GRADUATE PROGRAM IN PHARMACEUTICAL SCIENCES
UNIVERSITY OF KENTUCKY

GRADUATE STUDENT HANDBOOK

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University of Kentucky Graduate School Bulletin

This handbook is meant to assist students by offering a general framework. While it is consistent with the Graduate School requirements and the doctoral programs it serves, it is not comprehensive. Students should consult the University of Kentucky Graduate School Bulletin for the formal regulations governing all doctoral programs at UK.
http://bulletin.uky.edu/index.php

Important Resources

University of Kentucky Graduate School
https://gradschool.uky.edu/

Office for Institutional Diversity
https://www.uky.edu/inclusiveexcellence/

Disability Resource Center
https://www.uky.edu/DisabilityResourceCenter/

University of Kentucky Academic Calendar
https://www.uky.edu/registrar/content/academic-calendar

FERPA & Privacy
https://registrar.uky.edu/ferpa

Enrollment Verifications & Letters of Good Standing
https://registrar.uky.edu/verifications

Academic Ombud Services
https://www.uky.edu/ombud/

Center for Support and Intervention
https://www.uky.edu/concern/

Program Description

The Graduate Program in Pharmaceutical Sciences is a multidisciplinary program designed to prepare motivated individuals for academic, industrial, or government careers in pharmaceutical and biomedical research. It is a graduate training program that encompasses research in areas of pharmaceutical sciences that range from identifying fundamental mechanisms of human disease, to the design, development and formulation of new medicines, to understanding the impact of drug policies on health care systems. Within this broad scientific framework, students develop individually tailored programs of study to meet their particular research interests and career objectives.

Intense, laboratory-based and data and analysis driven research, using state-of-the-art techniques and instruments, forms the basis of a student's PhD dissertation or Master's thesis. Each student develops the skills and judgment to make a unique, scholarly contribution to our understanding of drugs and how these

compounds impact human health and disease. These breakthroughs are published in top pharmaceutical journals and presented at national and international meetings. Students receive the training that will enable them to become independent scientists who can conduct front-line research in pharmaceutical sciences in industrial, academic or governmental settings.

The overall goal of the graduate program is to provide the graduate student with a comprehensive, structured, yet flexible educational experience comprised of both coursework and independent, highly creative, research. This goal is supported by additional components, such as research rotations for first-year students and a program-wide seminar series. The intent is to provide both depth and breadth of expertise in the Pharmaceutical Sciences along with developing the creative and critical approach to research that characterizes a PhD-level or Master's level scientist.

All students in the program will carry out hypothesis-driven laboratory investigations as the basis of a written dissertation or thesis for PharmD/MS students. The quality of the dissertation will be judged by the student's advisory committee, in accord with the requirements and regulations set forth by the Graduate School. It is expected that the dissertation or thesis work will be recognized as high quality by also being published in national and international scientific journals and presented in forums at national and international scientific meetings.

Our faculty have established a set of Guiding Principles that direct the evolution of our program to meet these criteria. These can be found at https://pharmacy.uky.edu/apply/phd-program .

A Brief History of the Program

The Pharmaceutical Sciences Graduate Program continues the tradition of graduate education established by the University of Kentucky College of Pharmacy in 1967. The proposal for a graduate program in Pharmaceutical Sciences, with areas of concentration in Pharmaceutics and Pharmaceutical Chemistry, was approved by the Graduate Faculty on November 18, 1968 and by the Board of Trustees of the University of Kentucky on February 18, 1969. Dean Joseph Swintosky and Dr. Harry Kostenbauder were instrumental in establishing the program and guiding the program for the first 20 years. The first class of graduate students consisted of 7 students and the first candidate (Dr. William Crouthamel) graduated in 1970.

As the graduate faculty grew, so did the size and the breadth of the graduate program. In the '70s and early '80s, Drs. George Digenis, Anwar Hussain, Patrick DeLuca and Louis Diamond played key roles in expanding the areas of research to include drug delivery, medicinal chemistry and pharmacology. In the mid to late '80s, an increased emphasis on the biological aspects of pharmaceutical sciences including molecular biology and biotechnology was established under the leadership of Drs. Mark Gillespie and Myron Jacobson. The Clinical Pharmaceutical Science program also came into being at this time with Dr. Robert Blouin guiding the early formation of this training track.

The first student was admitted into the Pharmaceutical Outcomes and Policy track in 2009. The first graduate was in 2012.

The PharmD/MS dual degree program was approved by the University Senate on May 5, 2014. This dual degree combination is highly desirable for persons seeking careers in state and local health departments,

the pharmaceutical industry, managed care organizations, and academic healthcare systems and colleges. The first group of 6 students graduated with both a PharmD and MS on May 6, 2016.

Training Options

Doctoral degrees in Pharmaceutical Sciences at the College of Pharmacy are obtained through one of five Tracks. The Traditional Pharmaceutical Science Tracks provide training that is based on advanced coursework in contemporary basic pharmaceutical sciences plus independent laboratory or computational research under the direction of a faculty mentor. In the Traditional Pharmaceutical Science Tracks the many research opportunities available are organized into three broad disciplinary areas: Medicinal, Bioorganic and Computational Chemistry, Pharmaceutical Chemistry and Engineering, and Pharmacology and Experimental Therapeutics. The Clinical and Experimental Therapeutics Track requires a prior degree in an area of professional healthcare, and focuses on training in translational research at the interface between basic and clinical studies. The Pharmaceutical Outcomes and Policy Track trains scientists to conduct research on the safe, efficient, and effective use of pharmaceuticals to improve the health of individuals and populations.

Traditional Pharmaceutical Science Tracks

The goal of the Pharmaceutical Science Tracks is to develop scientists who possess a blend of contemporary basic science skills and an understanding of their role in the development of new drugs. Training begins with advanced coursework that is tailored to give each student a solid foundation across the breadth of pharmaceutical sciences, yet is individualized based on the student's academic background, and the research project that will be the basis for their dissertation. The many research opportunities available are organized into three broad disciplinary areas to form the following tracks:

Medicinal, Bioorganic and Computational Chemistry Track

The Medicinal, Bioorganic and Computational Chemistry Track is focused on small molecules as well as new protein and nucleic acid based therapies, and natural product drug discovery platforms and seeks to expand is expertise with interests in synthetic/biosynthetic approaches for drug discovery, development of novel computational tools for drug design, and evolution of biologics for specific therapies or drug delivery.

Pharmaceutical Chemistry and Engineering Track

The Pharmaceutical Chemistry and Engineering Track focuses on drug formulation, development and delivery. Areas of emphasis include the application of physical, physical organic, and analytical chemistry to solve pharmaceutical problems; the design, development, and optimization of dosage forms for small and large molecules; and fundamental research into materials science and nanotechnology to advance drug delivery systems design. Collaborations with faculty in the UK College of Engineering provide additional opportunities for a combined pharmaceutical and engineering research program. In addition, faculty participate in preclinical and/or clinical projects through collaborative relationships within the College of Pharmacy and with investigators across the UK Medical Center Complex.

Pharmacology and Experimental Therapeutics Track

The Pharmacology and Experimental Therapeutics Track draws upon campus-wide strengths in neurobiology, cardiovascular disease, oncology and infectious diseases. Strong collaborations exist with the Sanders-Brown Center on Aging, Center on Drug and Alcohol Research, and the Markey Cancer Center,

which was first designated by the National Cancer Institute (NCI) in 2013. Division faculty are skilled in pharmacokinetic and pharmacodynamics, systems biology, neurochemistry and neurophysiology. Translational research programs bridging preclinical and/or clinical projects through collaborative relationships within the College of Pharmacy and with investigators across the UK Medical Center Complex also exist.

Clinical and Experimental Therapeutics Track (CET)
The completion of a Pharm.D., D.D.S., D.V.M. or other professional health degree is required for admission into this training Track. The focus of the CET Track is translational research, and involves training in how to conduct studies that occur at the interface of basic and clinical research. Since all students admitted to the program will already have a clinical/health profession degree, the emphasis of the program will be training in the basic sciences. This breadth and balance of skills will improve the graduate's ability to successfully compete for extramural funding and job opportunities. There are required clinical components to assure competency in the foundations, principle and processes of clinical research. The keystone of the training is the conduct of an integrated, combined laboratory-based and clinical dissertation.

Pharmaceutical Outcomes and Policy Track (POP)
The goal of the Pharmaceutical Outcomes and Policy Track is to train scientists to conduct research on the safe, efficient, and effective use of pharmaceuticals to improve the health of individuals and populations. The emphasis of the program will be on building a core set of analytical skills and tools to evaluate the impact of clinical interventions and clinical outcomes. Students complete core classes in five areas: pharmacoepidemiology, pharmacoeconomics, statistics, biomedical informatics, and pharmaceutical policy. This breadth and balance of skills will improve the graduate's ability to successfully compete for extramural funding and contribute to the scholarly literature on pharmaceutical outcomes. Most students within the Pharmaceutical Outcomes & Policy Track have a prior professional health related degree (Pharm.D., B.S. Pharm.) Exceptional students without a pharmacy related degree may be admitted with the consent of the admissions committee. Students without appropriate prerequisite training may be required to complete additional course work.

Doctoral Program Requirements
General Requirements
Although requirements vary from track to track, the general requirements for graduation are as follows:
1. The graduate student will participate in the educational activities of the Graduate Program as a whole and of the specific Track of which they are a member during the entire period the student is in residence in the program.
2. Students are expected to take the recommended core courses of the Track in which they participate. The recommended core courses cover material that is deemed essential to the scientific discipline represented by the Track. In addition, the Dissertation Advisory Committee of each student will establish a specific set of courses pertinent to the educational and career goals of the student within the discipline, the scientific goals of the dissertation work and the requirements of the Graduate Program.
3. Students are expected to attend and present seminars as outlined below. Failure to attend seminars will result in denial of funding awards. Students will receive emails regarding the seminar attendance guidelines to be eligible for travel and potentially additional funding awards.

4. A major goal for a student during the first year in the program is to identify a laboratory or project and mentor for their dissertation research. This is accomplished by participation in at least 2 (3 recommended) rotations (see below for more details). By the end of June of the first year, *failure of the student to identify a mentor with whom to conduct their dissertation research will result in dismissal of the student from the program.* Extensions of this deadline may be granted at the discretion of the DGS.
5. Students must take and pass a Qualifying Examination, consisting of 3 parts, which are detailed below. There are specific requirements for each Track.
6. Students must prepare and orally defend a PhD dissertation. The student's Dissertation Advisory Committee will monitor and help guide the development of the dissertation and administer the final examination (defense).

Advising

Director of Graduate Studies (DGS)

The DGS serves as adviser to incoming graduate students until the Advisory Committee is appointed. The Track Coordinators and the Graduate Program Operations Director also assist the DGS in advising students.

Graduate Program Committee (GPC)

The Graduate Program Committee includes representatives from each of the five tracks. Each Track Representative and the Graduate Program Operations Director are to assist the DGS in advising entering (first year) students in selecting appropriate initial coursework, prior to the selection of a major professor. Each Track Representative will also assist the DGS to help the first-year students identify research rotations that will enable the student to select a dissertation project and major professor. After the student has chosen a major professor, advisement responsibilities are transferred to the selected major professor and the student's individual Dissertation Advisory Committee.

Research Rotations

Incoming students are generally not assigned to a laboratory, project or mentor. The purpose of rotations is to allow the student to gain an appreciation of the research areas and techniques used by faculty and laboratories and the mentorship style of the faculty. Prior to the beginning of the semester, students are provided with rotation windows and the availability of faculty members for each window. Students must complete rotations with at least two different faculty. If a particular faculty member is of interest, there is flexibility to complete two rotation windows (out of three total rotations) in that laboratory. While determining a research project and obtaining funding are first priorities for student rotations, a rotation can also be an opportunity for a student to learn a complimentary skill to the research that they plan to conduct. These factors including the matching process described below should all be taken into consideration when determining rotations. Finding a good match requires the student to be proactive in seeking a mentor, and in performing the rotation project with sufficient interest and skill to encourage the mentor to accept the student. The student needs to have a direct conversation with a possible mentor about opportunities for doing a dissertation project with the mentor. The student will submit to the DGS and each rotation mentor a 1-page summary of each rotation. This submission will include: the overall objectives of the research conducted, the student's participation in that research and a summary of the results and their interpretation. The rotation mentor will submit to the DGS an independent evaluation of

the student's performance during the rotation, identifying the student's strengths and weaknesses (Research Rotation Performance Evaluation Form).

A student may be dismissed from the program if they fail to identify a mentor to pay their stipend by the end of June of the first year of study.

Procedure for Matching Students and Mentors

Each year, graduate program and department leadership provide oversight for decision-making to match new doctoral students with their permanent faculty advisors. This process will make the choice a 3-way decision with input from the trainee, advisor, and department chair. This will provide a mechanism by which the department chairs can ensure faculty funding is adequate, equity across faculty is maintained, and department and faculty accountability is strengthened.

By the end of January, first-year PhD students will provide a rank list of advisors they wish to join for the remainder of their graduate training. Faculty advisors will likewise provide a rank list of trainees that they wish to mentor. Department chairs will hold a meeting with all faculty seeking students in February to make decisions. All efforts will be made to place trainees and mentors with their first or second choices.

Decisions will be communicated to the students immediately thereafter. A student or faculty member may petition the DGS and applicable Department Chair for additional time if there is a compelling reason the student is unable to complete rotations and/or make selection according to this timeline.

Dissertation Advisory Committee

A student's Dissertation Advisory Committee should normally be formed within 3 months of selecting a mentor and no later than August 1, prior to the start of the second year of graduate school. After the initial meeting, annual meetings should take place by March 31 of the next year, and each subsequent year. The Dissertation Major Professor and the student propose the composition of the Advisory Committee; however, the DGS must approve the Advisory Committee members. The Graduate School officially appoints the Advisory Committee. The Advisory Committee must be appointed at least one year prior to the Qualifying Examination.

The Major Professor and the Advisory Committee guide each student's program throughout their graduate career. Their purpose is to give continuity of direction and counsel and to provide intellectual stimulation from the earliest days of residency through the completion of the doctorate. The Advisory Committee has a core of four members. This core consists of the Major Professor as mentor and two other members from the graduate faculty of the Pharmaceutical Sciences Program. An additional member must be from outside the academic program. **The mentor and two other committee members must be Full Members of the Pharmaceutical Sciences Graduate Faculty** (http://gradschool.uky.edu/graduate-faculty). If the mentor is currently an Associate Member, then a co-mentor who is a Full Member must be appointed. At the time of the dissertation defense, the Graduate School will appoint an outside examiner as a fifth member. For details, see the section on Final Examination (Dissertation Defense), or consult the Graduate Bulletin, (http://bulletin.uky.edu/index.php).

