



**DEPARTMENT OF PHARMACEUTICAL CHEMISTRY
LAWRENCE PROGRAM - GRADUATE STUDENT HANDBOOK**



Updated July 2021

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PHARMACEUTICAL CHEMISTRY FACULTY, STAFF, AND ADDITIONAL CONTACTS

Faculty	Location*
Audus, Kenneth Professor and Former Dean	174 SL
Berkland, Cory Solon E. Summerfield Distinguished Professor	320G MRB
Forrest, Laird Professor	150 SL
Hageman, Michael Valentino J. Stella Distinguished Professor	274 SL
Hagen, Anna Lecturer, Education Program Coordinator	–
Krise, Jeff Associate Professor GPEN Director	256 SL
Lunte, Susan M. Ralph N. Adams Distinguished Professor	220E MRB
Picking, Wendy Professor	320F MRB
Picking, William Foundation Distinguished Professor	320B MRB
Schöneich, Christian Takeru Higuchi Distinguished Professor Department Chair	272 SL
Siahaan, Teruna Aya and Takeru Higuchi Distinguished Professor Associate Department Chair	258 SL
Stobaugh, John F. Professor and Associate Dean Graduate Director	266 SL & 2050A P
Tolbert, Thomas Associate Professor Department Safety Officer	250 SL
Volkin, David Ronald T. Borchardt Distinguished Professor	200B MRB
Wang, Michael Associate Professor	252 SL

Emeritus Faculty	Location*
Borchardt, Ronald T. Distinguished Professor Emeritus	201 SL
Middaugh, C. Russell Distinguished Professor Emeritus	152 SL
Schowen, Richard L. Distinguished Professor Emeritus	–
Stella, Valentino University Distinguished Professor Emeritus	280 SL
Wilson, George Distinguished Professor Emeritus	–

Staff

Brooks, Nicole Senior Administrative Associate	182 SL
Hall, Karen Accountant	182 SL
Huslig, Michelle Program Coordinator	182A SL

Additional Contacts

Faucher, André, (dagon1@ku.edu) Facility Manager, Higuchi Biosciences	107 ML
Russell, Mike, (mjrussell@ku.edu) Director, Environmental Health and Safety (EHS)	MRB
Smith, Ann, (annsmith@ku.edu) Facilities Manager, MRB	MRB
Steffan, Patti, (psteffan@ku.edu) Administrative Associate, School of Pharmacy Assistant to the Associate Dean of Research and Graduate Affairs	P

*** Locations**

ML: McCollum Laboratories
 MRB: Multidisciplinary Research Building
 P: Pharmacy Building
 SL: Simons Laboratories

WEBSITES REFERENCED IN THE HANDBOOK

University of Kansas Websites

Department of Pharmaceutical Chemistry: <https://pharmchem.ku.edu/>

Environment, Health and Safety (EHS): <http://ehs.ku.edu/>

Graduate Studies: <http://graduate.ku.edu/>

- Requirements for the MS Degree: <https://policy.ku.edu/graduate-studies/ma-requirements>
- Academic catalog, Graduate Studies: <https://catalog.ku.edu/graduate-studies/#regulationstext>
 - o Scroll down to “Good Academic Standing” for grade requirements
 - o Scroll down to “Full-time Enrollment for Graduate Students” for GRA credit hours

International Support Services (ISS): <https://iss.ku.edu/>

School of Pharmacy: <https://pharmacy.ku.edu/>

University of Kansas Policies on Academic Misconduct

School of Pharmacy: <https://policy.ku.edu/pharmacy/academic-professional-scholarly-conduct>

University of Kansas (See Article II, Section 6): <https://policy.ku.edu/governance/USRR>

External Links

Globalization of Pharmaceutics Education Network (GPEN):
<https://gpenconference.com/>

Monash University, Pharmacy and Pharmaceutical Sciences:
<https://www.monash.edu/pharm>

1. OVERVIEW OF THE GRADUATE PH.D. PROGRAM BASED IN LAWRENCE, KS

The Department of Pharmaceutical Chemistry comprises nationally and internationally recognized faculty specializing in diverse areas of research including physical pharmacy, biopharmaceutics, cellular and molecular pharmacokinetics, nanotechnology, vaccines, macromolecular pharmaceutics, pharmaceutical biotechnology, and analytical sciences (bioanalysis and pharmaceutical analysis).

