to do so may lead to probation and other disciplinary action if not corrected.

All PhD students are expected to take graduate research credits (PCEUT 600 and 800).

PhD students should register for PCEUT 600 starting from autumn quarter of their first year, continuing in every quarter until they successfully pass the General Examination. After passing the general exam, they should register for PCEUT 800, quarterly, until they defend their dissertation and graduate from the program.

For PCEUT 600 or PCEUT 800, the credits that students can register will vary from 1 to 10, depending on their course load for the quarter and the time students need to spend on their dissertation research. To maintain a full-time status, students must register for a minimum of 10 credits total for all courses in in autumn, winter, and spring quarters, and a minimum 2 credits in summer quarter.

TEACHING EXPERIENCE

A teaching assistantship experience is not a required component of training for the Pharmaceutics PhD degree. However, depending on circumstances, a student may need to accept a teaching assistantship (TA) for the associated stipend and tuition funding. They may also wish to be a TA for the learning experience and to further their career (e.g., academic) ambitions.

Students are required to register for the TA conference on teaching and learning prior to taking on a TA assignment (typically before the start of autumn quarter in the first year in which they plan to teach); see here.

EXAMINATIONS AND PROGRESS EVALUATION

All graduate students must complete the Departmental course examinations to receive credit. The General Examination (see details below) is required by the Graduate School and the Department for advancement to PhD candidacy. A Final Examination (oral defense and submission of an approved dissertation) is required by the Graduate School and the Department for conferral of the PhD degree.

PROGRESSION OF STEPS IN RELATION TO THE DOCTORAL DEGREE

This section is intended to offer an outline of key procedural steps, besides coursework, that must be taken to receive a PhD degree. Additional details are found within the accompanying appendices.

SELECTION OF DOCTORAL SUPERVISOR (ADVISOR):

The relationship between a research supervisor and a graduate student is a very special one and requires significant deliberation. Agreement in the selection of a supervisor must be mutual and fully informed.

Students in the doctoral program should choose their research supervisor (major advisor) at the end of spring quarter of their first academic year. Students must submit their three ranked choices to the Department Chair and Graduate Program Director by the end of week-5, spring quarter. Although the Department Chair and Graduate Program Director will attempt to accommodate every student's first choice for an advisor, it is possible that this may not occur because of previous commitments by the faculty to other students in the program, laboratory space limitations and/or funding constraints. Once selected, the

advisor's primary role is to provide guidance, supervision, and evaluation of the student's study and research.

If a student cannot find an acceptable advisor after spring quarter, the student will be given the opportunity of an additional fourth rotation in summer quarter, assuming that a suitable lab can be identified. The inability to identify a laboratory that accepts a student for their dissertation research by the end of the fourth (summer) quarter will lead to dismissal from the Pharmaceutics doctoral program (see ***Deficiencies in Student Progress*** section).

DEVELOPMENT OF RESEARCH SKILLS AND IDENTIFICATION OF DISSERTATION TOPIC:

By autumn quarter of the second year, students must begin their dissertation research. It is critical that they quickly acquire technical skills and specialty expertise necessary for productive dissertation research and that they formulate, with input from their advisor, a credible dissertation plan.

APPOINTMENT OF DOCTORAL SUPERVISORY COMMITTEE:

The doctoral supervisory committee should be formed during a student's second year in the program. Composition of the supervisory committee is prescribed by the Graduate School, see here.

A detailed description for the Pharmaceutics program is as follows:

Nominations for doctoral supervisory committee appointment will be provided by the principal student advisor (supervisory committee chair), with input from the student and others, to the Graduate Program Director for approval or recommended change. With approval from the Graduate Program Director, the student may reach out to nominees with a request to serve on the supervisory committee. This may require one or more iterations until a full committee is constituted. The names of individuals that are acceptable to the Director and willing to serve will be forwarded to the Graduate School for final approval.

The supervisory committee consists of a minimum of four members, at least three of whom (including one Chair and the Graduate School Representative (GSR)) must be members of the UW Graduate Faculty. A majority of the members must be members of the UW Graduate Faculty. Aside from the GSR, members of the advisory committee must be productive scholars in the student's major field and/or subfields. The supervisory committee chair (the student's advisor) and at least one other committee member must be from the Pharmaceutics Department. Other members of the committee can come from the Pharmaceutics Department (regular or affiliate) or outside the Department or University, as

long as they meet the scholarly requirement and graduate faculty minimum requirements are met. Unlike the GSR, these committee members can be associated with the student's research through a funding mechanism, as long as that information is disclosed to the student and all other members of the supervisory committee.

The proposed GSR must be a productive scholar in their own research area and that may differ from the area of the student's dissertation project. The GSR cannot hold a faculty appointment in the Pharmaceutics Department. They cannot be related, married or have a significant personal relationship to the chair of the supervisory committee, the student or any other member of the Pharmaceutics Department. The GSR cannot be actively involved in the student's research or a grant that funds the student's research. In addition, the GSR cannot have published with the Chair or other members of the supervisory committee within the past 3 years. Other possible conflicts of interest will be considered on a case-by-case basis by the Graduate Program Director. The student is encouraged to consider faculty outside the School of Pharmacy for a GSR appointment.

The supervisory committee should meet at least once yearly (twice yearly is recommended) beginning with the second year in the program. An individual development plan (IDP) must be completed by the student at least annually in preparation for the annual reappointment process (see below). At least once a year when the committee meets with the student, a doctoral supervisory evaluation form must be completed and signed by the committee and the student. All these documents should be uploaded to the student profile database (see here). This information will be used to assess academic progress in the program. The student must notify the Graduate Program Advisor of any new members of their committee added or removed during their dissertation study.