For students in the Clinical and Experimental Therapeutics Track, in addition to the rules above, the mentor must be a primary member of the CET graduate faculty (https://pharmacy.uky.edu/node/305). Graduate faculty in the PPS and PS departments are eligible for this appointment, provided they are

committed to the goals, and can meet the requirements and expectations for clinical training of the Track. The procedure for requesting CET Faculty Membership is available from the Director for Graduate Studies or CET Track Coordinator.

The core of the Advisory Committee must be kept at its full complement throughout the graduate career of the individual student. In the event of a vacancy on the Committee (occasioned by resignation, faculty leave, or inability to serve), an appropriate replacement must be made prior to the making of any committee decision.

Advisory Committee Member and Student Responsibilities

The doctoral program consists of a combination of courses, seminars, individual study, and research/scholarship that must meet or exceed the minimum requirements of program. The primary responsibilities of the Ph.D. Advisory Committee is 1) to guide the broad scholarly development of the student and 2) to assess the student's dissertation research and academic progress toward the degree.

The committee's purpose is also to ensure that university and program standards and guidelines are adhered to by spreading this responsibility to multiple faculty members. Advisory Committee members are appointed based on their skills and expertise with these goals in mind. Active involvement from all committee members provides support for the student as well as the mentor, preventing the dissertation chair from shouldering the entire responsibility. Guidance and advice from multiple sources are invaluable to the optimal development of the trainee. Additionally, while members should have expertise in the subject area, a diversity of perspectives should also be represented. Each committee member should serve as a resource for the student independent of the chair/advisor and provide valuable insight and advice to the student on their project.

The Advisory Committee shall:
1. Guide the educational program for each individual student, ensuring that coursework meets the requirements of the program and is tailored to the trainees' specific needs with respect to their research project.
2. Provide an assessment of the student's progress on an annual basis according to the established rubrics. This assessment includes a review of any prior annual assessments, addresses the quality of the student's research and progress toward their degree, provides recommendations to improve the student's research, summarizes any concerns identified, and recommends actions to address the concerns.
3. Assess the student's professional development and provide recommendations as appropriate and that reflect, to the extent possible, the student's career goals.
4. Administer the Qualifying Examination and Dissertation Defense, assessing the student's performance on each.
5. Provide guidance to both the student and the student's dissertation advisor.

Advisory Committee Chair Responsibilities
1. Provide timely and thorough guidance on all aspects of the student's graduate study, including coursework, the development and execution of a research project, the development and publication of manuscripts, and the ethical conduct of research.
2. Recommend appropriate members to serve on the advisory committee, ensuring breadth and depth of expertise is provided and diversity of perspective is achieved.

3. Advise the student on qualifying exam, proposal, and final defense rules, timelines, and protocols.
4. Ensure that the student's research project is sound and the dissertation proposal is well-written, well-researched, and adheres to the guidelines set forth by the university.
5. Be accessible to the student for dialogue and meetings as needed.
6. Work with the student to address any concerns or issues that arise during the dissertation process and help to resolve any disputes or disagreements that may arise among committee members.
7. Provide prompt feedback to evaluate the student after each committee meeting, presentation, the qualifying exam, and the dissertation defense.
8. Provide input and edits for student manuscript, proposal, and dissertation drafts in a timely manner.
9. Serve as a holistic advocate for the student, including their research progress, professional development, and well-being as guided by the Individual Development Plan.
10. Be responsive to mentee feedback and pursue mentorship development opportunities to enhance advising/mentorship abilities over time.
11. Respect the power differential that exists between the student and chair and not abuse the trust placed in the chair as a member of the graduate faculty and research mentor.

Committee Member Responsibilities
1. Collaborate with the committee chair to provide timely and thorough guidance on all aspects of the student's graduate study, including coursework, the development and execution of a research project, the development and publication of manuscripts, and the ethical conduct of research.
2. Ensure that the student's research project is sound and the dissertation proposal is well-written, well-researched, and adheres to the guidelines set forth by the university.
3. Be accessible to the student for dialogue and meetings as needed.
4. Provide guidance and support to the student throughout the research project and dissertation writing process.
5. Provide prompt feedback to evaluate the student after each committee meeting, qualifying exam, presentations, and dissertation defense.
6. Provide input and edits for student manuscript, proposal, and dissertation drafts in a timely manner.
7. Serve as a holistic advocate for the student, including their research progress, professional development, and well-being as guided by the Individual Development Plan.
8. Be responsive to mentee feedback and pursue mentorship development opportunities to enhance advising/mentorship abilities over time.
9. Inform the committee chair of any feedback being provided to the student outside of the formal defense settings.
10. Ensure that conflicting demands are not placed upon the student.
11. Provide a diversity of expertise and additional perspectives to guide the student in their education, research, and professional development.
12. Respect the power differential that exists between a student and a committee member and not abuse the trust placed in the graduate faculty members as part of the committee.

Student Responsibilities
1. Invite faculty members to serve on the advisory committee, ensuring breadth and depth of expertise is provided and diversity of perspective is achieved, taking into account recommendations and discussions with the advisory committee chair.

2. Communicate mentorship needs and expectations to the advisory committee and chair, and provide mentors with feedback regarding potential improvements.
3. Schedule, plan, prepare for, and lead committee meetings, the qualifying exam, and the dissertation defense.
4. Engage in regular communication with advisor and committee members, raising questions and concerns with regard to coursework, the development and execution of the research project, the development and publication of manuscripts, the ethical conduct of research, the qualifying exam, and the dissertation defense.
5. Perform quality, responsibly conducted research and timely achievement of programmatic milestones (committee meetings, qualifying exam, presentations, and dissertation defense) that adhere to university rules and procedures to ensuring proper progress towards the degree.
6. Discuss professional interests and communicate career goals to the advisor and committee (utilizing the IDP and other resources) and take the lead in developing a plan to maximize your professional development and personal well-being.
7. Be responsive to feedback and concerns raised about performance and professional development and take the lead in developing plans to address issues moving forward.
8. Provide drafts of manuscripts, proposals, and the dissertation in a timely manner, allowing for ample amount of time for committee members to provide input and edits.
9. Respect the expertise of the advisory committee members and chair, understanding the power differential that exists between the student and chair/committee members and not abuse the trust placed in the student as a researcher and trainee.

Procedure for Sensitive Graduate Student Communication Best Practices

I. Purpose
The advisor/trainee relationship is one of the most critical factors that shape the careers of students pursuing a graduate degree in pharmaceutical sciences, as well as any other discipline. The dynamics of the relationship, however, places trainees in a vulnerable position. A primary graduate advisor has a great deal of power over the trainee, as it is typically difficult to change advisors midstream, therefore concessions are often made by students who are apprehensive about being open and honest in their communication regarding concerns of sub-optimal mentorship.

The Graduate Program strives to provide a safe, confidential space for individual student advocacy, with the goal of maintaining a culture in which students can communicate frustrations so that we as a program can support them in navigating potential difficulties while ensuring the self-agency of the student.

The purpose of this is to establish a procedure for best practice for students to communicate sensitive information concerning difficulties encountered with advisors or other members of the college community.

II. Procedure
1. Initial conversation. The initial conversation must occur with multiple individuals. In most cases this will consist of the Graduate Program Operations Director and the Coordinator of Student Success and Wellness. A plan will be created at this time in cooperation with the student that will guide navigation through the steps that follow.

2. Faculty administrative support. As appropriate, either the Director of Graduate Studies (DGS) or

supervising Department Chair will then be contacted for consultation.

3. Confidentiality. At the beginning of each conversation, it will be made clear to the student that, while most information can remain confidential if that is their wish, any information that consists of situations or actions that fall under mandatory statutory guidelines for reporting must be communicated as directed by state, federal, and university guidelines.

4. Ancillary Support. The student will also be referred to additional faculty or staff immediately as needed. The best individual to provide the necessary support will be engaged. Common examples include the Coordinator of Student Success and Wellness, the Human Resources Manager, the Director of Student Success and Development, and others who can provided oversight and guidance.

5. Transparency. While confidentiality will be maintained whenever possible at the request of the student, the DGS will typically strongly advise the student to be as transparent and communicative with the advisor as possible. This will, in most circumstances, be the cornerstone of the guidance provided.

6. Mediation. In cases of advisor/trainee disagreement, trainee perception of suboptimal treatment by the advisor, etc., every effort will be pursued to resolve the issue through open communication. Mediation will be provided by the DGS and/or other individuals that can provide support for this process.

7. Outside support. Cases that mandate reporting or require the involvement of other university offices, including the Academic Ombud, the Office of Institutional Equity, Human Resources, the Center for Support and Intervention, or the Dean of Students, those offices will be contacted and allowed to lead aspects of the response as appropriate.

8. Advisor change. Cases in which the best course of action is a change in primary advisor, the process will be mediated by the DGS. If the DGS is the student's primary advisor, the process will be mediated by the Department Chair. Other individuals may be included in this process as dictated by the provision of funding or supervisory role of the faculty involved (i.e. Department Chairs). All decisions will be in consultation with the Associate Dean for Academic Programs.

Student Annual Advisory Committee Meeting Report

Each graduate student is required to have a formal advisory committee every year that they are in the program. The first committee meeting should be held within 3 months of selecting a mentor and no later than August 1, prior to the start of the second year of graduate school. The purpose of the first meeting is simply to introduce the student to the committee members, provide a rough idea of the research project, and discuss coursework for the second year of study. After the initial meeting, annual meetings should take place by March 31 of the next year, and each subsequent year. The purpose of these meetings is to review student progress towards goal completion and to ensure that all committee members are in agreement as to the acceptability of the student's work thus far, and the direction of the project.

General Advisory Committee Meeting Guidelines
1. Each student should complete Part 1 of the meeting report and distribute to advisory committee members at least 2 days in advance of the meeting (this would go well with a reminder of the time and place of the meeting).

2. At the meeting, the student will give a short (~20-30 minutes) formal verbal presentation in which they explain their proposed, or on-going, research project.

3. In the discussion of the research progress, the committee will evaluate:

      A) The appropriateness of the research plan and methodologies

      B) The degree to which satisfactory research progress is being made

      C) The student's knowledge of the research discipline relative to their project

      D) The student's independence of thought, creativity, and competence in the design and execution of the research project

4. At the end of the meeting the committee should provide feedback to the student and advisor with regards to the student's progress in the graduate program, the degree to which the student's written and verbal communication skills meet expectations. Suggestions for future research and/or educational and scholarly progress will also be provided.

5. Following the meeting, the "Student Annual Advisory Committee Meeting Report" forms should be delivered to the Graduate Program Operations Director for inclusion in the student's file.

Doctoral Program Core Coursework

Each Track has a distinct set of courses. These courses may be offered in the Graduate Program of Pharmaceutical Sciences, or available outside of the Program. The mentor and the Dissertation Advisory Committee are empowered to select those courses that fit best into the educational and career goals of the student and the scientific goals of the dissertation. The Track Coordinator (for first-year students) or mentor and the Dissertation Advisory Committee are empowered to petition the DGS, in writing, to waive courses of the Graduate Program Core if the student has demonstrated sufficient academic mastery of material in courses taken in other programs. The DGS will monitor the coursework of students and keep the Advisory Committee members apprised as to the student's grades and completion of courses. Coursework and grades are reviewed by the Advisory committee at each yearly meeting.

The student's Dissertation Advisory Committee is responsible for coursework recommendations that are in addition to the common coursework of the program and courses recommended by the Track faculty. Full descriptions of available graduate courses are described in the Bulletin of the University of Kentucky Graduate School http://bulletin.uky.edu/content.php?catoid=8&navoid=365

Medicinal, Bioorganic, and Computational Chemistry Track

Core Courses: (Students should complete these courses over 4-6 semesters)

Course Prefix	Course Number	Credits	Course Title
PHS	601	3	Cells and Molecules
PHS	502	3	Foundations in Pharmaceutical Sciences I
PHS	760 00x	4	MBCC Track Course
PHR	700	1	Introduction to Pharmaceutical Sciences
PHS	701	3	Translational Research in Pharmaceutical Sciences
PHS	711	2	Responsible Conduct of Research
PHS	760 00x	3	NIH Style Grant Writing
PHS	750 00x	1	Pharm Sci Journal Club (choice of topic)
PHS	760 00x	Varies	Research Rotations

Course Prefix	Course Number	Credits	Course Title
PHS	778	1	Seminar (attendance required each semester until defense; officially register only until passing the qualifying exam)

Additional courses to be taken by an individual student depend on:
a) The research group and dissertation project the student selects
b) The academic preparation of the student (areas that need strengthening)

Elective courses:

Course Prefix	Course Number	Credits	Course Title
PHR	702	3	Innovation in Pharmaceutical Sciences
PHS	760 00x	1	Application of NMR and Other Spectroscopic Methods in Molecular Structure Determination
PHS	556	3	Principles of Drug Design
PHS	662	3	Bioorganic Mechanisms
PHS	660	3	Biosynthesis of Natural Products
PHS	663	3	Molecular Neurobiology of Abused Drugs
BCH	401G	3	Fundamentals of Biochemistry
CHE	440G	4	Introductory Physical Chemistry
CHE	538	3	Principals of Organic Chemistry
IBS	606	3	Physiological Communication
MA	213	4	Calculus III
PGY	502	5	Principles of Systems, Cellular and Molecular Physiology
STA	570	3	Basic Statistical Analysis

Pharmaceutical Chemistry and Engineering Track

Core Courses: (Students should complete these courses over 4-6 semesters)

Course Prefix	Course Number	Credits	Course Title
CME	505	3	Analysis of Chemical Engineering Problems
CME	630	3	Transport I
PHS	630	3	Pharmaceutical Rate Process
PHS	631	3	Equilibrium Phenomena in Pharmaceutical Systems
PHS	701	3	Translational Research in Pharmaceutical Sciences
PHR	700	1	Introduction to Pharmaceutical Sciences
PHS	760 xxx	1	PET Track Course: Pharmacodynamics Module
PHS	760 xxx	1	PET Track Course: Pharmacokinetics Module
PHS	760 00x	3	PCE Track Course
PHS	760 00x	3	NIH Style Grant Writing
PHS	760 00x	Varies	Research Rotations
PHS	750 00x	1	Pharm Sci Journal Club (choice of topic)

PHS	711	2	Responsible Conduct of Research
PHS	778	1	Seminar (attendance required each semester until defense; officially register only until passing the qualifying exam)

Additional courses to be taken by an individual student depend on:
   a) The research group and dissertation project the student selects
   b) The academic preparation of the student (areas that need strengthening)

Highly Recommended Courses:

Course Prefix	Course Number	Credits	Course Title
CHE	538	3	Principles of Organic Chemistry
CHE	548	3	Principles of Physical Chemistry II
IBS	601	3	Biomolecules and Metabolism (or CHE 550)
IBS	611	2	Practical Statistics
PGY	206 or 502	3 5	Elementary Physiology (no graduate credit) or Principles of Systems, Cellular and Molecular Physiology
PHS	573	3	Drug Delivery: Advanced Pharmaceutics
PHS	634	3	Pharmaceutical Engineering
STA	570	3	Basic Statistical Analysis
STA	602	4	Introduction to Statistical Methods

Elective Courses (These courses may require additional prerequisites):

Course Prefix	Course Number	Credits	Course Title
PHS	601	3	Cells and Molecules
PHS	502	3	Foundations in Pharmaceutical Sciences I
PHR	702	3	Innovation in Pharmaceutical Sciences
CHE	532	2	Spectroscopic Identification of Organic Molecules
CHE or IBS	552 602	3 3	Biological Chemistry II or Molecular Biology and Genetics
CHE or ABT	553 495	3 4	Chemistry and Molecular Biotechnology or Experimental Methods in Biotechnology
MED	616	3	Biology and Therapy of Cancer
STA	677	3	Applied Multivariate Methods

Pharmacology and Experimental Therapeutics

Core Courses: (Students should complete these courses over 4-6 semesters)

Course Prefix	Course Number	Credits	Course Title
PHS	601	3	Cells and Molecules
PHS	502	3	Foundations in Pharmaceutical Sciences I
PHS	760 00x	3	Pharmacology and Experimental Therapeutics (PET Track Course)

STA or IBS	570 or 611	2-3	Basic Statistical Analysis (3 credits) / Practical Statistics (2 credit)
PHR	700	1	Introduction to Pharmaceutical Sciences
PHS	701	3	Translational Research in Pharmaceutical Sciences
PHS	711	2	Responsible Conduct of Research
PHS	760 00x	3	NIH Style Grant Writing
PHS	750 00x	1	Pharm Sci Journal Club (choice of topic)
PHS	760 00x	Varies	Research Rotations
PHS	778	1	Seminar (required each semester until defense; officially register until passing the qualifying exam)

Electives:

Course Prefix	Course Number	Credits	Course Title
PHR	702	3	Innovation in Pharmaceutical Sciences
PHS	663	3	Molecular Neurobiology of Abused Drugs

Clinical and Experimental Therapeutics

Core Courses: (Students should complete these courses over 4-6 semesters)

Course Prefix	Course Number	Credits	Course Title
PHS	601	3	Cells and Molecules
PHS	502	3	Foundations in Pharmaceutical Sciences I
PHS	612	3	Quantitative Pharmacodynamics: Pharmacokinetics
PHS	711	2	Responsible Conduct of Research
PHS	750	1	Pharm Sci Journal Club (choice of journal club topic)
PHR	700	1	Introduction to Pharmaceutical Sciences
PHS	701	3	Translational Research in Pharmaceutical Sciences
PHS	760 00x	1	PET Track Course: Pharmacokinetics Module*
PHS	760 00x	1	PET Track Course: Pharmacogenetics Module*
PHS	760 00x	3	NIH Style Grant Writing
PHS	760 00x	Varies	Research Rotations
PHS	778	1	Seminar (attendance required each semester until defense; officially register only until passing the qualifying exam)
PPS	764	3	Drug Development Regulation & Clinical Research
STA	570	3	Basic Statistical Analysis
STA	674	3	Regression Analysis and Design of Experiments
All students must become IRB and HIPPA certified			

pending consultation with instructor regarding previous academic training

Electives

Course Prefix	Course Number	Credits	Course Title
PHR	702	3	Innovation in Pharmaceutical Sciences
PHS	760 00x	3	Techniques in Pharmaceutical Analysis

BIO	520	3	Bioinformatics
BIO	615	3	Molecular Biology
IBS	603	3	Cell Biology and Signaling
PGY	502	5	Principles of Systems, Cellular and Molecular Physiology
PGY	617	2	Physiological Genomics
PHA	621	3	Principles of Drug Action

Pharmaceutical Outcomes and Policy

The Doctor of Philosophy track focusing on Pharmaceutical Outcomes & Policy requires a minimum of 50 credit hours: including a 29 credit hour core curriculum, 12 hours in a specialization area designed by the Advisory Committee, and 9 hours of dissertation work. Students without appropriate pre-requisite training may be required to complete additional course work. Generally, students without a Master level degree will be required to complete appropriate level courses designed to meet pre-requisite requirements to begin doctoral coursework. The student Advisory Committee may also require additional coursework to satisfy appropriate depth and breadth of training.

Core Courses:

Course Prefix	Course Number	Credits	Course Title
PPS	700	3	Introduction to Pharmaceutical Outcomes and Policy
PPS	701	3	Pharmacoepidemiology
PPS	704	3	Pharmacy Informatics
PPS	706	3	Intermediate Pharmacoeconomics and Decision Analysis
PPS	710	3	Techniques in Secondary Data Research
PPS	750	1	Pharmaceutical Outcomes and Policy Journal Club (attendance is required each semester until defense)
PPS	760	3	Special Topics in Pharmacy Practice & Science: Behavioral Economics in Pharmaceutical Outcomes & Policy
PPS	778	1	Seminars in Pharmacy Practice & Science (attendance is required each semester until defense)
PHS	760	1	Topics in Pharmaceutical Sciences: Introduction to Pharmaceutical Sciences
PHS	701	3	Translational Research in Pharmaceutical Sciences
PHS	711	2	Responsible Conduct of Research
PHR	700	1	Introduction to Pharmaceutical Sciences
PHS	700 00x	3	NIH Style Grant Writing
BST	600*	3	Introduction to Biostatistical Methods
CPH	605*	3	Epidemiology
ECO	603*	3	Research Methods and Procedures in Economics OR (Alt. Statistics)
ECO	703*	3	Introduction to Econometrics I OR (Alt. Statistics)

All students must complete IRB and HIPAA training

* Prerequisites are required, including 6 hours of statistics or biostatistics, and introductory epidemiology and health economics. May be waived if comparable previously completed graduate-level courses have been completed.

In addition to the core courses, the student's Advisory Committee may recommend additional elective courses. A student's completion of these course requirements must be assured by the student's Mentor(s), Advisory Committee and PPS Track Coordinator. In addition, some students may need to complete prerequisite courses before beginning core class course work. Note at least 75% of the courses must be 600 level or higher and prerequisites for core courses cannot count as specialty electives.

Partial List of Elective Courses (these courses may require additional prerequisites)

Course Prefix	Course Number	Credits	Course Title
PPS	605	2	Pharmacoeconomics and Decision Analysis
PPS	620	3	Substance Use Disorders: Health Implication, Policies, & Prevention Strategies
PPS	702	2-3	Pharmaceutical Health Policy
PPS	764	3	Drug Development Regulation and Clinical Research
BMI	633	3	Introduction to Bioinformatics
BMI	730	3	Principles of Clinical Informatics
BMI	732	3	Biomedical Ontologies and Semantic Web Techniques
BMI	734	3	Introduction to Biomedical Image Analysis
BMI	738	3	Big Data for Healthcare
BST	682	3	Generalized Linear Models
BST	761	3	Time to Event Analysis
BST	762	3	Longitudinal Data Analysis
CPH	664	3	Design and Analysis of Clinical Trials
CPH	711	3	Chronic Disease Epidemiology
CPH	712	3	Advanced Epidemiology
CS	405G	3	Introduction to Database Systems
CS	460G	3	Machine Learning
CS	515	3	Algorithm Design
ECO	751	3	Public Economics
EPI	717	3	Introduction to Casual Inference
PA	751	3	Public Policy Formulation & Implementation
PA	752	3	The Economics of Policy Analysis
PPA	784		Next Generation Sequencing and Bioinformatics
STA	671	2	Regression and Correlation
STA	672	2	Design and Analysis of Experiments
STA	673	2	Distribution-Free Statistical Inference and Analysis of Categorical Data
STA	677	3	Applied Multivariate Methods

Registration for Courses

Process

Incoming graduate students schedule classes during the week preceding the first of the semester. Pre-registration for returning graduate students usually takes place about six weeks prior to the end of the semester, i.e., scheduling for the Spring semester takes place early in November during the Fall semester. The following steps should be taken:

1. Consult with your advisory committee or Track Coordinator (for first-year students) to obtain guidance in courses to take.
2. See the Graduate Program Operations Director (in Room 371) for instructions on how to register by web, if help is needed. Registration is completed by using myUK.
3. Returning graduate students who fail to pre-register must pay a late registration fee.

All returning graduate students should consult with the major professor and advisory committee concerning courses.

Academic Load

The total semester or term academic load of a student is the sum of all credits and credit equivalents (e.g., graduate language courses, undergraduate courses, courses audited, etc.) being carried. The normal academic load of a graduate student during any semester or summer is nine credit hours or equivalent. Only with permission from the Graduate School may it exceed 15 credit hours or equivalent. For the student who is a full-time teaching assistant or whose service to the University requires approximately 20 hours per week, the academic load shall not exceed 12 hours. This maximum may exceed 12 hours for students with lighter service loads upon recommendation of the Director of Graduate Studies and approval of the Dean of the Graduate School.

Students satisfactorily completing nine course credits, or equivalent, of graduate level work during a semester or summer are classified as full-time students by the University. Those completing less than these amounts are classified as part-time. Full-time students who fall below the minimum full-time equivalent as the result of failing or dropping one or more courses are reclassified as part-time students for that semester or term.

Graduate School Grading Policies

Grading

An overall average of 3.0 on all graduate work in the program must be attained before an advanced degree maybe awarded. Graduate level courses (400G-799) are computed in the graduate grade point average. D grades are not given to graduate students. Graduate courses may not be taken pass/fail. A grade of I (incomplete) may be assigned to a graduate student if a part of the work of a course remains undone and if there is a reasonable possibility that a passing grade will result from completion of the work. All incompletes (I grades) must be replaced by a regular final letter grade within 12 months of the end of the academic term in which the I grade was awarded or prior to the student's graduation, whichever occurs first. If an I grade has not been replaced within the allowable period, the University Registrar shall change the I grade to a grade of E on the student's permanent academic record and adjust the student's grade point average accordingly, unless otherwise approved because of exceptional circumstances by the Dean of the Graduate School upon recommendation of the Director of Graduate

Studies in the student's program. Instructors who assign an I grade must file with the student's Director of Graduate Studies information which includes 1) the name of the student, 2) the course number and hours of credit, 3) the semester and year of enrollment, 4) specific information on the work to be completed before a final grade can be assigned, and 5) the time frame in which the specific requirements are to be met (not to exceed 12 months). Graduate students should consult with their Director of Graduate Studies concerning procedures relative to the awarding of I grades and the conditions under which they may be removed. All I grades must be resolved to a regular letter grade before a student may sit for the final examination, or the qualifying examination for doctoral students. Exceptions to this rule will be considered in unusual circumstances, and require the approval of the Director of Graduate Studies and the Dean of the Graduate School.

A grade of S (satisfactory) may be recorded for students in graduate seminars, independent work courses, and research courses which extend beyond the normal limits of a semester or summer term. This grade may not be given to a student in a course carrying credit if the student has done unsatisfactory work or failed to do a reasonable amount of work, in which case a grade of U (unsatisfactory) will be assigned. The project must be substantially continuous in its progress. All S and U grades must be removed prior to the final examination (or qualifying examination for doctoral students), except for those given in Residence Credit 748, 749, 757, 767, 768, and 769, or in graduate courses which carry no credit. Once a grade other than I, S, or U has been reported to the Registrar's Office, it may not be changed unless an error was made at the time the grade was given and recorded, and then only upon the written unanimous approval of the instructor, the Registrar, and the Dean of the Graduate School.

A grade of "UN" can be assigned to credit-bearing seminars, independent work courses, or research courses if these courses extend beyond the normal limits of a semester or summer term. This grade is given to a student who has done unsatisfactory work or to one who has failed to do a reasonable amount of work. All "UN" grades in credit-bearing courses must be replaced by a regular final letter grade before a candidate for a graduate degree is permitted to sit for a Qualifying or Final Examination. Grade "UN" is recorded as a permanent mark only in courses carrying no academic credit or graduate residence courses.

Scholastic Probation
When students have completed 12 or more semester hours of graduate course work with a cumulative GPA of less than 3.00, they will be placed on scholastic probation. Students will have one full-time semester or the equivalent (9 hours) to remove the scholastic probation by attaining a 3.00 cumulative GPA. If probation is not removed, students will be dismissed from the Graduate School. Students who have been dismissed from the Graduate School for this reason may apply for readmission after two semesters or one semester and the summer term. If they are accepted by the program, admitted students will have one full-time semester or the equivalent (9 hours) to remove the scholastic probation by attaining a 3.00 cumulative GPA. Exceptions to this policy can be made only by the Dean of the Graduate School. Students placed on scholastic probation are not eligible for fellowships or tuition scholarships and may not sit for doctoral qualifying or final examinations, or master's final examinations.

Repeat Option
A graduate student may elect to repeat a graduate course and count only the second grade as part of the GPA. A student may exercise the repeat option only once in a degree program. To exercise the option, a student must obtain the necessary form from the Graduate School. The request must be filed before the

course is repeated; in no case will the request be accepted later than the last day on which a course may be dropped without having it appear on the transcript.

Seminars

Students are required to make scientific presentations at set times throughout the graduate training as outlined below. The purpose of these seminars is to allow the student to develop their ability to orally present research within their area of expertise and their own findings to their scientific peers.

First year of graduate study - Each student will present at least one short seminar in the Introduction to Pharmaceutical Sciences course. A Seminar Performance Evaluation Form is completed by faculty in attendance.

Second year of graduate study – Each student will present at least one 30-minute seminar organized by Track Faculty (in lieu of a seminar, some Divisions may use journal clubs or other meaningful speaking opportunities as a replacement). A Seminar Performance Evaluation Form is completed by faculty in attendance.

All students will present one 50-minute seminar to the entire Graduate Faculty within one year of passing the qualifying exam. These seminars are held on Tuesdays. A Seminar Performance Evaluation Form is completed by faculty in attendance.

The only other programmatic seminar requirement would be for the public seminar prior to the dissertation defense. Track Faculty could add additional requirements for post-qual students as they see necessary. Each student is required to attend seminar each semester until they defend the dissertation; however, students officially register only until they pass the Qual exam and move into 2-credit status (PHS/PPS 757 – Qualifying Exam Residency credit or PHS/PPS 767- Dissertation Residency credit). Attendance sheets will be available in the seminar room for students to sign in.