The past successes of the Department, which have allowed it to gain an international reputation as a leader in the broad discipline of Pharmaceutical Chemistry, have rested on the shoulders of former graduate students. Therefore, the Department continues to emphasize the recruiting and training of graduate students as its top priority, and it has designed the graduate program to prepare students for productive careers in the private sector, academia, and government agencies.

The required courses provide a comprehensive background in the foundation scientific fields noted above. In addition, students are encouraged to explore not only the courses offered within Pharmaceutical Chemistry but also those offered by other departments, including Medicinal Chemistry, Chemistry, Chemical & Petroleum Engineering, Molecular Biosciences, and others that match the students' research topics and interests. This broad selection allows students to tailor their education to mesh with their specific areas of scientific research and interest.

A. The Ph.D. Degree

The Department of Pharmaceutical Chemistry conducts a Ph.D. program for the training of future scientists intending to pursue careers in the private, government, and academic sectors. Accordingly, efforts are directed towards the recruitment of students whose goal is the attainment of the Ph.D. degree. All activities required of the Ph.D. students (coursework, exams, research reviews, presentations, and participation in departmental events) are delineated in the following sections.

B. The M.S. Degree

While the Department does not recruit on-site M.S. students, a student may occasionally elect to terminate graduate studies at the M.S. level or may be counseled towards this option by the faculty or by the student's M.S. thesis committee. In these cases, the student must have satisfactorily completed most of the core courses and sufficient research to support an M.S. thesis and oral defense.

2. SELECTION OF A RESEARCH ADVISOR

Each student must report to a research advisor who is responsible for assigning a dissertation research project and assessing progress in the research-based courses, PHCH 899 (Masters Thesis) and PHCH 999 (Doctoral Dissertation). The research advisor also serves as the chairperson of the student's Oral Comprehensive Examination Committee, Dissertation Committee, and Doctoral Dissertation Defense Committee.

Upon entering the program, students will be assigned to an initial (temporary) laboratory placement for the fall semester. During this initial semester, students are required to attend a series of presentations in which faculty members describe their research interests and discuss projects conducted in their laboratories. These presentations will serve as the basis for the selection of a permanent research advisor.

Before making their final selection, students are encouraged to meet with the faculty members that they are interested in working with. Students are asked to prioritize their faculty selections as first, second, and third choices using the [Advisor Selection Form](#) (Appendix IV). As often as possible, students will be assigned to a research advisor according to their expressed choices. Because of limitations in funding and space, it may not always be possible to honor the first choice, but every effort will be made to accommodate a student's interests.

During the initial fall semester, students who wish to gain first-hand exposure to more than one laboratory may opt to do a rotation in several laboratories prior to making their final selection. Interested students should discuss their proposed rotations with the faculty who would be involved and the Graduate Director.

Students have the freedom to change advisors at any time while in the program. A student should not hesitate to make such a change if it is in his or her best interest and should not be concerned with offending the former advisor. Typically, a change in advisor can be beneficial to the student for many reasons; however, it should be recognized that this change might extend the time required to complete dissertation research suitable for the Ph.D. degree.

3. COURSEWORK REQUIREMENTS

The faculty collectively decided on a series of Foundation Courses that are of fundamental importance for all students regardless of their area of specialization. These courses must be successfully completed by all students enrolled in the program prior to taking the Foundation Exam. Students are also required to complete at least one elective course that ideally is related to their research interests. The University has an additional requirement for two research skills courses (referred to as Research Skills and Responsible Scholarship, or RS2) that must be completed prior to taking the Oral Comprehensive Exam.