Individual Development Plan (IDP):

Each student must prepare (or update) an IDP every year (Download form here, Student document and forms) and review this with their supervisory committee members. For first year doctoral students, the annual meeting will be with the Graduate Program Director and their chosen dissertation advisor. First year students will submit their IDP to the Graduate Program Director and chosen dissertation advisor for review and discussion. The completed and signed Doctoral Supervisory Committee form and the IDP form should be uploaded to the student database (see here) by May 25.

Scheduling and Format of General Examination:

Students admitted to the doctoral program should take their General Examination during autumn or winter quarter of their third academic year (the second year for MS transfer students, see below). By this time, they should have achieved competency in all the required Core courses and have a clear understanding of the direction that their dissertation project will take.

The general exam will consist of 2 parts (see ***Appendix A*** for further guidance): (a) submission of a written research proposal that includes specific aims that are related to but distinct from the student's dissertation plan and (b) oral PhD candidacy examination (see ***Appendix A***). Questions during the exam will focus primarily on pharmaceutical science principles presented in the core curriculum that are relevant to the dissertation research plan. However, a student can receive questioning on any Core curriculum topic, emphasizing the "general" nature of the exam. They should also expect to receive questions pertaining to the research plan, including questions about relevant background literature, significance of the specific aims, experimental design and technical feasibility.

The student supervisory committee will conduct the exam. Specific instructions about how to prepare for the examination can be found in ***Appendix A***. The student must submit their research proposal and IDP to the committee 4 weeks before scheduling the oral exam and receive approval from the committee to schedule that part of the general exam following a favorable evaluation of the written proposal. If written proposal revision is required, the student must make the necessary changes that have been communicated to them by the committee and submit a revised proposal for another round of review. Prior to the general examination, the student must update their academic record in the student profile database.

Students need to make sure that they have notified the Graduate Program Director and Graduate Program Advisor of the names of the members of their committee to be recorded in MyGrad (admin view) prior to the student scheduling the general exam in MyGrad (student view). Prior to scheduling the oral part of the general exam, the student must confirm with each member as to their availability. Then, no later than 3 weeks prior to the desired date of the oral exam, the student must request scheduling of the date in MyGrad (student view), which will then be approved by the Graduate School. All members of the committee will be automatically notified of the date and time of the oral exam.

A committee signature form for the general exam will be downloaded from the Graduate School website by the Graduate Program Advisor and will be printed and presented to the supervisory committee at the time of the oral exam. After that examination, a recommendation will be made, signed by the committee and returned to the Graduate Program Advisor. The Graduate Program Advisor then submits the signed warrant and records the exam outcome through the Graduate School website.

There are three possible outcomes of the initial General Exam:

1. The candidate is encouraged to proceed with studies leading to the doctoral degree;
2. The candidate must be reexamined after a further period of study. Requires resubmission of a request for General Examination to the Graduate School. The Dean of the Graduate School will approve at most two reexaminations, except under extraordinary circumstances;

3. The candidate is not recommended for further work towards the doctoral degree. The effect of this recommendation is termination of the student's enrollment in the doctoral program.

The student becomes a "candidate" for the PhD upon successfully passing the general exam. If they fail the initial exam and are offered the opportunity of reexamination, they may retake it during spring or summer quarters of the 3rd academic year, after completing the appropriate remediation (see ***Appendix A*** for additional details). Reexamination failure will result in dismissal from the doctoral program. However, a student who fails the General Exam requirement may be offered the opportunity of a transfer to the Master's program for a terminal Master's degree, if they can complete all requirements for the degree (see ***Master's Degree Handbook***).

Appointment of the dissertation reading committee:

The three-member doctoral dissertation reading committee is constituted from members of the student's supervisory committee. All three must be members of the UW Graduate faculty (see here). The student's principal advisor will serve as the chair of the reading committee. The second member must be a regular or adjunct member of the Pharmaceutics faculty. The third member of the reading committee can be any one of the other members of the supervisory committee that holds a Graduate School appointment. Nominations for appointment to the reading committee must receive prior approval by the Graduate Program Director before they are contacted. The reading committee should be constituted approximately six months prior to the expected defense date. The Graduate Program Advisor will complete online appointments through the MyGrad Program.

Scheduling of the Final Examination (dissertation defense):

The candidate should reach out to their dissertation committee to block out potential defense dates well in advance of scheduling the defense. To schedule the Final Exam (see Appendix A below), the candidate must fulfill the requirements of the Department and the Graduate School (see here). At least three weeks before their defense, the doctoral candidate must get an approval form signed by the reading committee, stating that the candidate is ready to schedule a defense. Specifically, the reading committee must have read a complete draft of the dissertation and approve scheduling of the defense; final changes to the dissertation can occur after the defense but must be incorporated prior to submission of the dissertation to the Graduate School by the last day of the academic quarter (2-week extensions can be requested, for a fee). The completed dissertation should be provided to all committee members prior to the defense. All committee members will be notified automatically by email of the date and time of the final exam. A room must be scheduled in advance. The student will also need to coordinate with the Graduate Program Assistant to reserve a room for the in-person defense of the dissertation.

There are three possible outcomes of the final examination:

1. The candidate passed the examination;
2. The candidate must be reexamined after a further period of study. Requires resubmission of a request for General Examination to the Graduate School;
3. The candidate is not recommended for further work towards the doctoral degree. The effect of this recommendation is termination of the student's enrollment in the doctoral program.

A successful dissertation defense must occur on or before the last day of an academic quarter to be conferred in that quarter. Otherwise, it will be conferred in the following quarter. The final dissertation document that has been approved by the supervisory reading committee should also be submitted at the same time. However, the Graduate School provides for a 2-week extension (with a fee to be paid for by the student) for submission of the final dissertation document. This extension does not apply to final exam.