Literature Discussion Groups (Journal Clubs)

Throughout their graduate studies, all students are encouraged to participate actively in one or more literature discussion groups (journal clubs) for their area. Students are required to report on the annual advisory committee meeting form which journal club they regularly attend and participate in during the year. Literature discussion groups may include students and faculty from other Colleges at UK in addition to those Pharmaceutical Sciences. Literature Discussion Groups provide opportunities to discuss classical, ground-breaking, and front-line research as well as give students practice in presenting their research findings. Each Track has its own journal club requirements—please refer to the Required Coursework section above for details.

Individual Development Plans

Individual Development Plans (IDP) will be completed by each graduate student after identifying a major advisor. The mentor and mentee will undergo the initial IDP creation process prior to the student's first committee meeting. IDPs serve as a mechanism for students and their mentors to identify career goals and develop specific plans for projects, graduate study, and professional development to assist in achieving these goals. The IDP is a basis for communication between the student, the mentor, and the

committee. This is an important step in the comprehensive mentoring process where professional development and career planning are achieved in conjunction with completion of the degree.

The development and implementation of the IDP is an interactive and iterative process that continues to mature throughout the student's time in the program. For complete details please see the Individual Development Plan Guidelines.

Qualifying Exam

The student will be permitted to take the qualifying examination after they have completed the courses required in the relevant Track. The Advisory Committee should be formed and officially appointed no later than the point at which 18 credits hours of graduate work have been accumulated. Qualifying exams can be taken no earlier than one academic year after the official formation of the Advisory Committee. Exceptions can be made for students transferring into the program. Permission to schedule a qualifying exam should be requested by the student at their annual Advisory Committee meeting. The student should prepare a list of courses and grades received for all of their graduate work. The DGS will ensure that the relevant Graduate Program Core courses are completed. **Graduate students in the Pharmaceutical Sciences Graduate Program (PhD) will be required to take the Qualifying Exam during the summer before the start of the student's 5th semester in the program (at close of regular fall registration).**

Step by Step

1. Intent of Examination
   a. To answer the question "Is the student ready to begin PhD-level work?"
   b. NOT to judge the project
2. Graduate School requirements
   a. Student must have completed four semesters (36 credit hours) in the PhD program or completed a master's degree from an accredited U.S. institution and 2 semesters (18 credit hours) in the PhD program
   b. Must have a grade assigned to all completed courses—*have Graduate Program Operations Director submit Grade Change form to update previous "S" grades*
3. Steps to get the process started
   a. Have Advisory Committee approval for student to sit for examination--*have an Advisory Committee meeting*
   b. Settle on dates for Written Questions to be given to student (See Part 4.b.)—this should be in the month preceding the possible oral exam date. *Notify Graduate Program Operations Director*
   c. Settle on date for Oral Portion of Examination. The qualifying exam must be taken during the summer before the start of the student's 5th semester in the program (at close of regular fall registration).
   d. Student must login to their personal page on the Doctoral Degree Candidate Forms website https://ris.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm. The student should complete the Qualifying Examination Request Form online and submit to the DGS for approval two weeks prior to your oral qualifying examination date
   e. Grad School will return to Graduate Program Operations Director an AUTHORIZATION-TO-TAKE-EXAM card – *they will give it to your mentor on the day of the oral exam*
   f. MUST have all members present for whole examination
4. Format of Examination

a. Three parts: Written Questions, Written Proposal, and Oral Examination
   b. Written question(s) submitted by each committee member to Graduate Program Operations Director
   c. Written Proposal
      i. NIH style research proposal. See format rules below and *check with your mentor and advisory committee for any unique format and page limits that they wish to impose.*
      ii. Goal—to assess if the candidate can identify a worthy research problem, formulate a hypothesis and design experiments to test that hypothesis
      iii. You can use your current research project, but must show independence from your mentor
      iv. Provide written proposal to committee members **two weeks** prior to oral examination
   d. Oral portion
   e. Must pass all 3 portions to advance to candidacy
5. Results/Consequences
   a. Following successful completion of the qualifying exam, the student is required to register for 2 credit hours of PHS/PPS 767 every semester until they have completed and defended their dissertation. These 2 credits will constitute full-time enrollment. If a the student is required by the advisory committee to take additional course work that semester (such as a course that is offered only every other year) they must consult the DGS <u>before registering</u> for that course, as this will cause tuition costs to be greater (see important tuition scholarship information in this document).
   b. If the student does not pass the qualifying exam before the beginning of the 5th semester, the UK Graduate School permits registration in PHS / PPS 757 for two credits only once. If the students does not pass the qualifying exam during the semester they are registered for 757, they must enroll in 9 credit hours the following semester.
   c. If the qualifying exam is failed, the minimum time in between examinations is four months. The second examination must be taken within one year after the first examination. A third examination is not permitted. The committee will determine if the student must re-take the entire exam (written, oral) or just individual parts.
   d. Support for tuition covers a maximum of 4 semesters at the full 9 credit rate. **Students are expected to take their Qualifying Exam during the summer before the beginning of the 5th semester.**
   e. Failure to pass the qualifying exam may result in termination of the research assistantship which includes the tuition scholarship.
   f. See Tuition Policy Statement for exceptions to these policies.

Written Questions

The written examination will be composed of questions designed to evaluate the student's understanding and competence of the specialty area within pharmaceutical sciences in which the student anticipates conducting their dissertation research. The time frame for the written exam is decided during a meeting of the Advisory Committee or by email/phone communication between (and initiated by) the student and committee members.

The graduate student should notify the Graduate Program Operations Director of the week the committee has designated for the written exam. The Graduate Program Operations Director will contact the committee by email to confirm the dates for the written exam and to request that questions (along with stipulations, such as open book vs. closed, time limits) be emailed to the Graduate Program Operations Director by the Friday prior to the start of the exam week. The Graduate Program Operations Director will

contact the student as questions are received to relay the stipulations (ex. Dr. Smith sent closed book questions with a 4 hour time limit). The student will notify the Graduate Program Operations Director of the days/times the student prefers to take each part of the exam. The Graduate Program Operations Director will reserve rooms for closed book questions. The graduate student will return their answers to the Graduate Program Operations Director. A copy will be retained for the student file and the original delivered to the committee member who provided that question for grading. Committee members grade questions as pass-fail at the PhD level and notify the major professor of the results. Each Committee Member completes the Qualifying Examination Performance Evaluation (Written Component) Form. The Major Professor relays results to student and confirms approval to take the oral exam. The committee members bring the graded written portions to the oral exam and can bring up points for clarification.

NIH-style proposal

The student will prepare a research proposal prior to beginning the written questions portion of the examination. The student and their Major Professor will determine the topic for the research proposal. *For CET students, one of the Aims should address a clinical hypothesis.* The research proposal must develop one or more hypotheses that involve unique ideas that the student presents and tests in the proposal and that the student is able to defend in the oral examination. The student **must not plagiarize** the mentor's grant applications or publications. The format of the proposal will be an abbreviated NIH grant (see below). The students should distribute copies of the proposal to each Advisory Committee member **before** taking the written questions, and no later than **two weeks** in advance of the oral examination. Advisory Committee members will review the proposal for evidence that the student has learned the scientific method including identification of the aims of the research, generation of the hypotheses to be tested and proper testing of the hypotheses. The Advisory Committee's review of the proposal will focus on the student's mastering of the scientific method, not the specific research to be conducted.

Written Project Proposal Format
The qualifying exam grant should be written using the NIH Guidelines for a Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellows (Parent F31).
https://grants.nih.gov/grants/guide/pa-files/pa-19-195.html

Specific Aims (one page)
State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology.
Note: *For CET students, one of the Aims should address a clinical hypothesis.*

Research Strategy (no more than 6 pages total)
Organize the Research Strategy in the specified order using the instructions provided below. Start each section with the appropriate section heading — Significance, Innovation, Approach. Cite published experimental details in the Research Strategy section and provide full reference details. Include information on preliminary studies, if any. Preliminary data can be included within any of the sections listed below (included in the 6 page limit).

(a) Significance
1. Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.
2. Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.
3. Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

(b) Innovation (this section is optional)
1. Describe the ways in which the proposed work challenges current research or clinical practice paradigms, or uses novel concepts, approaches, methodologies, instrumentation, or interventions.

(c) Approach
1. Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.
2. Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
3. If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high risk aspects of the proposed work.
4. Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised.
5. Include any courses that you plan to take to support the research training experience.

Preliminary Studies
Include information on preliminary studies, if any. Preliminary data can be included within any of the sections listed above.

Literature Cited
List the most relevant literature cited in the proposal. This section is not included in the page limit.

Oral Examination
The oral examination will evaluate the student's familiarity with literature in the specialty area in which the student anticipates conducting their dissertation research, skill in the recognition of meaningful questions for investigation, ability to design experimental protocols and ability to communicate effectively. Committee members may also ask questions related to the written questions portion. The student will defend the mini-NIH format research proposal. Committee members are encouraged to meet at the beginning of the exam to identify the issues and questions to be pursued in the oral examination. Each Committee Member will complete the Qualifying Examination Performance Evaluation (Oral Component) Form.

The Final Examination (Dissertation and Defense)

This program operates within the purview of The Graduate School of the University of Kentucky. The Bulletin of the Graduate School should be consulted for guidelines and requirements applicable to all graduate students and can be found at the following link.
http://bulletin.uky.edu/index.php

The Doctor of Philosophy Degree

The PhD degree is intended to represent the demonstration of independent and comprehensive scholarship in a specific field. Such scholarship must be manifested by both the student's mastery of subject matter and capacity to do research. The degree of Doctor of Philosophy is conferred upon a candidate who, after completing graduate work devoted to study of a special field of knowledge, (1) passes comprehensive examinations in the chosen field and the dissertation subject, (2) presents a satisfactory dissertation, and (3) shows evidence of scholarly attainment.

PhD Dissertation

The most important experience in the education of a graduate student is the completion of a PhD dissertation. Each student must present a dissertation that represents the culmination of a major research project. The dissertation must be a well-reasoned, original contribution to knowledge in the field of study and should provide evidence of high scholarly achievement. The Major Professor is the primary source of guidance in the planning and preparation of the dissertation. However, other members of the Advisory Committee may be involved in the process as well. All core members of the Advisory Committee must have the opportunity to read a near-final draft of the dissertation prior to signing the Dissertation Approval Form. The student must submit the dissertation to the Advisory Committee at least 4 weeks in advance of the defense date to allow the Advisory Committee sufficient time to review the dissertation prior to signing the Dissertation Approval Form. It is the responsibility of the Advisory Committee to make suggestions for revisions before the Final Examination. A majority of the Advisory Committee core members must indicate that the form and substance of the dissertation are adequate to justify the scheduling of the Final Examination. The Final Examination on the dissertation may not be scheduled without the signatures of a majority of the Advisory Committee's members on the Approval Form. A Dissertation Defense Evaluation Form is completed by the Advisory Committee and Outside Examiner upon completion of the defense.

The style and form of the dissertation must be in conformity with the instructions prepared by the Graduate School. For specific instructions regarding the format of the dissertation, the student should consult the Instructions for the Preparation of Theses and Dissertations from the Graduate School Office (http://gradschool.uky.edu/thesis-dissertation-preparation).

Residency Requirements

Students must complete the equivalent of two years of residency (36 credit hours of graduate coursework*) prior to the qualifying examination. An awarded master's degree from the University of Kentucky or from another accredited school may satisfy up to 18 of this 36-hour pre-qualifying requirement. Such requests should be made by the DGS to the Senior Associate Dean of the Graduate School. For students with extensive prior graduate work, a waiver of additional pre-qualifying residency hours may be appropriate. Requests should be submitted in writing by the DGS to the Dean of the

Graduate School and should include a detailed justification and evidence that the student's Major Professor and Advisory Committee support the request.

Students are required to enroll in a 2-credit hour course after successfully completing the qualifying examination, PHS/PPS 767 Dissertation Residency Credit. The Graduate School will provide a scholarship for the out-of-state (OOS) portion of the (2) credit hours associated with a 767 course and the student will only be responsible for the in-state tuition rate plus mandatory fees*. This 767 OOS tuition scholarship will only be provided to students who are receiving no assistantship or fellowship funding that semester. Students who are receiving Assistantships (TA, RA, GA) will not receive this 767 tuition scholarship as they will already receive tuition scholarships appropriate to their assistantship level (half vs. full). Students should understand their eligibility for tuition scholarships and course exclusions for tuition scholarships as described by the UK Graduate School: https://gradschool.uky.edu/tuition-scholarship-information Students must remain continuously enrolled in this course every fall and spring semester until they have completed and defended the dissertation. This will constitute full-time enrollment. Students are required to complete a minimum of two semesters of 767 before they can graduate.

*UK employees (0.75 FTE or higher) enrolled in the Employee Education Program (EEP) are not eligible for this out-of-state tuition scholarship. The UK Graduate School sets a time limit on the number of semesters they will provide the OOS tuition scholarship for 767. Students should refer to the UK Graduate School tuition scholarship information page: https://gradschool.uky.edu/tuition-scholarship-information

Time Limit for Doctoral Degrees
All degree requirements for the doctorate must be completed within five years following the semester or summer session in which the candidate successfully completes the qualifying examination, but extensions up to an additional 5 years may be requested for a total of 10 years. All requests should be initiated by the Director of Graduate Studies and be accompanied by a letter of support from the student's mentor. An extension of up to one year may be approved by the Senior Associate Dean of the Graduate School. Requests for extensions longer than one year must be considered by Graduate Council. All requests should be initiated by the Director of Graduate Studies and must include a recommendation on whether or not a retake of the qualifying examination should be a requirement of the extension. If requested, failure to pass the re-examination will result in the termination of degree candidacy; a second re-examination is not permitted. Failure to complete all degree requirements within 10 years of initially taking the qualifying examination will also result in the termination of degree candidacy.

A program may submit an appeal to the Graduate Council to allow a time-to-degree terminated student to be readmitted and pursue the degree without re-taking all required coursework. The appeal should:

Provide an explanation for the failure to initially complete the degree on-time. Provide a detailed description of the requirements that must be fulfilled in order to receive the degree. Provide confirmation that the appeal was approved by the majority of the program graduate faculty.

The Final Examination
The Final Examination includes a defense of the dissertation and may be as comprehensive in the major and minor areas as the advisory committee chooses to make it. It is conducted by an expanded advisory committee chaired by the Director of Graduate Studies or someone designated by the Director. The Dean of the Graduate School and the President of the University are ex officio members of all final examination

committees. The examination is a public event and its scheduling is published and announced beforehand. Any member of the University community may attend.