In general, students take these courses during their first two years in the program. The two exams are typically held in the second half of the second year: the Foundation Exam in January and the Oral Comprehensive Exam in May.

A. Entering Background Course Requirements

It is expected that entering students meet the following requirements: (1) mathematics capabilities equivalent to a standard two-semester sequence in calculus undertaken by STEM discipline majors, (2) knowledge equivalent to one semester of physical chemistry, including an introduction to classical thermodynamics, and (3) a course in pharmacokinetics.

The following are specific University of Kansas courses that would address these expectations:

- MATH 125 - Calculus I (4 hours) and MATH 126 - Calculus II (4 hours) Or MATH 115 - Calculus I (3 hours) and MATH 116 - Calculus II (3 hours)
- CHEM 510 - Biological Physical Chemistry (3 hours)
- PHCH 625 - Pharmacokinetics (3 hours)

On occasion, students are admitted to the graduate program without the necessary coursework, and the Graduate Director will work with those students to recommend additional courses that will need to be completed before taking the Foundation Exam.

B. Required Courses

All students participating in the Pharmaceutical Chemistry Ph.D. program are required to take a series of eight Foundation Courses (described below), which are designed to ensure that graduates maintain the department's long-standing reputation for strength in the physical-chemical and pharmaceutical biosciences as they relate to modern research in Pharmaceutical Chemistry. **Students must achieve an overall satisfactory performance to be eligible to take the Foundation Exam**, which is offered in January after completion of the third semester of the program. These courses are offered every year and must be completed during the first three semesters of the program.

FIRST YEAR, FALL SEMESTER

1. CHEM 740 Principles of Organic Reactions (3 credits)

This course presents the structural features and driving forces that control the course of chemical reactions. Topics include acid and base properties of functional groups; qualitative aspects of strain, steric, inductive, resonance, and solvent effects on reactivity; stereochemistry and conformations; an introduction to orbital symmetry control; basic thermodynamic and kinetic concepts; and an overview of some important classes of mechanisms.

2. PHCH 730 Pharmacokinetics I (3 credits)*

This course presents the basic concepts of biopharmaceutics and pharmacokinetics, including classical compartmental models, clearance concepts, vascular and extravascular dosing, and the use of pharmacokinetics in dosage regimen design and adjustment.

**Graduate students who have completed a similar course at a prior institution are not required to take PHCH 730; however, students will be responsible for the conceptual content of this course as part of the Foundation Exam.*

3. PHCH 862 Physical Chemistry of Solutions, Solids and Surfaces (3 credits)

This course is concerned with the equilibrium of molecular species interacting in aqueous solutions, at interfaces of multi-phasic systems, and in condensed and crystalline phases. Problem setup and solving techniques are discussed in detail. Additional concepts include mixed aqueous-organic systems, salt complex formation, gas/liquid equilibrium, pH solubility effects, heterogeneous systems, colloidal systems, and enzymatic systems, including amorphous and crystalline solid phases.

FIRST YEAR, SPRING SEMESTER

4. CHEM 840 Physical Organic Chemistry (3 credits)

An examination of the methods used to probe the mechanisms of organic reactions and of the chemistry of some important reactive intermediates. Topics include isotope effects, kinetics, linear free energy relationships, solvent effects, a continuing discussion of orbital symmetry, rearrangements, carbocations, carbanions, carbenes, radicals, excited states, and strained molecules.

5. PHCH 920 Chemical Kinetics (2 credits)

This course presents the principles of kinetic data analysis as applied to problems in pharmaceutical chemistry. Topics include the setup and solution of rate equations related to chemical reactions; simplifications and approximations in complex equation systems; isotope, solvent and salt rate effects; and diffusion and activation controlled reactions.