PROGRESS EXPECTATIONS FOR PHARMACEUTICS MS TO PHD TRANSFER STUDENTS

Students who are accepted into the Pharmaceutics doctoral program after completing department requirements for the Master's degree will be considered to have completed one year of doctoral training upon entry into the doctoral program.

Credit Transfer:

Graduate School Policies state that "With approval of the graduate program, any number of credits applied to a UW Master's degree in the same program may be counted towards doctoral degree requirements. These credits may not be applied towards the dissertation requirement." The Pharmaceutics department has adopted this policy. However, the transfer student must complete all the didactic core course requirements of the doctoral degree with the minimum pass grade of 3.0, either as "transferred credits" from their MS training (all required courses should transfer if the minimum grade was achieved) or through completion of the courses while in the doctoral program (e.g., PCEUT 506 is not required for the MS degree).

Seminar Requirements:

The seminar attendance and presentation requirements of a student transferring from the Pharmaceutics MS program are the same as those of a student who enters the doctoral program from an outside institution (see ***Seminar and Literature Review Requirements*** above). However, seminar credits accrued while in the MS program can apply to the PhD program credit requirement.

Journal Club Requirements:

The Journal Club attendance and presentation requirements of a student transferring from the Pharmaceutics MS program to the PhD program are the same as those of a student who enters the doctoral program from an outside institution (see ***Seminar and Literature Review***

Requirements above). However, journal club credits accrued while in the MS program can apply to the PhD program credit requirement.

Lab Rotations:

A student who has transferred from the department MS program to its doctoral program can choose to join the lab of their MS advisor upon entry into the doctoral program, bypassing lab rotations. If a transfer student wants to consider other department labs for their dissertation research, either by choice or available funding, they must participate in the standard Year-01 lab rotations before final lab placement.

Research:

Although research conducted for the Master's degree cannot be part of the doctoral degree, research experience and technical skills gained in the MS program should transfer. Students transferring to the doctoral program from the Department's MS program will enroll in PCEUT 600 until a successful general exam and PCEUT 800 thereafter until a successful defense. Research credit requirements required by the Graduate School will apply.

General Exam:

As noted above, students who were admitted to the doctoral program after completion of MS degree from the Pharmaceutics department (i.e., MS to PhD transfer) will be considered to have completed one year of training for the PhD program and thus should schedule a General Exam during autumn or winter quarters of their second year in the doctoral program. Accordingly, the grant writing course (PCEUT 598) should be taken in winter and spring quarters of their first year in the doctoral program, to prepare them for the general exam.

DEFICIENCIES IN STUDENT PROGRESS

The Department is committed to helping students succeed academically and professionally, but must maintain standards for performance in the classroom and research lab. A student's standing in the program can be compromised by a failure to maintain good scholastic standing (GPA below 3.0), failure to pass required numerically-graded core courses with a minimum grade of 3.0, failure to make substantive research progress towards the degree, failure to pass the general exam or failure to pass the final (defense) exam.

COURSEWORK

With the Graduate School's Academic Performance and Progress as the basic framework, these steps will be followed should a student encounter difficulty with required course work:

VERBAL/EMAIL COMMUNICATION:

Course instructor(s) will communicate with a student when they see early signs that the student might be struggling with a course. Instructor(s) will communicate with the

identified student and explore possible ways to help the student to improve their performance in the class and meet academic expectations.

WARNING LETTER:

If a student receives a grade below the minimum requirement of the program for a core course, the student will receive a written letter from the Graduate Program Director, which serves as a warning letter, to communicate with the student about the situation involved, remediation plan (remediation exam or retake that course), and the timeline for remediation. The letter will also contain a message that failing to meet the expectations stated in the warning letter will lead to probation.

PROBATION:

If a student fails a second core course, the student will be put on probation and a letter issued. The letter will communicate with the student about the situation involved, remediation plan (remediation exam or retake that course), and the timeline for remediation. The letter will also contain a message that failing to meet the expectations stated in the probation letter will lead to final probation.

FINAL PROBATION:

If the student fails to meet expectations stated in the probation letter, or fails a third core course, the student will be put on final probation. The final probation letter will communicate with the student about the situation involved, steps to remove final probation, and the timeline for the process. The steps to remove the final probation could be to take an oral course exam with a faculty committee (possibly, course instructor and the Graduate Program Director or other faculty members).

SELECTION OF AN ADVISOR

It is essential that the student select a dissertation research advisor for progress to the doctoral degree. Lab rotations during autumn, winter and spring quarters of the first year are intended to facilitate the selection process. In the unusual case where a lab match cannot be made at the end of spring quarter, a fourth rotation during the summer quarter will be offered. Failure to select a dissertation research advisor and laboratory by the end of the fourth quarter in the program (generally summer quarter of Year 1), when dissertation research labs are available, will result in dismissal from the doctoral program. Should this occur, the Graduate Program Director and Department Chair will work the student to determine if completing requirements of a MS degree is realistic and desired. Transfer to a different PhD program on campus is another possibility that a student can pursue, but that may require a new admission application to the potential department.

GENERAL AND FINAL EXAMS

Failure to pass the General Exam (the first or multiple tries) or Final Exam (the first or second try) will result in a termination of a student's enrollment in the doctoral program.

RESEARCH PROGRESS

The Doctor of Philosophy degree is inherently a research-based degree. Hence, standing in the Pharmaceutics doctoral program will be evaluated based on student progress towards completion of their dissertation research specific aims. That research progress will be evaluated at least annually by their supervisory committee. An updated IDP will be communicated to the supervisory committee prior to each meeting with the student, as an aid to their evaluation of student research progress. During the supervisory meeting, the student will make an oral presentation of research progress, answer technical and general questions posed by the committee members related to that research effort and receive any specific or general advice that the committee has to offer on how to maintain or enhance progress. Deficiencies, if any, in student progress towards the degree that are identified by the committee will be communicated in a supervisory committee review report. The report will include a clear description of the expected level of performance, a timeline for the student to resolve the deficiency, and the consequence of failing to meet expectations. The same steps described above for deficient coursework (e.g., initial communication, warning, probation and final probation) will be followed when the Department responds to deficient research performance.