Forms and Schedule of Important Deadlines for Final Examination

Graduate School Application for Degree Card
To be eligible for a degree, students must file an application in the Graduate School within 30 days after the start of the semester (or 15 days into the second Summer Session), in which they expect to complete their work. This is accomplished by online submission of the "Application for Degree." To access the online degree app, the student must go to http://myuk.uky.edu/. Once there, navigate to Student Services/myRecords/Graduate Degree Application.

Notification of Intent
At least **eight weeks** prior to the Final Examination, the graduate student should submit online the "Notification of Intent to Schedule a Final Doctoral Examination" to notify the UK Graduate School of the intent to examine. Student must login to their personal page on the Doctoral Degree Candidate Forms website https://ris.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm. The DGS must approve the "Notification of Intent to Schedule a Final Doctoral Examination" in order to initiate the doctoral final examination process. Upon submission of the form, the Dean of the Graduate School appoints an Outside Examiner. Following the appointment of the Outside Examiner, the final examination date may be set. Note that the minimum eight week lead time is required to secure a suitable outside examiner and to perform the necessary audit of the student's academic record (a student will not be allowed to sit for the Final Examination until any remaining "I" or "S" grades in credit-bearing courses have been assigned letter grades).

Dissertation Approval Form
The student must provide the Advisory Committee the completed, formatted dissertation at least 4 weeks prior to the defense date. All members of the committee except the outside examiner must have an opportunity to suggest revisions prior to scheduling the Final Examination. Thus, most revisions should have been completed at an earlier time. The student must submit to the Graduate Program Operations Director the Dissertation Approval Form signed by a majority of the Advisory Committee including the Major Professor at least 2 weeks in advance of the final exam date.

Request for Final Doctoral Examination
The Request for Final Doctoral Examination must be submitted to The Graduate School at least two weeks before the scheduled date for the Final Exam. Students must login to their personal page on the Doctoral Degree Candidate Forms website https://ris.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm The DGS will not approve the Request for Final Doctoral Examination until the Dissertation Approval Form is submitted.

Last date for candidates to sit for a final exam
The final examination must take place no later than eight days prior to the last day of classes of the semester in which the student expects to graduate. Final examinations are public events and must take place while the University is officially in session. They may not be scheduled during the periods between semesters or between the end of the second summer session and the beginning of the fall semester.

Examination deadlines and their relation to degree conferral can be found in the University Calendar. https://www.uky.edu/registrar/content/academic-calendar

In all decisions, the majority opinion of the Graduate Faculty members of the advisory committee prevails. If the advisory committee is evenly divided, the candidates fails. In the event of a failure, the advisory committee may recommend conditions under which the candidate may be re-examined, if the re-examination is deemed appropriate. The minimum time between examinations is four months. A second examination must be taken within one year after the first examination. Should any vacancies on the Committee occur between the two examinations, the Dean of the Graduate School shall appoint replacements. A third examination is not permitted.

The following are Graduate School procedures for conducting the Final Examination:
- At the outset of the Examination, the DGS or committee chair should verify that the Examination Card is available. If this is not the case, the committee chair or DGS must call the Graduate School (859-257-2411) to determine if the examination may proceed.
- The Examination may not begin until all voting members of the committee are present (these names are listed on the examination card)
- An Examination may be cancelled prior to its official start for substantive reason with no permanent consequences for the student. The student has not failed the examination in this case because it was never officially begun. Substantive reasons can include a missing committee member, a sudden difficulty in the candidate's personal life that may affect performance, or a (late) opinion on the part of one or more committee members, for example that the dissertation is not ready to defend. In such cases, the committee may hold an open or closed discussion to review the issues at hand and reach a decision on whether to hold the examination or not. Furthermore, the candidate does have the right to cancel the examination prior to its start. If the examination is cancelled, it must be formally rescheduled with the Graduate School in the standard fashion. A minimum two-week interval is required for re-scheduling the examination
- Once the examination has begun, all committee members must remain present for the duration of the process, and it must be carried through until its end. A formal vote must be taken and recorded on the examination card, along with the signatures of all (voting) members. There are only two outcomes possible; by majority vote, Pass or Fail. The only suspensions permitted are short ones to permit the candidate or committee members to refresh themselves.
- If an emergency situation should arise during the course of an examination, the committee chair or DGS should immediately call the Graduate School (859-257-2411) to seek guidance.

After the Final Examination is passed, the final version of the dissertation is prepared, incorporating the changes required by the Advisory Committee. The final version is approved by the mentor and the Director of Graduate Studies by signing the ETD (Electronic Thesis or Dissertation) Approval Form for Final Copy, and submitting to The Graduate School. The dissertation in its final form must be received in The Graduate School office within 60 days of the Final Examination. If this deadline is not met, the candidate may be required to undergo a second examination.

All doctoral dissertations must be submitted in electronic format. Instructions are available at https://gradschool.uky.edu/electronic-dissertation-preparation . To view the current collection of ETD's, go to http://uknowledge.uky.edu/gradschool/ .

Core Competencies/Student Evaluation/Progress

Core Competencies

We have established a set of Core Competencies that form a foundation for our training. The competencies serve to form the basis for our Program Learning Outcomes and encompass 5 Domains: Foundational Knowledge, Research, Communication, Leadership/Management, and Personal/Professional Development. The Competencies form the basis for student evaluation as well as programmatic assessment. The current Core Competencies were approved in 2019 and can be found here https://pharmacy.uky.edu/node/197 .

Longitudinal Graduate Student Evaluation Procedure

Purpose

The longitudinal evaluation process will provide our graduate student advisors a mechanism to deliver consistent feedback to our student over the course of their graduate training. The Program-level Student Learning Outcomes (PSLO) are based on Core Competencies that were established in 2018. The purpose of the process is to:

a. Generate data that assesses the success of our program in delivering the training outlined in the Core Competencies. This data is required for programmatic assessment initiatives as directed by the Graduate School and Office of the Provost.
b. Provide longitudinal performance feedback to trainees.
c. Serve our holistic, student-centric mission of training through identification of gaps in skills and performance, and assist our trainees in reaching their training goals.

Interpretation of performance and evaluation of competency achievement are subjective and variable across advisors and trainees. Thus, the overarching goal of each review is to foster productive communication and ensure transparency in evaluating progress in relation to individualized expectations. It is not necessary to achieve "competency" in each PSLO, nor is it required to evaluate every PSLO for an individual trainee.

Procedure

1. Major graduate advisors will complete the evaluation at a minimum frequency of once every 6 months after the student is permanently assigned.
2. Part 1 of the evaluation, Performance Characteristics, is designed to provide the student feedback on their performance since the previous review.
3. Part 2 of the evaluation, Core Competencies, is designed to assess the accumulation of skills and competencies that builds towards graduation. Each time the evaluation is opened, the progress entered during the previous assessment will be displayed. A list of example evidences are provided for each competency; however, the evaluator is free to interpret each as they choose.
4. Both parts will be completed by both the advisor and the student independently and shared. This will form the basis for a discussion providing the student feedback as to the aspects of their performance and developing skills that are strengths, opportunities for growth, or need improvement.
5. Prior to the annual Advisory Committee meeting, Qualifying Exam, and Dissertation Defense, all committee members will be provided the results of the previous evaluations to allow for committee member input.

See the full process and evaluation components at the end of the handbook.

Academic Honesty/Penalties

Academic honesty is the cornerstone upon which scientific research and scholarship are based. Experimental discoveries and new scientific insights are built upon a foundation formed by the work and thoughts of others. Thus, utilizing such thoughts in a paper or manuscript, without giving credit to the originator of the idea or result, is dishonest. Such dishonesty is termed *plagiarism*, and is considered an extremely serious offense by the graduate program, the University of Kentucky, and the academic community throughout the world. The penalties for plagiarism are grave, and can range from a zero for an assignment, to an E (failure) in a course, and, in grievous instances, suspension, dismissal or expulsion from the graduate program and university. The official university list of definitions (Senate Rule 6.3.1), and penalties (Senate Rule 6.4.4.1.3) is available at: https://www.uky.edu/universitysenate/rules-regulations

In addition, scientific journals demand a high standard of honesty and fair credit for previous publications in manuscripts that are submitted for review. The journals published by the American Association of Pharmaceutical Scientists have developed an Ethics Policy that covers plagiarism, improper manipulation of images, data fabrication or falsification, and other serious breaches of scientific conduct. This information is available at: https://www.aaps.org/education-and-research/journals/the-aaps-journal. The American Chemical Society and its associated journals also have ethical guidelines that can be found at: https://pubs.acs.org/page/policy/ethics/index.html .

Students should familiarize themselves with what constitutes plagiarism, especially in writing manuscripts for the primary literature and their dissertations. Practices that are accepted in other cultures may be considered serious offenses in the United States. The University Academic Ombud Office has additional resources at: http://www.uky.edu/Ombud/policies.php and a link to an excellent paper, "Plagiarism: What is it?" at https://ombud.uky.edu/students/what-plagiarism.

The "cure" for plagiarism is general and simple—writers must include an immediate citation in the text, to indicate where the information originated, or, if phrases are used verbatim, quotation marks in addition to a citation. To quote Dr. Leggas, "…err on the side of caution – i.e., Don't hesitate to give credit where credit is due – nobody will blame you for knowing and referencing the literature!"

Progress to Degree

Each semester a Notice of Appointment form is completed and signed by each student. This form notes that a student's continuation is "Contingent upon continued availability of funding, satisfactory performance and professional completion of assigned duties." This includes grades in coursework, as well as attendance at seminars, and performance in rotations and research. Also, as noted on p. 12 of this Handbook ("Rotations"), there is a requirement that a "student may be dismissed from the Program if s/he fails to identify a mentor by the end of June of the first year." Thus, to remain in good standing and continue in the program, a student must have a mentor and a dissertation project, and show continual effort toward completion of the dissertation and PhD degree. The process that will be followed should dismissal be sought is described in the Graduate School Bulletin, and is found at: http://bulletin.uky.edu/index.php

Financial Aid (Assistantships)

Students are expected to fulfill the responsibilities of their teaching assistantship, research assistantship, or fellowship to the best of their abilities. Students are also expected to meet the responsibilities of all coursework as outlined in individual course syllabi. Students are responsible for making progress toward graduation at all times.

Policy on Payment of Tuition
Drafted November, 2006
Policy to be implemented Fall semester 2007

General Statement of Policy
There is a general expectation that a graduate student's tuition will be paid by funds awarded to the faculty mentor, or by the department after year one. It is also expected that tuition reimbursement will be requested as part of graduate student support in applications for grants and contracts.

With regard to departmental support for students in the Ph.D. program in the College of Pharmacy, full, in-state tuition will be paid for 4 semesters. Graduate students in the Pharmaceutical Sciences Graduate Program (PhD) will be required to take the Qualifying Exam during the summer before the start of the student's 5th semester in the program (at close of regular fall registration). Upon successfully passing that exam, students will register each semester for 2 credits of PHS / PPS 767- residency for Ph.D. *Failure to pass the qualifying exam may result in termination of the research assistantship which includes the tuition scholarship.* University of Kentucky Administrative Regulation 5:2: IV. E: Doctoral students will serve no more than five years as teaching or research assistants unless an extension for good cause is granted by the UK Graduate School. https://regs.uky.edu/sites/default/files/2022-03/ar_5-2_2018_final.pdf

Policy in Special Circumstances
1. The provision of tuition funding applies only to students who are in good standing. A student whose GPA falls below the university requirement will be placed on probation, and the university will no longer waive out-of-state tuition. Under such circumstances, the *departments will provide tuition, but only at the in-state tuition rate*. If the student is classified as international or out-of-state, the student or the major professor (as agreed in a letter to the department) will be responsible for the remainder of the tuition.
2. This policy applies only to students who are in-residence and actively pursuing completion of their degree program. *Students who leave the university before completion of the thesis will no longer receive tuition support from departmental resources*.
3. Students who do not pass the qualifying examination, do not successfully defend their thesis, or who through exceptional circumstances cannot meet this schedule, will need to petition the DGS and Chair in writing for an exception to this policy.

Teaching Expectations for Students Receiving Tuition Support
During their first year in the program, students who receive tuition support from departmental sources will be expected to perform assigned teaching duties. *Students receiving departmental tuition support may also be asked to perform occasional additional duties as exam proctors during their second and subsequent years.*

Most students admitted to the Pharmaceutical Science Graduate Program receive a stipend. The source of the stipend varies and includes Teaching Assistantships, Research Assistantships and Fellowships. The level current base stipend is $30,000. Selected intramural fellowship recipients can receive both the fellowship and a partial TA assignment. Competition for stipends is strong.

Teaching Assistantships

Incoming students frequently receive a stipend in the form of a Teaching Assistantship (TA) within the College of Pharmacy professional curriculum. Various types of teaching opportunities are available including lecturing, tutoring, small group discussion leader, pharmacy practice lab assistant, grading and other duties. Assignment of a specific TA is a function of the knowledge base or skill level required of the assignment and past performance of the student. The DGS and the Associate Dean for Academics make assignments prior to the semester. Every effort is made to individualize the TA assignment to meet the academic and/or career interests of the graduate student. Many of these assignments provide the graduate student with opportunities to observe and develop their own teaching skills. Duties and responsibilities of a TA are taken very seriously. The TA is an extension of the faculty and is expected to act as a role model for our professional students. Scheduling of research activities, committee meetings, and other activities should not conflict with assigned TA duties. Although many students transition to a Research Assistantship (see below) after their second year, those wishing to continue in a TA (with the agreement of their Major Advisor) have the option to do so based on availability.

Research Assistantships

Students in their second year of study and beyond generally receive a stipend in the form of a Research Assistantship funded by the Major Professor. The Major Professor largely determines responsibilities for the Research Assistant. As with the TA, satisfactory progress in their graduate program must be maintained in order to retain stipend support (assuming availability of funds by the Major Professor).

Workload

Teaching and Research Assistants who are also full-time graduate students may be assigned responsibilities requiring no more than 50 percent of their time. Normally for TA's, this means service for not more than an average of 20 hours per week including time spent in preparation, classroom and laboratory teaching, grading papers, counseling students, etc. Responsibilities for RA's will vary with the fraction of time for which they are employed, but normally a one half-time appointment should require no more than 20 hours per week of assignable duties, for a .50 (full) TA/RA, or 10 hours per week for a .25 (half) TA/RA. ("Policies Relative to Teaching and Research Assistants") (Univ. Administrative Regulation 5:2)

Additional Employment

In order to preserve the academic focus of graduate students who are on full-time assistantships and have their tuition paid by the University, the Graduate School does not allow for additional UK employment.

A full-time assistantship at UK, whether teaching, research or graduate, is considered 0.50 FTE (full time equivalency) in the employment system, or the equivalent of 20 hours per week on average in any combination of assignments. ("Policies Relative to Teaching and Research Assistants") (Univ. Administrative Regulation 5:2)

In rare circumstances, an exception may be granted. To request such an exception the DGS should fill out an Overload Request Form and send it to the address found on the form. In the event that an exception is granted, the maximum FTE permitted for a graduate student may not exceed 0.7 FTE (28 hours/week).