6. PHCH 972 Mechanisms of Drug Deterioration and Stabilization (3 credits)

This course emphasizes the principles of physical organic chemistry as relevant to mechanisms and chemical kinetics of drug degradation and the rational development of approaches to drug stabilization. Topics include a survey of commonly encountered degradation reactions, pH-rate profiles, kinetic isotope effects, and publications detailing the degradation of various drug substances and oxidative and photochemical mediated drug degradation processes.

SECOND YEAR, FALL SEMESTER

7. PHCH 864 Pharmaceutical Analysis (4 credits)

This course presents aspects of analytical chemistry that are used on a routine basis by scientists in various areas of biomedical research and drug discovery and development. Emphasis will be on chromatography, electrophoresis, and mass spectrometry, which reflect the preeminent position of these techniques in the field of pharmaceutical and biomedical analysis. Additional topics include the statistics used to validate analytical methods for the determination of drugs in bulk forms, pharmaceutical formulations, biological samples, and other relevant media.

8. PHCH 870 Advanced Pharmaceutical Biotechnology (4 credits)

This course emphasizes the important aspects of recombinant proteins and oligonucleotides as pharmaceutical agents. Topics include biophysical methods used to analyze protein structure and stability; methods of large-scale protein production, isolation, and purification; potential chemical and physical degradation processes and strategies for circumventing these degradations; and procedures for handling regulatory guidelines for biotechnology products.

C. Research Skill (RS2) Requirement

All doctoral students must meet the requirement for Research Skills and Responsible Scholarship (RS2) before proceeding to the Oral Comprehensive Exam. **Two RS2 courses are required:** the first is a course in **Responsible Conduct of Research** (fulfilled by PHCH 801), and the second will serve to obtain research skills pertinent to the doctoral level of research in their field. The research skills component of this requirement may be fulfilled by successfully completing an acceptable skills development course (typically from the list in Section D).

1. PHCH 801 Issues of Scientific Integrity (1 credit, fall semester of even years)

Lectures and discussion on ethical issues in the conduct of a scientific career, with emphasis on practical topics of special importance in molecular-level research in the chemical, biological, and pharmaceutical sciences. Topics include the nature of ethics, the scientist in the laboratory, and the scientist as author, grantee, reviewer, employer/employee, teacher/student, and citizen. Discussions will focus on case histories. **(Partially fulfills the institutional RS2 requirement.)**

D. Suggested Electives (to be taken at the first opportunity)

Graduate students are required to take **one elective course** in addition to the courses required to fulfill the RS2 requirements. The elective course may be selected from the additional courses offered by the Department of Pharmaceutical Chemistry (see below) or it can be from any other department on campus with prior approval from the student's research advisor. Alternatively, the student may request that a course not listed in these groups be recognized as a Pharmaceutical Chemistry elective, with the requirement that any such course should be at the 600 level or higher. **A single elective course cannot be used to fulfill both the elective requirement and the second RS2 requirement.**

1. PHCH 705 Writing and Communicating Science for Graduate Students (3 credits, spring semester)

Communicating research proposals and experimental findings is a critical skill for scientists. Successful communication depends on clarity of thought and careful use of language. Lectures and discussions will help prepare students to successfully communicate in both academic and industry settings. The main projects are a research proposal and an oral presentation intended to meet the requirements of the Oral Comprehensive Exam.

2. PHCH 715 Drug Delivery (3 credits, spring semester)

Drug Delivery surveys the latest technology for delivering pharmaceuticals and biologicals to reduce side effects and enhance drug efficacy. The course will review the latest research in this area and examine more classical delivery methods. A qualitative and quantitative understanding of drug delivery practice and theory is the goal.

3. PHCH 718 Physical Chemical Principles of Solution Dosage Forms (3 credits, spring semester)

Physical properties of pharmaceutical solutions and their physiological compatibility will be discussed (intermolecular interactions, thermodynamics, colligative properties, isotonicity, pH, buffers and drug solubility). Kinetics and mechanisms of drug degradation in solution will also be introduced.