FINANCIAL ASSISTANCE

A PhD student can expect to receive financial support for a period of 5 years in the form of a Research Assistantship (RA) or a Teaching Assistantship (TA) that provide a stipend and either cover tuition or provide a tuition waiver. This period of support can be extended through petition if there is available funding for RA or TAship. The level of stipend support and other benefits for those students who are eligible are negotiated through union contract, see here. Students who pass their general exam and reach doctoral candidate status will receive a Department-initiated increase in their monthly stipend in the subsequent quarter, once the candidacy is confirmed by the Graduate School.

Dismissal from the doctoral program will lead to a termination of financial support. However, students who matriculated into the PhD program but who are directed into a terminal MS track may receive continued financial support for the remaining period of their last yearly RA or TA appointment. This support allows them to fulfill research requirements and draft a written Master's thesis.

RA AND TA REAPPOINTMENT PROCEDURE

An initial RA appointment is automatically granted upon matriculation into the PhD program and can be renewed on an annual basis, based on support availability from their research advisor or the Department. It is possible that a student may need to obtain a TA appointment for one or more quarters during the period of their doctoral training, should funding for an RA appointment lapse (e.g., loss of grant support to the primary advisor). For students pursuing a TA appointment, the Graduate Program Advisor will send out a list of courses along with their corresponding TA job descriptions to all students in May for the next academic year opportunity. If a student is interested in any course, they should consult with their advisor for approval. Once ready, they can submit an application through the Microsoft form provided in the email, ensuring it is completed by the deadline. Graduate students are welcome to apply for as many courses as they like. The faculty will review all applications and offer students TA appointments in the appropriate courses.

RA and TA reappointment decisions, as well as financial support and benefits that students can expect for the next academic year, will be communicated in writing to the students no later than June 1, and students will have two weeks to respond to the offer of reappointment, per the contract for Academic Student Employees (ASEs) found here.

APPENDICES

APPENDIX A– PREPARATION FOR THE GENERAL AND FINAL EXAMINATIONS

1. GENERAL EXAMINATION

The General Exam should be scheduled during autumn or winter quarter of the third academic year in the doctoral program (second year for MS transfer students). It consists of two parts – a written dissertation proposal and an oral examination. At least 4 members of the supervisory committee must be present at the General Exam (including the supervisory committee chair, the GSR and 2 other members of the committee).

INSTRUCTIONS AND EXPECTATIONS FOR THE WRITTEN PROPOSAL

The purpose of the written proposal is to train the student in scientific investigation, providing a framework by which the student can then be orally examined for their ability to lead their dissertation project and their knowledge of core pharmaceutics principles relevant to their dissertation project. The Specific Aims of the written proposal should fall within the general area of the planned dissertation project (e.g., targeted drug delivery), but be distinct from those aims laid out in a research grant previously produced by their advisor. They can be completely novel or a novel extension of the advisor's grant aims. A new course offering (currently PCEUT 598) will be provided in winter and spring quarters of the second year, or first year for MS transfer students, to facilitate writing the proposal. Specific requirements for the written proposal are described below. It should be submitted to the dissertation supervisory committee at least 4 weeks before scheduling of the oral exam can be considered. The written proposal must be accepted by the supervisory committee (may require revision) before the oral exam can be scheduled. The Graduate School will require an additional 3 weeks between the time that the general (oral) exam is requested on-line and when it can be scheduled.

The written proposal should be in a format similar to an NIH R01 grant application. It should consist of a short abstract (30 lines in length in total), a single Specific Aims page, and no more than a 12 page Research Plan (not including bibliography – use NIH formatting style); typically 6-12 pages. The document should use the following style guide: 11-point font (Arial), with 0.5-inch page margins and 1.0 line spacing. Additional details for each section follow:

ABSTRACT (30 lines):

The abstract should be maximum of 30 lines of text. The abstract should briefly describe the background, specific hypotheses and aims, preliminary results and methods used, and the experimental research plan.

SPECIFIC AIMS (1 page):

The specific aims should be 1 page in length, providing a brief background and clearly stated, detailed research hypotheses for the proposed research. The specific aims should be numbered and state the objectives of the experimental research conducted by the student. A brief description of how each specific aim will be addressed should be included.

RESEARCH STRATEGY (6-12 pages)

Research Strategy should be divided into the following sections and clearly labeled:

A. SIGNIFICANCE:

This part of the proposal should be approximately 3-4 pages long and provide an in-depth presentation of the critical background and significance for the proposed research project, research hypotheses, and the basic strategy for addressing the hypotheses. It is important to capture both the broad perspective of the field as well as the detailed evidence available to support the significance and novelty of the research hypotheses and experimental approach. The use of tables and figures to summarize data from literature is strongly encouraged.

B. PRELIMINARY DATA:

This section should be no more than 3 pages and can include results relevant to the written proposal aims and approach. It can include results from experiments that demonstrate feasibility and experience with key experimental techniques. Experimental methods should be described briefly to provide the necessary information required to understand the results. It is recommended that data be presented in graphical and tabulated formats. This section of the proposal may be subject to discussion and examination by the supervisory committee to assess approach pertaining to the design and conduct of these experiments. Figures should be legible when printed on standard 8.5 x 11” paper.