Graduate Students are not eligible for overload assignments if they:
1. Are in their first term of study
2. Have a cumulative G.P.A. of less than 3.0.
3. Are receiving any fellowship or scholarship which prohibits additional aid

Employment greater than the full-time workload for a graduate student (0.50) may have FICA tax implications for the student.

Persons having UK employment of 0.75 FTE or higher (considered full time UK employee), whether it is from one payroll assignment or total combined assignments, are not eligible for Graduate School fellowships or for Assistantships. The Graduate School reserves the right to rescind any assistantship award if the awardee is found to have 0.75 FTE or higher employment at UK at any time during the award period.

Tuition and Fees
The University of Kentucky sets the tuition and mandatory fee rates for graduate students.
https://www.uky.edu/studentaccount/tuition

Tuition Scholarship Information
https://gradschool.uky.edu/tuition-scholarship-information

Eligibility for tuition scholarships
Students must be enrolled in a graduate program; post-baccalaureate students are not eligible. Graduate Assistants (TAs, RAs, GAs) placed on scholastic probation are not eligible to receive either an in-state or out-of-state tuition scholarship. Students receiving any support from an outside entity, including but not limited to government sponsors and grants that include a Cost of Education allowance or similar, are not eligible for tuition scholarships through the Graduate School. If an individual is readmitted to a doctoral program, and thus requires retroactive enrollment in the 2 credit 767 course for all fall and spring semesters between the semester of readmission and the last semester they had been enrolled in 767, the Graduate School will not provide a tuition scholarship for the out of state portion of tuition for the 2 credits of 767, and the student will be required to pay all tuition/fee costs associated with all of the semesters of retroactive 767 course enrollments. If a student does not perform the work assigned for the Assistantship for the entire duration of the period for that semester stated in the GSAS form, or does not perform it at a level deemed to be satisfactory by the hiring unit, the tuition/fee scholarships associated with the Assistantship are subject to removal, with the student then being responsible for paying these charges. A DGS seeking an exception to this policy should contact the Funding office with a request.

Course exclusions for tuition scholarships
Given the limited amount of tuition scholarship funds, tuition scholarship funds from the Funding office are not permitted for courses taken with an audit (AU) grade type or as pass/fail. Tuition scholarships are also not intended for courses taken by doctoral students in addition to the 2 credit 767 course, or courses not required for the student's graduate degree as indicated in the program's Graduate Bulletin pages. This

policy is enforced for all graduate assistants (TAs, RAs, GAs) and fellowship awardees receiving tuition scholarships through the Funding office. Graduate students should note that they are personally liable for tuition and fee charges associated with any of the above courses. Graduate programs/colleges can also be financially responsible for these tuition costs if they approve any such courses or fail to monitor enrollment of their funded graduate students. This policy is not intended to preclude graduate students from taking remedial courses, both at the graduate and undergraduate level, required by their academic program and DGS. Nor is this policy intended to preclude graduate students from taking courses to complete certificate programs, as long as the major professor, DGS, and Associate Dean for Research and Graduate Studies endorse enrollment in certificate or undergraduate courses. DGSs who wish to request exceptions to the tuition scholarship policy may send an e-mail, copied to their Associate Dean for Research and Graduate Studies (or similar Associate Dean in their college), to the Graduate School's tuition scholarship officer at gsas@email.uky.edu.

Student Recreation Fee (Johnson Center Fee) and Health Fee
All students are charged a mandatory recreation fee each semester. This fee is covered by Graduate School tuition scholarships.

Fellowships - Internal
The following are among the Fellowships available from the Graduate School:
https://gradschool.uky.edu/fellowships-0

Presidential Graduate Fellowship
Graduate programs are invited to nominate candidates for the annual Presidential Fellowship ($20,000, plus a tuition scholarship and student health insurance).

Pharmaceutical Sciences Excellence in Achievement Fellowships
The Graduate Program utilizes block funding provided by the Graduate School for this award. The competitive selection process is based on graduate GPA, quality and progress of the student's research project, presentation and publication record, other achievements and awards, and engagement and leadership in graduate program organizations and activities. The award is generally applied to the student's stipend support plus and additional increase to the stipend for the student.

Fellowships - External
Pharmaceutical Sciences students are strongly encouraged to apply for extramural fellowships. Faculty will assist the students in preparation of these applications. Among the many fellowships available, our students have been particularly successful with applications for the following:

American Foundation for Pharmaceutical Education (www.afpe.org)
Pharmaceutical Research Manufacturers Association (www.phrmafoundation.org)
*National Institutes of Health (*www.nih.gov*)*
*National Science Foundation (*www.nsf.gov*)*

Travel Awards
Peter G. Glavinos Jr. PhD Fall Travel Award
Travel award up to $1,000 (Awarded by the College of Pharmacy)

S. Elizabeth Helton Spring Travel Award
Travel award up to $1,000 (Awarded by the College of Pharmacy)

Dr. Joseph V. Swintosky PhD Travel Scholarship Award
Travel award of $500 (Awarded by the College of Pharmacy)

Pharmaceutical Sciences Graduate Student Program Travel Award
Travel award funded by Graduate School block funding allotment. The amount of the award may vary each fiscal year due to availability of funds. Emails regarding eligibility including seminar attendance requirements are sent to the listserv each semester.

Program Administration
Graduate Faculty
The graduate program faculty consists of members who hold primary appointments in either the Department of Pharmaceutical Sciences or the Department of Pharmacy Practice and Science in the College of Pharmacy and of other faculty members who hold primary appointments in various departments in other Colleges at UK.

The policies and programmatic content of the Pharmaceutical Sciences program are the purview of the graduate faculty members of the program. Any significant change to the program requires a majority vote of those faculty members.

Director of Graduate Studies (DGS)
Major responsibilities include: coordinating applicant recruitment and admissions; advising 1st - year students; administering policies and procedures of the Graduate School and the Pharmaceutical Sciences program, and acting as liaison between the Graduate School and Pharmaceutical Sciences students and faculty.

Graduate Program Committee
The Graduate Program Committee reports to the Graduate Faculty. The Graduate Program Committee is composed of the Director of Graduate Studies, a representative from each of the five tracks, and a graduate student representative. The Pharmaceutical Sciences Department Chair and Pharmacy Practice and Sciences Department Chair serve as ex officio (non-voting) members. The Standard Operating Procedures for the Graduate Program Committee can be found in the [College of Pharmacy Governance Document.](#)

PharmD/MS in Pharmaceutical Sciences (PharmD/MSPHSC)

Overview
The dual Pharm.D. /M.S. in Pharmaceutical Sciences degree is designed to provide training in research and scholarship within a pharmaceutical sciences discipline for students seeking careers that include a re-search component, such as those in the pharmaceutical industry, managed care organizations, state and local health departments, academic healthcare systems, and healthcare colleges. Students must maintain

a 3.0 cumulative GPA in required Pharm.D. coursework in order to be eligible to participate. Students that participate in this program can choose any aspect of research conducted by investigators at the UKCOP across five training tracks: Medicinal, Bioorganic and Computational Chemistry, Pharmaceutical Chemistry and Engineering, Pharmacology and Experimental Therapeutics, Clinical and Experimental Therapeutics, and Pharmaceutical Outcomes and Policy. Students must be admitted and enrolled in the University of Kentucky College of Pharmacy to be considered for this dual degree. Admission is competitive and is based on academic achievement (minimum 3.0/4.0 GPA in required PharmD coursework), research rotation evaluations, a research proposal, and a letter of recommendation from the proposed faculty research mentor. Please refer to the graphic of the timeline below on the website which can be found at https://pharmacy.uky.edu/admission-aid/pharmd-program/dual-degrees/msps-dual-degree.

Onboarding/Application Process

1. MSPS Overview Session (early February PY1). An in-depth session will be organized by the DGS and faculty members who are offering positions during the current recruitment cycle. The session will last for approximately 2 hours and will cover the following topics: program description, program requirements, the attractions and realities of science/research, and the role of research in clinical careers. Faculty offering placement in their research groups will present a brief overview of the projects that are available. Students will then need to take responsibility to communicate with faculty that they are potentially interested in to express interest and to ascertain additional information.

2. Rotation Pool Application (due approx. March 15 PY1). Students who are interested in advancing to post-baccalaureate status and participating in research rotations will apply. The application will include a CV, personal statement highlighting the student's reason for pursuing the program, a letter of recommendation, an unofficial transcript, and an interview. Faculty on the GPC and those who are recruiting during the current cycle will then conduct interviews of the applicants to make decisions on whom to admit to the Rotation Pool.

3. Research Rotations (Spring PY1, summer, and Fall PY2). Students admitted to the Rotation Pool will participate in research-related experiences with faculty who have submitted a project for a dual degree student for the current recruitment cycle. Each experience will last 4-6 weeks and vary according to the type of project and experience desired by both the faculty member and trainee. Students will be able to complete up to 3 rotations. Each student will submit an anticipated rotation schedule to the DGS upon acceptance to the Rotation Pool, and rotations will be conducted within "rotation windows" dates that are communicated by email to students in the rotation pool.

4. Formal MSPS Program Application (due approx. March 15 PY2). Students who have identified a mentor who has agreed to accept them as a student will formally apply to the master's degree program. The GPC will review applications which include the student's transcript (must maintain a minimum 3.0 PharmD GPA to be considered for the program), research rotation evaluations, research proposal, and recommendation letter from the proposed mentor. Faculty mentors will be consulted as needed to assist the GPC in making admissions decisions.

Program Deliverables

1. Submission of a written research proposal for MS application (Spring PY2)
2. Presentation of the background and proposed approach/methods (Summer PY2/3)

3. Submission of a written manuscript to the committee (which can serve as the basis of a thesis, publication, or both) (Spring PY4)
4. Scientific presentation of the project and results to the college, oral masters exam (Spring PY4)

Timeline

PY1 Year

1. Attend the MSPS Overview Session in early spring PY1.
2. Apply to participate in the rotation pool in mid-March PY1.
3. Students admitted to the rotation pool will be instructed to apply to the UK Graduate School for post-bac status prior to enrolling in coursework (generally summer admission for POP interested students and fall admission for non-POP). The application is submitted through the UK Graduate School https://gradschool.uky.edu/admissions. Students who have completed their postbac application should notify the Graduate Program Operations Director (catina@uky.edu). Students who do not hold an awarded bachelor's degree must have at least 90 hours of undergraduate credit hours. An undergraduate grade point average of at least 2.75 on a 4.0 scale and a GPA of at least 3.0 cumulative in required Pharm.D. coursework is required.

Summer between PY1 and PY2 Year

Research rotations—students admitted to the rotation pool will participate in research-related experiences with faculty who have submitted a project for a dual degree student for the current recruitment cycle.

PY2 Year

1. Students should submit the anticipated rotation schedule including the name of the faculty member no later than August 1st. In order to ensure that students complete at least two research rotations before the end of the fall semester, the first rotation should start no later than August 26th to be completed by October 18th. The deadline for a second rotation start date will be October 21st and ending by December 13th. The priority for the PY2 Year is to identify a lab mentor from the Pharmaceutical Sciences Graduate Faculty, who will provide the research home and a research project for the student. Formal MSPS Program Application in March PY2: Students who have identified a mentor who has agreed to accept them as a student will formally apply to the master's degree program. The GPC will review applications which include the student's transcript (must maintain a minimum cumulative 3.0 GPA in required Pharm.D. courses to be considered for the program), research rotation evaluations, research proposal, and recommendation letter from the proposed mentor. Faculty mentors will be consulted as needed to assist the GPC in making admissions decisions. The application will be submitted through the UK Graduate School: https://gradschool.uky.edu/admissions
2. As part of the application to the master's program, the student will be required to submit a written research proposal approved by the faculty mentor. This application will be due in March each year (ex. deadline for spring 2025 is March 3rd for the class of 2027).
3. Attend a meeting at the beginning of the semester with the DGS. The DGS will schedule a meeting at the beginning of the semester with all admitted postbac students to review the requirements for successful admission to the dual degree program.
4. Enroll in a 3-credit overview course (PHS 701 Translational Research in Pharmaceutical Sciences) and additional required courses as communicated by the DGS. At least one course should be completed that is within the research area of focus of the student's project as directed by their committee. Each of the courses are designed to expose the student to the various areas of research within the College of Pharmacy. Research credits are not transferrable from postbac status.

5. Provide DGS with lab rotation summaries. These should be emailed to (catina@uky.edu). Upon completion of each lab rotation, faculty will be provided with student research rotation evaluation forms to complete. Research rotation evaluation forms may be found on page 39 of this handbook.
6. Register for 4 credits of PHS 790 or PPS 790 Research credit for summer research. Faculty mentors will provide a syllabus to the student for the research credit course.

Summer between PY2 and PY3 Year
1. Complete summer research for credit. This will consist of a 4-credit research experience—students will be provided a syllabus for this research experience.
2. Prior to completion of summer research, the student should form a Master's Advisory Committee and schedule a meeting. The committee consists of at least three qualified faculty members and the research mentor from the Pharmaceutical Sciences Graduate Faculty. A faculty member from outside the program is permitted but not required. At least one member of the committee must be a Full Member of the Graduate Faculty.
3. Notify (catina@uky.edu) of the date and time for the committee meeting and a room will be reserved. The advisory committee meeting form should be completed and submitted to the committee and catina@uky.edu prior to the meeting. The research project and plan for progress in the PY3 year should be discussed as well as graduate coursework to be taken during the PY3 Year.
4. Submit a transfer of credit form as directed by the DGS to the Graduate School for eligible graduate credits earned as a postbac student during the PY2 Year.

PY3 Year
1. Under the dual degree program, one PharmD course will count towards graduate credit if a grade of "A" or "B" is earned (PHR 952 Principles of Research and Evidence-Based Medicine in Pharmacy Practice [3 credit hours]).
2. Enroll in additional graduate coursework for credit as recommended by the mentor, advisory committee, and DGS during the PY3 Year.
3. Spending time and making progress in the lab throughout the PY3 Year is critical to completing a master's level research project.
4. Prior to the end of the PY3 Year Spring Semester, an advisory meeting should be scheduled. Notify (catina@uky.edu) of the date and time for the committee meeting and a room will be reserved. The advisory committee meeting form should be completed and submitted the committee and catina@uky.edu prior to the meeting. At this meeting progress on the research project and the plan for 6-week rotations during PY4 Year should be discussed. Dual degree students spend at least one of their 6-week rotations working on their master's research (6 credits). It is recommended that they also spend their "off" rotation also working on their master's research in order to fully develop a master's level research project.