4. PHCH 725 Cellular & Molecular Pharmaceutics (3 credits, spring semester)

Fundamentals and advanced concepts in cell biology and the molecular interactions responsible for cell functions, homeostasis, and disease will be presented. Current analytical methods for examining cells and their molecular components will be discussed. Emphasis will be placed on the chemical and physical properties of individual proteins, nucleic acids, and lipids and their assembly into cellular and subcellular structures. (Same as C&PE 725.)

5. PHCH 816 Careers in the Biomedical Sciences (1 credit, fall and spring semester) Required for Biotechnology Training Grant fellows.

Advanced course examining career options open to Ph.D. scientists in the biomedical sciences, and providing preparation for the different career paths. Extensive student/faculty interaction is emphasized utilizing lectures, class discussion of assigned reading, and oral presentation. (Same as BIOL 816, CHEM 816, and MDCM 816).

6. PHCH 860 Principles and Practice of Chemical Biology (3 credits, fall semester)

A survey of topics investigated by chemical biology methods, including transcription and translation, cell signaling, genetic and genomics, biochemical pathways, macromolecular structure, and the biosynthesis of peptides, carbohydrates, natural products, and nucleic acids. Concepts of thermodynamics and kinetics, bioconjugations and bioorthogonal chemistry will also be presented. (Same as BIOL 860, CHEM 860, and MDCM 860.)

7. C&PE 715 Characterization Analysis of Solid Materials (1-4 credits, occasional offering)

This course will provide students with a framework for understanding diverse solid products of industrial significance and the variety of physical characterization techniques required to advance the science and practical applications of these solids. A classification of characterization methodologies will be presented. For each category, students will learn the underlying physical phenomena that enable individual characterization techniques. With that foundation, students will conduct assignments demonstrating not only fundamental understanding but the insight to solve problems, which require a characterization plan incorporating complementary methodologies. The course will be suitable for students from a number of different disciplines, and content may be customized somewhat to student fields of study.

E. Curriculum Sequence Summary

First Year*

Fall Semester

CHEM 740 (3 hrs) Organic Chemistry
PHCH 730 (3 hrs) Pharmacokinetics¹
PHCH 801 (1 hr) Ethics²
PHCH 862 (3 hrs) Phys Chem SSS

Spring Semester

CHEM 840 (3 hrs) Phys Org Chem
PHCH 920 (2 hrs) Kinetics
PHCH 972 (3 hrs) Drug Stability

*Pharmacy degree holders should also take a course in Physical Chemistry if not previously taken. Refer to Section A, Entering Background Course Requirements.

¹Not required of Pharmacy degree holders who have had a similar course; however, students will be responsible for content at this level on the Foundation Exam.

²Should be taken at the first opportunity; offered in the fall semester of even calendar years (partially fulfills the institutional RS2 requirement).

Second Year

Fall Semester

PHCH 870 (4 hrs) Biotechnology

PHCH 864 (4 hrs) Analysis

Spring Semester

PHCH 705 (3 hrs) Writing in Science³

Elective

³Not a required course; however, it is useful for the preparation of the research proposal. May be used to fulfill the RS2 requirement

F. Seminar Requirements

All students are required to attend Pharmaceutical Chemistry Seminar throughout their program of study in order to remain in good standing. This seminar series includes talks given by visiting speakers and candidates for positions, as well as student presentations.

Seminar is normally scheduled on Tuesdays from 3:30 to 5:00 pm in Simons Laboratories Auditorium (Rm 100). Changes to this schedule may occur in special situations, such as for visiting speakers, interviews, or additional special seminars. All students are expected to attend all of these events.

Students are required to present at least one seminar prior to their doctoral dissertation defense, and this presentation is typically scheduled during their third year in the program. The seminar is based on the progress achieved in their research project, and students should discuss their seminar presentations with their advisors. The development of communication skills is considered to be an important aspect of graduate training. Accordingly, the ability to present seminars clearly and effectively is an important aspect of a student's training.