C. APPROACH:

This section should describe an experimental plan, organized around the specific aims. It should include sufficient detail for the committee to assess feasibility and the likelihood that the proposed approach, if completed, would generate results that adequately and rigorously test the research hypothesis(es). It should include a statistical analysis plan with power calculations, describe how rigor and reproducibility will be ensured, and anticipate any potential problems that could be encountered, as well as alternative approaches should the original research approach fail. It is important that experiments proposed under each specific aim be described in sufficient detail to allow the committee to assess feasibility and likelihood of success of the proposal.

REFERENCES:

References should be included at the end of the proposal and can be written in the NIH-required style. References list should include authors, title of the manuscript or reference,

journal of publication, volume, page numbers, and year of publication. Use of a reference manager (e.g. Endnote, Zotero) is highly recommended.

Sample applications with formatting requirements are available from the National Institutes of Health here.

The written proposal will be evaluated under the following criteria:

Factor 1: Importance of the Research (Significance and Innovation), factor score 1-9

Factor 2: Rigor and Feasibility (Approach), factor score 1-9

Factor 3: Expertise and Resources (Investigator and Environment), scored as acceptable or not

GRADUATE SCHOOL REQUIREMENTS

Prior to the General Examination:

- At least 18 credits of coursework at the 500 level and above must be completed prior to scheduling the general examination.
- At least 18 numerically graded credits of 400- and 500-level coursework, excluding 499, must be completed prior to scheduling the general examination.
- At least 60 credits must be completed before taking the general exam. Some of these credits may be taken the same quarter of the exam. For MS transfer students, PCEUT 700 credits accrued while in the MS program can be applied to this requirement.
- All members of the supervisory committee must approve that the student's background of study and preparation is sufficient to schedule the General Examination.

INSTRUCTIONS AND EXPECTATIONS FOR THE GENERAL EXAMINATION

The oral part of the general exam will last 2-3 hours. There will be no formal presentation from the student (i.e., no slides) during the exam.

The oral exam will cover pharmaceutical science principles presented in the Core curriculum that are relevant to the dissertation research plan. However, a student may also receive questioning on any Core curriculum topic, emphasizing the "general" nature of the exam. In addition, a student should expect to receive questions pertaining to the dissertation research proposal itself, including questions about experimental significance, study design and technical feasibility. Although the advisor is the chair of the supervisory committee, they do not play an active role during the examination and will only provide clarification or comment if asked by other members of the committee.

The Department encourages the committee to conduct the examination in a critical way that will ensure that the student is ready to be a PhD candidate and begin their dissertation research in earnest. If there is positive agreement, the committee will recommend an exam pass. However, if the committee feels that the student performance is below average, in any way, the committee can vote to fail the student with one of two recommendations. They could allow a reexamination after corrective action has been taken, which may consist of one or more of the following:

1. student remediates deficiencies in core or research knowledge areas via self-study;
2. student takes specific electives;
3. student meets with committee members more frequently than required.

Re-examination should occur no later than summer quarter of the third academic year.

The committee could also recommend termination from the program with the possibility of a terminal Master's degree.

SPECIAL ROLE OF THE GSR

The GSR represents the broad interests of the Graduate School. The GSR is a voting member of the committee and must attest to the validity of the examination, must indicate approval of the process by which the examination was conducted, must ensure that the student is treated in an unbiased manner, and must represent the Graduate School in ensuring university-wide standards of scholarly performance. Refer to the Graduate School Policy 4.2.2.4 here for details about the role of GSR.

In preparation for the general and final examination, students should see that the GSR receives all necessary materials (i.e., copies of the dissertation proposal, the dissertation, etc.) in a timely manner. Changes in the appointment of the GSR are made only under extenuating circumstances.

2. FINAL EXAMINATION AND SUBMISSION OF THE DISSERTATION

GENERAL

Preparation for the Final Exam should begin 6-9 months prior to an anticipated defense date. It begins with a consensus of the student advisory committee that the research that has been or will be completed is of sufficient scope and quality to constitute a defensible dissertation. A detailed timeline for completion of remaining experiments should be presented and approved by the committee. At that time the student should confirm the availability of their Reading Committee, create a timeline for writing the dissertation, and identify a suitable time window for scheduling a defense.

Reading Committee

The reading committee, consisting of at least three voting members of the supervisory committee, should be formed shortly after a successful general examination. One member of the reading committee must be the chair of the supervisory committee. See additional details on the composition of the committee in section-6 of Progression of Steps in Relation to the Doctoral Degree. The reading committee is appointed to read and approve the dissertation. When the reading committee has read an entire draft of the dissertation and the voting members of the doctoral supervisory committee agree that the candidate is prepared, the student can schedule the Final Examination.

Final Examination

The Final Examination consists of a defense of the dissertation. At least 4 members of the supervisory committee must be present at the Final Exam (including the supervisory committee chair, the GSR and 2 other members of the committee). By Department policy, the exam begins with a public oral presentation that lasts approximately 1 hour, with 45-min devoted to research topics selected from the written dissertation and 15-min for questions from the general audience. The exam continues with a closed session of the supervisory committee, where further questioning of the candidate will occur. Questions will generally pertain to content in the dissertation chapters, but can include forward-thinking questions about generalizability of the findings and potential impact on the field.

If a majority of the voting members of the supervisory committee members agree that their evaluation is positive, the doctoral supervisory committee recommends to the Dean of the Graduate School that the degree be awarded. If members of the doctoral supervisory committee do not agree with the majority recommendation concerning the examination, a minority recommendation should also be forwarded to the Dean.

Submission of Dissertation to Graduate School

The dissertation must conform to the requirements of the Graduate School as shown here. It will typically consist of a background chapter, three or more research chapters (often tied to the original specific dissertation aims and in essence published papers if the research has been published) and a summary chapter, as well as references, table of contents and other stand-alone information required by the Graduate School. Of the research chapters, the Department requires that prior to scheduling the defense, the student have at least one first author peer reviewed paper derived from original dissertation research (i.e., a chapter). In addition, the Department recommends that, before scheduling the defense, as many as possible of the additional research chapters be published, in press, or submitted for publication.