PY4 Year
1. Students will inform catina@uky.edu of the 6-week APPE research rotation dates and instructions will be given for proper registration. Students should register for PHS 790 or PPS 790 research credit in addition to the rotation credits for the Pharm.D. program. The faculty mentor will provide a syllabus to the student for the research credit course.
2. It is recommended that a committee meeting be scheduled for no later than January of the PY4 Year to discuss timelines for the master's exam and due dates for the submission of a written manuscript to the committee (which can serve as the basis of a thesis, publication, or both). Notify catina@uky.edu

of the date and time for the committee meeting and the evaluation forms will be set-up and a room will be reserved. The advisory committee meeting form should be completed and submitted to the committee and catina@uky.edu prior to the meeting.

3. At the beginning of the semester, a date for graduating dual degree student presentations will be determined. The student will give a 25-minute public seminar on the master's research project.

4. The application for a May degree must be submitted prior to the deadline (usually within 5 weeks of the beginning of the semester). An email with deadlines to be met for a May degree will be sent by catina@uky.edu at the beginning of the spring semester.

5. A Final Examination is given to all candidates for master's degrees not later than eight days before the last day of classes of the semester in which the degree is to be awarded. The master's committee serves as the student's examining committee. The request for a final examination must be filed at least two weeks prior to the date of the examination: https://ris.uky.edu/cfdocs/gs/MastersCommittee/Student/Selection_Screen.cfm. Students on scholastic probation are not eligible to sit for the final examination. Class must be in session for the student to sit for the exam. If the candidate fails the final examination, the committee may recommend to the Dean of the Graduate School the conditions under which a second examination may be administered. Insofar as it is practical, the same examining committee gives this examination. In all decisions the majority opinion of the committee prevails. If the committee is evenly divided, the candidate fails. A third examination is not allowed.

6. A written manuscript must be submitted to the committee prior to the Final Examination that can serve as a basis for a thesis, published manuscript, or both. Theses must be prepared in conformity with the instructions published by the Graduate School. Detailed instructions can be found at https://gradschool.uky.edu/thesis-dissertation-preparation. There are very specific deadlines that must be met in order to receive a May degree. These deadlines will be provided in January by catina@uky.edu. Theses submitted by candidates become the physical property of the University of Kentucky. The University protects the authors' rights by placing certain restrictions upon the use of theses. All master's theses must be submitted in electronic format. Instructions are available at http://gradschool.uky.edu/electronic-dissertation-preparation. To view the current collection of Electronic Theses and Dissertations, go to http://uknowledge.uky.edu/gradschool/.

The master's degree requires 30 credits. Two-thirds of these credits must be in graduate coursework (not only research credits).

Miscellaneous

Identification cards and badges

Please refer to the College of Pharmacy Employee Badge and Access Procedure for a UK Student and Medical Center ID. See the Graduate Program Operations Director for assistance with the badge access procedure.

Parking

Graduate students including graduate research assistants and teaching assistants are eligible for certain employee parking permits in addition to student permits. Graduate students are encouraged to explore all options available from UK Transportation Services: https://transportation.uky.edu/

Paid Internships Off Campus

Graduate Students participating in paid internships off campus must first have this internship approved by the academic advisor. A letter from the academic advisor must be submitted for approval by the DGS (send to catina@uky.edu) stating the beginning and ending date of the internship. International students on a visa must consult with the UK International Center months in advance regarding the process to participate in a paid internship off campus. It is the responsibility of the student to understand and comply with the regulations associated with their visa status.

Vacation Leave

Graduate Students are eligible for ten vacation days per year in addition to official UK holidays. This vacation time does not accumulate if not used. Mentors should communicate expectations with the student regarding advance notification required for planning purposes. Teaching assistants must also have the approval of the course instructor and DGS. Vacation leave must not interfere with a teaching assignment. Generally, students are expected to keep a schedule similar to the UK staff calendar (and not the academic calendar) and to be on campus on a continuing basis during regular work hours throughout the year. Students should also be aware that the demands of research protocols or presentations can require work on holidays, weekends or evenings. Absence for a number of days that exceeds the allotted vacation total will potentially result in suspension of stipend payment.

Post Office and Electronic Mail

There are two post offices on campus. One is located in Patterson Office Tower Mezzanine, and the other is located on the ground floor of the Chandler Medical Center Room M63. Hours of operation are Monday through Friday from 7:30 am to 3:30 p.m. https://auxserv.uky.edu/departments/uk-postal-services
All graduate students are assigned a mailbox on the third floor of BPC. Most announcements are made through electronic mail. All graduate students are assigned an e- mail address by the Graduate School upon admission. Students are encouraged to check their email on a daily basis.

Paycheck Statement Distribution

Paycheck statements are available on your myUK. Direct Deposit is required by UK.

Tax Information

W-2 Forms: Assistantship stipends paid through your hiring department to U.S. citizens and international students (who have not signed a tax treaty form 8233 in the payroll department) should receive a W-2 form from the UK payroll department for that assignment.
Student 1098-T Forms: The forms are available on-line via myUK. With the exception of loans, all student awards which are processed through UK's financial aid system, such as fellowships, scholarships, grants, etc., are reported to the IRS. This same information is furnished to students on the 1098-T form. If you have questions, please contact Student Account Services at 859-257-6702 or e-mail taxcredit@lsv.uky.edu.

International students should consult with the Office of International Affairs for information on taxes. https://international.uky.edu/isss/current-students/employment

Laboratory Safety

All graduate students must meet with the Collegiate Laboratory Manager, Safety Specialist Senior (Kristi Moore KRISTI.MOORE@uky.edu ; 859.323.7110; room 325 BPC) prior to beginning work in a research

laboratory. The Collegiate Laboratory Manager facilitates badge access and provides instruction for completing universally required lab safety training. Your lab mentor or lab manager provides safety training required specific to the research conducted in that lab. You must notify the Collegiate Laboratory Manger prior to beginning a new lab rotation.

UK Tobacco-Free Policy

he tobacco-free policy, which prohibits the use of all tobacco products on all grounds and parking areas (traditional cigarettes, e-cigarettes, all vaping devices, chew, pipes, cigars, hookah or waterpipe smoking, snus, snuff, etc.), applies to all areas of the contiguous UK campus in Lexington, indoors and out. https://www.uky.edu/TobaccoFree/UKsTobaccoFreePolicy

Conference Rooms

Conference rooms are available for scheduling Advisory Committee meetings, qualifying exams, etc. Arrangements for their use should be made with the Graduate Program Operations Director.

University Health Service Fee and Student Health Insurance

The Health Fee is one of the mandatory fees assessed to full-time graduate students during the fall and spring semesters. For students with a full-time assistantship, the tuition scholarship includes the mandatory health fee. If a student is less than 9-hours (for example 2-credits of 767 or 757), the health fee is not automatically added. Requests to add the health fee should be made to the Student Billing office. To use University Health Service in the summer, all students must pay the summer health fee or pay on a fee-for-service basis. The health fee does not cover hospitalization, surgical procedures, accident care and any other health care provided outside University Health Service. The University, including University Hospital, assumes no responsibility for a student's medical expenses.
https://www.ukhealthcare.uky.edu/university-health-service/student-health

Health Insurance Coverage for Funded Graduate Students

Health insurance coverage is provided to all enrolled and degree-seeking graduate students with full-time teaching, research, or graduate assistantships, full-time fellowship recipients, or a combination of these positions. The Graduate School Funding Office administers this insurance program. Please review the policy carefully. https://gradschool.uky.edu/health-plan

University of Kentucky College of Pharmacy
Pharmaceutical Sciences Graduate Program

Longitudinal Graduate Student Evaluation Procedure
February 2024

Purpose
The longitudinal evaluation process will provide our graduate student advisors a mechanism to deliver consistent feedback to our student over the course of their graduate training. The Program-level Student Learning Outcomes (PSLO) are based on Core Competencies that were established in 2018. The purpose of the process is to:

> a. Generate data that assesses the success of our program in delivering the training outlined in the Core Competencies. This data is required for programmatic assessment initiatives as directed by the Graduate School and Office of the Provost.

> b. Provide longitudinal performance feedback to trainees.

> c. Serve our holistic, student-centric mission of training through identification of gaps in skills and performance, and assist our trainees in reaching their training goals.

Interpretation of performance and evaluation of competency achievement are subjective and variable across advisors and trainees. Thus, the overarching goal of each review is to foster productive communication and ensure transparency in evaluating progress in relation to individualized expectations. It is not necessary to achieve "competency" in each PSLO, nor is it required to evaluate every PSLO for an individual trainee.

Procedure
1. Major graduate advisors will complete the evaluation at a minimum frequency of once every 6 months after the student is permanently assigned.
2. Part 1 of the evaluation, Performance Characteristics, is designed to providing the student feedback on their underline performance since the previous review.
3. Part 2 of the evaluation, Core Competencies, is designed to assess the accumulation of skills and competencies that builds towards graduation. Each time the evaluation is opened, the progress entered during the previous assessment will be displayed. A list of example evidences are provided for each competency; however, the evaluator is free to interpret each as they choose.
4. Both parts will be completed by both the advisor and the student independently and shared. This will form the basis for a discussion providing the student feedback as to the aspects of their performance and developing skills that are strengths, opportunities for growth, or need improvement.
5. Prior to the annual Advisory Committee meeting, Qualifying Exam, and Dissertation Defense, all committee members will be provided the results of the previous evaluations to allow for committee member input.

Part 1: Performance Characteris2cs

Student and Major Professor complete independently and discuss

Rate the following characteristics of the trainee's performance since the previous evaluation		4 Truly Out-standing	3 Exceeds Expec-ta6ons	2 Meets Expec-ta6ons	1 Needs Im-provement	0 Not applica-ble
Basic Attributes	Engagement, participation					
	Time management, organization, prioritization					
	Work ethic					
	Dependability, accountability					
Academic and Research	Active in reading scientific literature/maintenance and expansion of knowledge base					
	Scientific curiosity					
	Honesty, integrity, responsible research conduct					
Interpersonal	Respect for others/inclusivity/cultural awareness					
	Leadership inside/outside research group					
	Teamwork/works well with research group					
	Interpersonal communication					
Overall	Satisfaction with overall progress toward degree since last eval					
Comments						

Part 2: Core Competencies

Domain 1: Foundational Knowledge					
	Novice	Advanced Beginner	Competent	Proficient	Expert
Competency 1.1: Apply the fundamental concepts related to the development or use of drugs Example Evidences: Engage in developing knowledge base; Develop breadth of knowledge base; Develop knowledge in interfacing areas of pharmaceutical sciences					
Competency 1.2: Apply the skills required to create new knowledge, products, or applications that innovate value Example Evidences: Apply critical thinking skills; Develop and apply problem solving skills; Develop technical skills to carry out research project; Think innovatively in research project and beyond					
Competency 1.3: Apply depth of knowledge to a research focus area in pharmaceutical sciences Example Evidences: Grow depth of knowledge; Develop inquiry of analysis skills; Expand information literacy with regard to research focus; Develop habits for maintaining current knowledge of field					
Domain 2: Research					
Competency 2.1 Develop a scientific premise supported by current evidence that addresses an unmet need Example Evidences: Demonstrate mastery of scientific concepts and literature through written assessment; Verbally defend a thesis; Critically evaluate the findings of others through manuscript review; Identify a gap in knowledge that is associated with a clinical need; Describe a shortcoming of technology that could be improved through innovation					
Competency 2.2 Clearly define a testable hypothesis or concept that is relevant to human health Example Evidences: Identify and refine a scientific or clinical need for value creation; Design, with mentoring, hypotheses for a research project; Develop and defend a research hypothesis and specific aims designed to address it					
Competency 2.3 Implement a strategic approach to address a hypothesis or objective Example Evidences: Design and execute experiments to test specific aims of a project; Write a proposal, legislation, or thesis that describes a strategy to achieve value creation; Utilize technologies and qualitative and quantitative methodologies to test hypotheses; Identify limitations of a research plan and construct alternative approaches to address them					

Competency 2.4 Conduct research in accordance with ethical standards and best practices Example Evidences: Create and maintain a laboratory notebook that is succinct and easy to follow; Identify current ethical issues in research; Attend a seminar or webinar on intellectual property; Utilize good research practices including					
assay validation and use of appropriate controls					
Competency 2.5 Interpret results in order to evaluate their impact Example Evidences: Interpret and analyze data generated in a research project; Integrate findings into the fabric of competing and supporting literature; Advance the scientific field through experimental discovery surrounding the research project; Understand the ramification of findings across the spectrum of pharmaceutical sciences Identify limitations of the research; Evaluate the impact of a new invention or novel process					
Domain 3: Communication					
Competency 3.1 Communicate findings and ideas through scientific writing Example Evidences: Compose and publish original research manuscripts; Develop research proposals for a planned investigation; Write an IRB proposal based upon a research project; Write and publish a review paper; Compose and submit research grants and other grant proposals; Write or critique other forms of scientific writing such as business plans, NDAs, contracts, and patents					
Competency 3.2 Facilitate learning for individuals or groups Example Evidences: Teach a didactic lecture to a large group of students or trainees; Facilitate small group learning in an undergraduate, professional, or graduate course; Teach research technique or skill to other individuals Instruct a patient or patient group in an aspect of pharmaceutical or clinical care; Mentor a trainee within the research group; Establish and maintain good mentorship practices in an academic or industrial setting					
Competency 3.3 Disseminate findings and ideas to multiple audience types Example Evidences: Present individual results at research group meetings; Present elevator-type talk to lay or mixed audiences Present findings in a research seminar; Present findings at national meetings in poster or podium form; Disseminate research findings through various forms of media					
Competency 3.4 Utilize interpersonal communication to foster productive interactions Example Evidences: Collaborate with other to address research hypotheses; Form a team in order to solve a problem that requires multiple levels of expertise; Work with others to create a new process, program, or organization that fills an unmet need					
Domain 4: Leadership and Management					