G. Course Progress Form

To ensure that they have completed all of the course requirements, students should continuously update the **Department of Pharmaceutical Chemistry Course Progress Form**. This form is provided for the students' use and is not required to be formally submitted at any point (see Section 5 and Appendix III). Questions on this form or on the coursework should be directed to the Program Coordinator.

4. MILESTONE EXAMINATIONS

Students take two milestone examinations in the second half of their second year in the program: the Foundation Exam, based on coursework, is typically scheduled in January, and the Oral Comprehensive Exam, based on their proposed research, is typically scheduled in May. Both exams include written and oral components.

A. Foundation Exam

Each year, the faculty meet to discuss the progress of students who have completed the first three semesters of graduate study. Students who have successfully completed the required courses are eligible to take the Foundation Exam, which is offered in January of each year and includes both written and oral components.

The written exam is based on the contents of three publications selected by the faculty that broadly address areas covered in the Foundation Courses: biopharmaceutics and pharmacokinetics, pharmaceutical equilibria, chemical kinetics, drug stability, pharmaceutical analysis, and pharmaceutical biotechnology. Each of the three publications covers a combination of at least two areas. For example, the first paper could cover biopharmaceutics/pharmacokinetics and pharmaceutical biotechnology, the second paper could cover equilibria and pharmaceutical analysis, and the third paper could cover chemical kinetics and drug stability. Each paper is selected by a group of faculty members in the respective area. After all faculty members agree on the three papers, the written questions for each paper are developed by the faculty group that selected that paper. After all faculty members agree with the questions, the papers and the questions are distributed to the students.

The written exam questions cover inquiries such as (a) the scientific rationale and premise of the investigation, (b) attributes and/or limitations of the results, (c) possible ways to improve the investigation, and (d) where applicable, how the publication relates to the principles addressed in the required coursework. Students are given seven days to provide answers to the questions posed for each publication. The exam is an open book exam: various resources may be used, but students should not seek help from any other individuals. The faculty group that provided the questions grades the written answers.

After the written examination, each student undertakes an **oral exam** by a committee that is composed of three Pharmaceutical Chemistry faculty members (including the student's advisor). The oral exam represents an elaboration on the written exam questions as deemed necessary by the committee. The oral exam is not intended to examine research methods, but rather to examine the basic science knowledge of the student from the completed coursework. If a student's performance is judged to be unsatisfactory by the faculty committee, one of three options will be recommended for the student: repeat the exam in May, terminate with an M.S. degree (subject to meeting the requirements delineated in Section 4C), or be dismissed from the graduate program.

Students who are required to retake the Foundation Exam (typically in May) should use the intervening time to self-remediate in areas identified as problematic. After a satisfactory performance in May, they will be eligible to undertake the Oral Comprehensive Examination in August.

The results of the Foundation Examination will be documented by the faculty using the "[Foundation Exam Assessment Guide](#)", which is provided for reference in Appendix III.

B. Oral Comprehensive Exam

Prior to undertaking the Oral Comprehensive Exam, students are required to complete the **RS2** requirements (Section 3C).

The exam is typically conducted at the conclusion of four fall and spring semesters in the graduate program, during the week immediately following the annual May University graduation. It consists of a series of oral questions that focus primarily upon the student's research presentation and a written prospectus describing the student's proposed research. The examination chairperson will be the student's advisor; in addition, the committee will consist of three other faculty members from the department (randomly assigned) and one committee member from another department (the Graduate Studies representative, selected by the student and advisor). The name and affiliation of the outside member of this committee should be provided to the Program Coordinator prior to the exam. For questions on who qualifies as a Graduate Studies representative, consult the Program Coordinator.