When other researchers have contributed to the dissertation research chapters, this should be appropriately acknowledged in the chapter. If a chapter is a joint first author published paper, the paper cannot be included “as is” in the dissertation. Instead, the student will need to re-write in their own words the portions of the said paper that were not written by them. The student should clearly delineate within the chapter their research contribution and that of

others, including the other first author. If some of these requirements cannot be met, the student must seek a written and signed waiver (spelling out the details) from their supervisory committee prior to scheduling the defense. Such a waiver is not guaranteed.

The student must be registered for PCEUT 800 credits during the academic quarter in which the completed dissertation is to be submitted. The dissertation must be submitted in accordance with the UW Graduate School deadlines (found here). Once the committee members are added to the student's profile, they will be able to approve the dissertation online.

APPENDIX B– DEPARTMENT POLICY ON TIME OFF AND ON-SITE WORK

Students are expected to perform their research and/or instructional duties according to the contractual agreements here governing their appointment as Academic Student Employees (ASEs), and the academic requirements to maintain satisfactory performance and progress towards their degree. (Please see details in the ***General Program Requirements*** section)

TIME OFF RELATED POLICIES FOR ACADEMIC STUDENT EMPLOYEES (ASEs)

Students should refer to the UW Student Employment website here for time off and leave policies.

At the Department level, it is important that student employees inform and coordinate with their supervisors/PIs ahead of time when asking for time off, whenever it is possible: Students should fill out the form of Request for Short-Term Leave or Overtime, get the signature from their supervisors/PIs, and send the signed form to the Graduate Program Advisor for documentation.

TIME OFF POLICIES FOR ACADEMIC STUDENT EMPLOYEES:

Visit here

SALARIED ACADEMIC STUDENT EMPLOYEE TIME OFF FAQs:

Visit here

ON-SITE ACADEMIC- AND WORK-RELATED POLICIES

In general, students are expected to work on-site for fulfillment of their RA/TA duties and completion of required and elective courses and dissertation research. Those who wish to perform their ASE duties offsite will need to obtain approval by the responsible faculty member before the initiation of offsite work. For academic research activities, the responsible faculty member is the student's primary graduate (PhD or MS) advisor; and for instructional duties, the course master/instructor. Suspension of this policy may occur, as happened during the recent COVID-19 pandemic.

The agreement between the student and the responsible faculty member should specify the frequency/duration and the nature of the offsite work (e.g., hybrid, occasional or 100% remote). Such agreement should be documented and reviewed (i.e., to be extended, modified or terminated) at least on a quarterly basis and any impact (potential or real) it may have on the student's academic performance and progression should be noted in the student's Individual Development Plan.

If there is disagreement between the student and the responsible faculty member on the appropriateness, or the specifics, of the offsite work under consideration, the issue can be presented to the Graduate Program committee, with consultation from the student's supervisory committee, to achieve resolution. Any unresolved issue or appeal will be reviewed by the Department Chair or designate, whose decision on this matter shall be deemed final.

It is the policy and practice of the UW to create inclusive and accessible learning environments consistent with federal and state law. If the student has already established accommodations with Disability Resources for Students (DRS), then a discussion between the student and the responsible faculty member should occur to determine how they will be implemented as it relates to research and/or instructional duties.

APPENDIX C– SCHOLARSHIPS AND AWARDS

Graduate students in the doctoral program are eligible for multiple scholarship and travel awards offered by the Pharmaceutics Department, the School of Pharmacy, the UW Graduate School and Health Science administration, NIH, and various private Foundations. All are merit-based and require an application and review process. Receiving an award is a recognition of exceptional merit. As such, it should be received with pride and can be cited in a curriculum vitae or resume.

DEPARTMENT AWARDS

The Department of Pharmaceutics offers awards to its graduate students that are intended to recognize outstanding scholarly activity during the time that they are enrolled in our programs. The list of available awards, timelines, and eligibility criteria are detailed at this link here.

SCHOOL AWARDS

Click here for more information.

NIH T32 Pharmacological Sciences Training Program: Click here for more information.

UW HEALTH SCIENCE AWARDS

Magnuson Scholarship: Click here for more information.

ITHS TL1 Translational Research Training Fellowship: Click here for more information.

Other awards (i.e. training grants) may be available and should be identified in consultation with dissertation advisor.

UNIVERSITY AWARDS

Much of the descriptions presented below are abstracted from the associated websites:

UW ARCS Fellowship: Click here for more information; this is only available to students applying to the PhD program.

Graduate Student Conference Presentation Award: Click here for more information. The application is submitted by the Graduate Program Advisor or Director on behalf of the student through MyGrad (admin view). Students must contact the Graduate Program Director to initiate the application process. Students must initiate this request process prior to conference presentation. Awards are not provided retroactively and eligibility criteria apply.

Graduate and Professional Student Senate Travel Grants: Click here for more information.

Graduate School List of Fellowships: Click here for more information.

EXTRAMURAL AWARDS

Graduate students in the Pharmaceutics Department may apply for scholarships and awards that are offered by foundations and other organizations outside of the UW (i.e., extramural) system. The possibilities are numerous and should be searched on-line. A few that are directed specifically to graduate studies in a School of Pharmacy or to STEM sciences are listed below. Note that some organizations specifically target support of individuals from minority or disadvantaged backgrounds. Below is a non-exhaustive list of common pre-doctoral fellowship options available to Pharmaceutics Department graduate students; additional opportunities may be identified in consultation with the dissertation advisor or Graduate Program Director:

NIH Predoctoral Individual NRSA F31 Fellowship: Click here for more information.