Competency 4.1 Significantly contribute to the achievements of a team Example Evidences: Communicate and collaborate professionally on tasks or projects with individuals with different expertise; Participate in a service learning project; Attend a legislative advocacy event or webinar; Create a startup company by working as part of a team; Utilize teamwork to accomplish tasks that require multiple individuals					
Competency 4.2 Think innovatively when presented with a task or problem Example Evidences: Write and publish a paper outlining how technology might affect your field; Identify a new solution to a					
research problem through the application of alternative approaches; Create an action plan that innovatively applies qualitative and quantitative methodologies; Create a SWOT (strengths, weaknesses, opportunities, and threats) analysis and use it to address an issue; Execute a plan that creates value in the form of a new business, product, process, or organization					
Competency 4.3 Develop leadership skills that promote collaborative achievement Example Evidences: Actively lead a team project within the research group; Delegate and direct collaborators to execute a set of experiments; Inspire a group of graduate students as part of a student, college, university, or national organization; Give group feedback on a project; Lead through roles and activities in student or professional organizations					
Competency 4.4 Apply principles of management to achieve a goal Example Evidences: Effectively plan and execute a research project, managing obstacles and alternatives as you progress; Organize and oversee the progress of individuals within the research group; Direct a community service or engagement project; Support and facilitate achievement of an organization by serving as an officer; Create a business plan that provides a strategy for a project or group; Strategically utilize the expertise of others to overcome obstacles in a project					
Domain 5: Professional and Personal development					
Competency 5.1 Exhibit behaviors that are consistent with the trust given to professionals by society Example Evidences: Identify ethical dilemmas in research; Present or discuss ethical principles that are applied in the conduct of research and professional practice; Participate in a mock trial, audit, or focus group; Demonstrate altruism, integrity, trustworthiness, flexibility, and respect in all interactions; Display preparation, initiative, and accountability consistent with a commitment to excellence					

Competency 5.2 Utilize self-awareness to engage in the development of life skills needed to achieve career goals Example Evidences: Create an Individual Development Plan (IDP) that includes goals related to personal and professional development; Undergo self-assessment process and use findings to direct skill development; Develop an iterative plan to guide career decisions; Identify personal and professional shortcomings and develop plans to improve upon them; Understand and embrace protective factors that support personal wellbeing; Engage in activities to improve emotional intelligence and interpersonal skills					
Competency 5.3 Practice cultural humility in professional settings Example Evidences: Participate in cultural events within the community; Give a presentation on how your research will reduce health disparities; Create a reflection on a potential cultural conflict in research; Participate in unconscious bias training and recognize and avoid biases and stereotyping; Demonstrate an attitude that is inclusive and respectful of different cultures and values; Develop relationships, value diverse opinions, and understand strengths and weaknesses that promote teamwork; Evaluate how differences in cultural diversity may influence professional etiquette and research practices					
Competency 5.4 Implement self-directed practices of personal and professional advocacy Example Evidences: Attend and actively engage at workshops, conferences, and seminars; Network with others within a specific scientific or clinical focus area; Create a portfolio of work that demonstrates achievements and a specific skill set; Engage in career development activities that paves the way for career advancement					

Evaluation Forms

Student Annual Advisory Committee Meeting Report

Part 1 - To Be Completed By The Student (distribute to committee at least 2 days prior to meeting)

Student Name:_____ Dissertation Chair: _____ Year in the program:____

Date:_____ Date of last advisory committee meeting:_____

Please provide a summary of your accomplishments since the last meeting (use attachments if necessary)

Coursework completed / to complete:

TA performance:

National/Regional Meetings Attended:

Manuscripts Submitted/Published:

Posters/Presentations Given:

Awards:

Other Accomplishments of Note:

Student Annual Advisory Committee Meeting Report

Part 2 – To Be Completed By Each Advisory Committee Members: (1=unacceptable; 2=needs improvement; 3 =the "average" performance of a successful student in our program; 4=above average; 5=outstanding)

Student Performance	1	2	3	4	5	NA
Enthusiasm						
Work Ethic						
Scientific Curiosity						
Ability to Think Independently						
Understanding of the Research Problem						
Competency With Research Methods						
Knowledge of the Scientific Literature						
Written Communication Skills						
Oral Communication Skills						
Evidence of Progress in Dissertation Research						

Brief Narrative Statement of the Student's Performance

Quality of Dissertation Research to date:

Outstanding _____Acceptable _____ Unacceptable_____

_____   _____

University of Kentucky – Pharmaceutical Sciences Graduate Program
Seminar Performance Evaluation

Student: _____ **Major Professor:** _____ **Track:** _____

Date: _____

Seminar Title: _____

Please check each box where appropriate:

	Outstanding *(Consistently exceeds expectations.)*	Satisfactory *(Meets Expectations)*	Needs Improvement *(Marginal performance that falls below expectations.)*	Unsatisfactory *(Falls unacceptably below expectations.)*	N/A
Presentation of material and preparedness	☐ Student demonstrated outstanding command of knowledge in material presented. Appropriate length of time for topic.	☐ Student demonstrated command of knowledge appropriate for their level. Appropriate length of time for topic.	☐ Student command of knowledge slightly below appropriate for their level. Some misunderstanding evident. Inappropriate length of time for topic (too long or too short)	☐ Very little preparation if any. Student did not understand material presented. Inappropriate length of time for topic (too long or too short)	☐
Critical Thinking	☐ Student demonstrated application of critical thought or scientific reasoning beyond expected student level during presentation. Able to field questions thoughtfully.	☐ Student demonstrated application of critical thought or scientific reasoning during presentation. Able to field questions.	☐ Student demonstrated some application of critical thought or scientific reasoning but not at the level expected. Unable to field some questions asked.	☐ Student did not demonstrate any application of critical thought or scientific reasoning during presentation. Unable to answer any questions.	☐
Communications	☐ Presentation very organized and logical. Information was clearly explained. Student spoke effectively and used appropriate body language.	☐ Presentation organized and logical. Information explained at level expected from a graduate student. Student spoke effectively and used appropriate body language.	☐ Presentation needed improvement with organization. Information not explained at level expected from a graduate student. Improvement needed with public speaking. Showed nervousness in speech and body language.	☐ Presentation was not organized. Illogical flow. Poor public speaking. Unprofessional language (too many 'ums', 'you knows') Poor presence.	☐
Audio/Visual (If applicable)	☐ Slides, handouts, or other presentation materials of highest quality and appropriate amount. Enhanced presentation.	☐ Slides, handouts, or other presentation materials appropriate. Enhanced or did not distract presentation.	☐ Slides, handouts, or other presentation materials, either not enough or too much. Did not enhance presentation or distracting.	☐ Slides, handouts, or other presentation materials ill prepared, hastily completed. Distracting from presentation. Or no A/V prepared at all when necessary.	☐

Comments:

Faculty Signature: _____ **Date**: _____

University of Kentucky – Pharmaceutical Sciences Graduate Program
Research Rotation Performance Evaluation

Student: _____ Rotation #_____

Faculty Name (please print): _____ Track:_____

Rotation dates: From: _____ To: _____ **Approximate # of hours/week in lab: _____**

Please check each box where appropriate:

Work Ethic & Contribution	Outstanding *(Consistently exceeds expectations.)*	Satisfactory *(Meets Expectations)*	Needs Improvement *(Marginal performance that falls below expectations.)*	Unsatisfactory *(Falls unacceptably below expectations.)*	N/A
Spirit of inquiry	☐ Routinely asks appropriate questions of mentor and other lab peers. Routinely shows genuine interest in the lab and its processes.	☐ Asks questions of mentor when available, routinely asks appropriate questions of lab peers.	☐ Occasionally seeks out mentor or lab peers to ask questions. Has a minimal understanding of projects.	☐ Speaks to the mentor only when addressed. Does not ask questions of lab peers.	☐
Collaboration	☐ Has appropriate knowledge base to routinely contribute to project planning.	☐ Has appropriate understanding of the projects but not a deep enough understanding to contribute to planning experiments.	☐ Has a basic understanding of the project but lacks depth, makes some errors in the lab due to miscommunication.	☐ Makes mistakes due to lack of understanding of the procedures and project and failure to communicate.	☐
Timeliness	☐ Consistently punctual and reported for all days & appointments assigned. Respects the time of others. Always keeps mentor informed of needed time off or incidences of tardiness.	☐ Satisfactorily reported to work and appointments on time. Respects the time of others. Always keeps mentor informed of needed time off or incidences of tardiness.	☐ Inconsistent attendance or punctuality for work or other appointments.	☐ Unexpectable number of absences. Consistently tardy for work or other appointments.	☐
Work Ability	☐ Consistently works to ensure assignments are completed. Able to work independently.	☐ Works with minimal supervision. Assignments completed as expected. Consistently works to improve.	☐ Requires assistance and moderate supervision. Assignments partially completed.	☐ Requires constant assistance and supervision. Unable to work independently. Assignments incomplete.	☐

Was the student's performance discussed with him/her at mid-rotation?   ☐ YES   ☐ NO

Does this student exemplify the quality of work you expect of a graduate student working-full time in your lab? *(if No, please elaborate)*   ☐ YES   ☐ NO

Would you accept this person as your graduate student?
(If Yes, with reservations, or No, please elaborate)   ☐ Yes   ☐ Yes with reservations.   ☐ No

Comments:

Faculty Signature: _____ **Date**: _____

University of Kentucky – Pharmaceutical Sciences Graduate Program
Qualifying Examination Performance Evaluation (Written Component)

Student: _____**Major Professor:** _____ **Track:** _____

Advisory Committee Member (please print): _____

Please check each box where appropriate:

	Outstanding *(Consistently exceeds expectations.)*	**Satisfactory** *(Meets Expectations)*	**Needs Improvement** *Marginal performance that falls below expectations.)*	**Unsatisfactory** *(Falls unacceptably below expectations.)*
Content Area	☐ Demonstrates mastery of knowledge base relevant to content area.	☐ Has appropriate understanding of content with few areas identified in need of improvement. Very few errors.	☐ Understanding of content falls slightly below expectations. Several errors were made, and multiple areas identified that are in need of improvement.	☐ Has little to no understanding of content area. Many content errors.
Organization	☐ Highly logical thought process. Coherent and well-developed paragraphs and transitions. Well-organized content.	☐ Logical and developed thought process. Appropriate paragraph structure and transitions. Minor organizational issues.	☐ Logical yet underdeveloped thought process. Organization of paragraph structure in need of improvement.	☐ Underdeveloped and illogical thought process. Poor organization of paragraph structure with no transition.
Writing Style	☐ No Grammatical or spelling errors. Writing Style very clear and fluid. Precise syntax. Appropriate tone with regard to content and audience.	☐ Few to no grammatical errors. Overall clear syntax and style. Appropriate tone with regard to content and audience.	☐ Occasional grammatical errors. Some awkwardness with syntax and style. Tone at times inappropriate with regard to content and audience.	☐ Many grammatical errors and problems with syntax. Writing style awkward and distracting. Inappropriate tone with regard to content and audience.

Does this student exemplify the quality of work you expect of a graduate student?   ☐   YES   ☐   NO
(if No, please elaborate)

       Please Check one:

             ☐ ***Pass*** *(student should continue to the oral portion of the QE)*
             ☐ ***Fail***

Comments:

Faculty Evaluator: _____ **Date**: _____

University of Kentucky – Pharmaceutical Sciences Graduate Program
Qualifying Examination Performance Evaluation (Oral Component)

Student: _____ Major Professor:_____

Track:_____

Advisory Committee Member (please print): _____

Please check each box where appropriate:

	Outstanding *(Consistently exceeds expectations.)*	Satisfactory *(Meets Expectations)*	Needs Improvement *(Marginal performance that falls below expectations.)*	Unsatisfactory *(Falls unacceptably below expectations.)*
Presentation of material and preparedness	☐ Student demonstrated outstanding command of knowledge in material discussed.	☐ Student demonstrated command of knowledge appropriate and expected for their level of training.	☐ Student command of knowledge slightly below appropriate for their level. Some misunderstanding evident.	☐ Very little preparation if any. Student did not understand material discussed.
Critical Thinking	☐ Student demonstrated application of critical thought or scientific reasoning beyond expected student level during discussion. Very organized and logical thought process. Able to field questions thoughtfully.	☐ Student demonstrated application of critical thought or scientific reasoning during discussion. Somewhat organized and logical thought process. Able to field questions.	☐ Student demonstrated some application of critical thought or scientific reasoning but not at the level expected. Unable to field some questions asked. Student at times seemed unable to organize thoughts.	☐ Student did not demonstrate any application of critical thought or scientific reasoning during discussion. Unable to answer most questions. Unable to organize thoughts.
Oral Communication	☐ Student spoke effectively and used appropriate body language. Articulated thoughts very effectively.	☐ Student spoke effectively and used appropriate body language. Able to articulate thoughts.	☐ Improvement needed with public speaking. Showed nervousness in speech and body language. At times had difficulty articulating thoughts.	☐ Poor public speaking. Unprofessional language (too many 'ums', 'you knows') Poor presence. Unable to articulate thoughts.

Does this student exemplify the quality of work you expect of a graduate student?   ☐   YES   ☐   NO
(if No, please elaborate)

Please Check one:

☐ *Pass with Confidence (No reservations. Exceeds expectations in all areas)*
☐ *Pass (please elaborate on any areas that may need improvement)*
☐ *Fail*

Comments:

Faculty Signature: _____ **Date**: _____

University of Kentucky – Pharmaceutical Sciences Graduate Program
Dissertation Defense Performance Evaluation

Student: _____**Mentor:**_____

Advisory Committee Member (please print): _____   Track:_____

Please check each box where appropriate:

	Outstanding *(Consistently exceeds expectations.)*	**Satisfactory** *(Meets Expectations)*	**Needs Improvement** *(Marginal performance that falls below expectations.)*	**Unsatisfactory** *(Falls unacceptably below expectations.)*
Presentation of material and preparedness	☐Student demonstrated outstanding command of knowledge in material discussed.	☐ Student demonstrated command of knowledge appropriate and expected for their level of training.	☐ Student command of knowledge slightly below appropriate for their level. Some misunderstanding evident.	☐Very little preparation if any. Student did not understand material discussed.
Critical Thinking	☐Student demonstrated application of critical thought or scientific reasoning beyond expected student level during discussion. Very organized and logical thought process. Able to field questions thoughtfully.	☐Student demonstrated application of critical thought or scientific reasoning during discussion. Somewhat organized and logical thought process. Able to field questions.	☐Student demonstrated some application of critical thought or scientific reasoning but not at the level expected. Unable to field some questions asked. Student at times seemed unable to organize thoughts.	☐Student did not demonstrate any application of critical thought or scientific reasoning during discussion. Unable to answer most questions. Unable to organize thoughts.
Oral Communication	☐Student spoke effectively and used appropriate body language. Articulated thoughts very effectively.	☐Student spoke effectively and used appropriate body language. Able to articulate thoughts.	☐Improvement needed with public speaking. Showed nervousness in speech and body language. At times had difficulty articulating thoughts.	☐Poor public speaking. Unprofessional language (too many 'ums', 'you knows') Poor presence. Unable to articulate thoughts.

Does this student exemplify the quality of work you expect of a graduating student?   ☐ YES   ☐ NO
(if No, please elaborate)

      Please Check one:

          ☐ *Pass With High Recognition*
          ☐ *Pass*
          ☐ *Fail*

Comments:

Faculty Signature: _____   **Date**: _____