AFPE Fellowship: Click here for more information.

PhRMA Foundation Fellowship: Click here for more information.

American Dissertation Fellowship: Click here for more information.

Hertz Foundation Fellowship (1st year students only): Click here for more information.

APPENDIX D– STUDENT GRIEVANCE PROCEDURES

The Department of Pharmaceutics follows the School of Pharmacy and University of Washington's Scholastic Regulations, Student Governance and Policies (see UW Policy, Student Governance and Policies, Chapter 110 here) when addressing a student appeal of an exam grade, course grade or other academic evaluations (e.g., general or final exam).

APPEAL OF AN EXAM OR COURSE GRADE

A student who believes that an instructor erred in the assignment of a grade, or who believes a grade recording error or omission has occurred, should follow these steps to resolve the matter:

1. The student should first discuss the matter with the instructor before the end of the academic quarter, or the following quarter if it is a final exam.
2. A student who is not satisfied with the instructor's response may submit, no later than 10 class days after their discussion with the instructor, a written appeal to the Department Chair with a copy of the appeal to the instructor. This time may be extended by the Department Chair in exceptional circumstances, such as the situation in which the student did not learn of the appeals process deadlines in time. If the Department Chair has a conflict of interest, the appeal will be heard by a Department Chair's designee pre-determined from among the Department's faculty.
3. Within 10 calendar days of receipt of the appeal, the Department Chair will consult with the instructor to determine whether the evaluation of the student's performance was fair and reasonable or whether the instructor's conduct in assigning the grade was arbitrary or capricious.
4. If the Department Chair determines that the instructor's evaluation of the student's performance was not arbitrary or capricious, the Chair notifies the student that the appeal is denied and that the assigned grade is final.
5. If the Department Chair believes the instructor's conduct in assigning the grade was arbitrary or capricious, the Department Chair will request that the instructor revise the grade.
6. If the instructor declines to revise the grade, the Department Chair, with the approval of the voting members of their faculty, shall appoint an appropriate member, or members, of the faculty of the Department to evaluate the student's performance and assign a grade. The Department Chair will inform the Dean and Provost of this action. The Department's decision will be final.
7. The Dean will refer the matter to the Associate Dean for Graduate Education who will review the Department Chair's decision to ensure that the appeal process was followed correctly.

8. Once a student submits a written appeal, this document and all subsequent actions on this appeal shall be recorded in written form in a school file residing with the Associate Dean for Graduate Education.

UNFAIR TREATMENT

In the event of professional or personal conflict, students can seek additional guidance from their advisor, supervisory committee, and Department Chair, as well as the University Ombud, see here. The UW Allies Program is another resource if issues cannot be resolved through these already listed channels, see here. Students who feel that they have been subjected to unfair treatment in the administration of Departmental academic policies (including those described in this document) may seek resolution on the Academic Grievance Procedure outlined in Policy 3.8 from the Graduate School, see here.

Initiation of an informal conciliation process or formal complaint must occur within three months of the date of the incident. The student is referred to Policy 3.8 for further details. A brief description is provided below.

INFORMAL CONCILIATION:

Students who wish to challenge a course grade should first attempt to resolve the issue informally with the faculty or staff most closely involved. If they are not satisfied with the outcome, they can bring the issue to the Department Chair for informal conciliation, who will facilitate further discussion between the implicated faculty or staff person and student. If the grievance is still not resolved, they may request that the Dean of the School of Pharmacy be engaged for additional informal conciliation. If they remain dissatisfied, they may request assistance from the Graduate School for another round of informal conciliation, typically led by an Associate Dean. They may also involve the Office of the Ombud.

FORMAL COMPLAINT:

If a student is not satisfied with the outcome of informal conciliation, they may file a formal complaint within 10 days of the conclusion of the attempted informal conciliation process. Formal complaints will be handled, as described in Policy 3.8 from the Graduate School. At a minimum, it will involve formation by the Graduate School of an Academic Grievance Committee, comprised of both UW graduate students and faculty outside of the Pharmaceutics Department.

APPEAL OF AN UNFAVORABLE GENERAL OR FINAL EXAM DECISION

A student who believes that their supervisory committee erred in assigning an unfavorable outcome to a General or Final examination may seek resolution through the Academic Grievance Procedure outlined in Policy 3.8 from the Graduate School, see here.

APPENDIX E- STUDENT PROGRESS CHECKLIST

1st year	Done	To Do
Fall Quarter		
Core prerequisite satisfied		
Refer to the handbook for required and recommended courses		
Residence maintained through course enrollment (10 credits per quarter)		
Complete and pass required training such as Chemical Safety, Biological Safety training, and if needed Radiation Safety, Human Subjects (CITI course strongly recommended) and Animal Use Regulations training.		
1st Lab Rotation		
Winter Quarter		
Core prerequisite satisfied		
Refer to the handbook for required and recommended courses		
Residence maintained through courses (10 credits per quarter)		
2nd Lab Rotation		
S**pring Quarter**		
Core prerequisite satisfaction		
Refer the handbook for required and recommended courses		
Residence maintained through courses (10 credits per quarter)		
3rd Lab Rotation		
Submit three ranked choices of advisor to the Graduate Program Director and the Department Chair		
Submit IDP by May 15th to the Graduate Program Advisor (GPA) and upload to FileMaker		
Review and complete FileMaker profile		
Summer Quarter		
Residence maintained through courses (2 credits per quarter)		
Gain experience in the lab of doctoral advisor/ explore and decide on possible main research project. Start collection of data.		
Complete UW TA training here if planning to TA the following academic year		
2nd year (Fall-Summer)	**Yes**	**No**
Maintain EH & S and other training, as needed		
Complete Biomedical Research Integrity training here (offered autumn and spring quarters)		
Residence maintained through research (10 credits per quarter; 2 credits for summer)		

Continuing dissertation research		
Refer the handbook for required and recommended courses		
Arrange Supervisory committee meeting no later than May 15th (at least one earlier meeting recommended)		
Submit IDP by May 15th to the GPA and upload to FileMaker		
Appointment of Doctoral Supervisory Committee. This must be done at least one quarter prior to taking the General Exam.		
Take PCEUT 598 in Wtr and Spr quarters to facilitate completion of the written part of the General Exam		
Review and complete FileMaker profile		
3rd year (Fall-Summer)	**Yes**	**No**
Maintain EH & S and other training, as needed		
Residence maintained through research (10 credits per quarter; 2 credits for summer)		
Refer the handbook for required and recommended courses		
Take General Examination in Aut or Wtr quarters of year 3, see here		
Arrange supervisory committee meeting by May 15th		
Submit IDP by May 15th to the GPA and upload to FileMaker		
After a successful general exam, begin registering for PCEUT 800 credits instead of PCEUT 600		
Review and complete FileMaker profile		
4th Year (Fall-Summer)	**Yes**	**No**
Maintain EH & S and other training, as needed		
Residence maintained through research (10 credits per quarter; 2 credits for summer)		
Refer the handbook for required and recommended courses		
Appointment of dissertation Reading Committee		
Arrange supervisory committee meeting by May 15th		
Submit IDP by May 15th to the GPA and upload to FileMaker		
Review and complete FileMaker profile		
5th Year (Fall-defense)	**Yes**	**No**
Maintain EH&S and other training, as needed		
Residence maintained through research (10 credits per quarter; 2 credits for summer)		
Refer the handbook for required and recommended courses		
Confirm appointment of dissertation Reading Committee. This must be done no later than the beginning of the quarter you plan to defend your dissertation, see here		
Submit dissertation to your reading committee		

Get supervisory committee approval to schedule defense and submit approval to GPA		
Schedule your defense in MyGrad		
Revise and submit the final copy of your dissertation to Graduate School		

APPENDIX F– USEFUL LINKS FOR DEPARTMENT FORMS

Individual Development Plan:

See here

Doctoral Supervisory Committee Meeting Form:

See here

General Exam Procedures Checklist:

See here

Approval to Schedule PhD Defense Form:

See here

Graduation Instructions:

See here

PCEUT Pre-Travel Request Form:

See here

PCEUT Travel Reimbursement Request Form:

See here

APPENDIX G– SELECTED LIST OF OUTSIDE ELECTIVES SUITABLE FOR PHARMACEUTICS DOCTORAL TRAINEES

The following list of UW courses taught outside of the Pharmaceutics Department have been selected by Pharmaceutics faculty as generally suitable for elective doctoral instruction. The list is not exhaustive and a student can consider any other 500-level course taught at the University of Washington that might suit their IDP (approval by the supervisory committee is required).

Courses from Other Biological Science Programs:

BIOEN 574: Immunoengineering (3 cr); Winter

BIOEN 591: Controlled Release Systems (3 cr); Winter

BIOST 524: Design of Medical Studies (3 cr); Spring

BIOST 565: Statistical Evaluation of Biomarkers (3 cr); Winter

BIOST 509 Introduction to R for Data Analysis in the Health Sciences (2 cr); Autumn

GH 566: Biochemistry and Genetics of Pathogens and Their Hosts (4 cr); Autumn

MCB 522: Development I: The Developmental Basis of Human Disease (3 cr); Autumn, Odd years

MCB 532: Human Pathogenic Viruses (3 cr); Autumn

MEDCH 527: Advanced Drug Metabolism (2 cr); Winter

MEDCH 529: Advanced Medicinal Chemistry (4 cr); Autumn

NEURO 559: Neurobiology of Disease (Offered: jointly with NEURL 559/P BIO 559) (3 cr); Spring

PATH 550: Mechanisms of Disease (3 cr); Autumn

PCEUT 501: Advanced Pharmacokinetics I (3 cr); Autumn, Even years

PCEUT 503: Drug Transport and Delivery (3 cr); Spring, Odd years

PCEUT 506: Concepts in Pharmacokinetics (3 cr); Spring (Required Course for PhD Students)

PCEUT: 534 Principles of Precision Medicine (2 cr); Spring

PCEUT 551: Introduction to Drug Discovery and Development (2 cr); Winter

PHARM 501: Alternative and Complementary Medicines (2 cr); Autumn and Winter

PHARM 581: Global Health Pharmacy: Medicines, Practice, and Policy (Offered: jointly with GH 543) (2 cr); Winter

PHCOL 502 Signal Transduction from the Cell Membrane to the Nucleus (2 cr); Autumn

PHCOL 503: Autonomic/Cardiovascular Pharmacology (2 cr); Winter

PHCOL 504: Neuropharmacology (2 cr); Winter

PHCOL 505: Endocrine Pharmacology (2 cr); Spring

PHCOL 506: Immunopharmacology and Chemotherapeutics (2 cr); Spring

PHG 513: Basic Concepts in Pharmacogenetics and Toxicogenomics (3 cr); Winter

Courses from the Certificate in Clinical Trials Program:

PHRMRA 524: Introduction to Clinical Trials (3 cr); Autumn

PHRMRA 525: Implementation & Conduct of Clinical Trials (3 cr); Winter

PHRMRA 526: Project Management & the Business of Clinical Trials (3 cr); Spring

Courses from the Certificate in Biomedical Regulatory Affairs Program:

PHARM 516: Introduction to Biomedical Regulatory Affairs (3 cr); Autumn

PHARM 517: Product Development & Manufacturing Systems (3 cr); Winter

PHARM 518: Product Testing, Evaluation & Post-Market Issues (3 cr); Spring