The prospectus should include a cover page with the title of the research, the student's name, the research advisor's name, and a list of the oral exam committee members. A copy should be provided to all of the committee members **at least two weeks in advance of the exam**. The prospectus should have a maximum of 9 double-spaced pages of text, and should be organized as follows:

- a. **Specific Aims (1 page):** Provide the broad, long-term objectives and what the specific proposed research is intended to accomplish. State the hypotheses to be tested, and/or technique or operation to be improved.
- b. **Background and Significance (4 pages):** Describe the background leading to the proposed research, critically evaluate existing knowledge and limitations of existing approaches and/or technologies, and specifically identify the lack of knowledge and/or limitations which the project is intended to address. State concisely the importance and the scientific and/or technological relevance of the investigation described in the proposal by relating the specific aims to the broad, long-term objectives.
- c. **Approach (4 pages):** Describe what you have accomplished (preliminary results) and include a very brief description of the methods used. Relate these accomplishments back to your specific aims and how these accomplishments relate to either proving or disproving your hypotheses and/or contribute to the

technique or process that you are seeking to advance. Provide a brief outline of your future work based on results to date.

In preparing the document, students may seek some guidance from their research advisors with respect to the project outline and goals; however, the written portion is to be solely the student's product. Guidance on writing will be provided in PHCH 705, and students may also consult their graduate student peers on writing and grammar issues.

The document should be double-spaced with margins of one inch on the top, bottom, and both sides. The recommended font size is 11 or 12 pts for most standard fonts (e.g. Times New Roman or Arial).

The purpose of the oral exam is to examine a student's ability to formulate a sound research proposal and to be knowledgeable about all aspects of the selected topic. Students who pass this exam will be granted a non-thesis M.S. degree and will then be considered as candidates for the Ph.D. degree. Students who do not successfully pass this exam will be asked to terminate the program with the M.S. degree (see requirements in Section 4C).

The results of the Oral Comprehensive Exam will be documented by the faculty using the [Student Evaluation and Scoring Guide - M.S. Thesis Final Defense and Ph.D. Oral Comprehensive Exam and Dissertation Defense Assessment Guide](#), which is provided for reference in Appendix III.

C. Requirements for Students Receiving the M.S. Degree

Candidates for the M.S. degree must satisfy the general requirements of the Graduate School (see link in introductory pages) as well as one of the following options:

1. Students who are continuing on toward the Ph.D. degree will receive a non-thesis M.S. degree upon successfully passing the Oral Comprehensive Exam. To officially receive this degree, the student must submit an application for degree. Refer to the Graduate Studies website (link in introductory pages) or contact the Department's Program Coordinator for information.
2. Students who leave the program with the M.S. degree must have satisfactorily completed most of the required courses and sufficient research to support an M.S. thesis and oral defense. Under extenuating circumstances, students may prepare an extensive literature review of a specific subject approved by an M.S. evaluation committee and defend it in an oral examination.

The result of the oral presentation will be documented by the faculty using the [Student Evaluation and Scoring Guide - M.S. Thesis Final Defense and Ph.D. Oral Comprehensive Exam and Dissertation Defense Assessment Guide](#), which is provided for reference in Appendix III.

5. PERFORMANCE REVIEWS & POLICIES

A. Pre-Foundation Exam Reviews

January Review

First-year students

Each student is required to meet (~10 minutes) with the faculty just prior to the start of the spring semester (typically the second week of January). The purpose is to review the student's progress in coursework and discuss the direction of the student's research project. During these meetings, students are highly encouraged to express any concerns they may have with any aspect of the program.

Second-year students

Second-year students who have successfully completed the prescribed first three semesters of coursework are eligible to take the Foundation Exam in mid-January. During the meeting (~10 minutes), the faculty will review the students' progress in graduate coursework to confirm eligibility for the Foundation Exam. Further discussion will focus on the students' plans to complete RS2 requirements and elective coursework to determine their eligibility to undertake the Oral Comprehensive Exam in May. Note that both RS2 requirements must be completed prior to the Oral Comprehensive Exam.

Fall Retreat

During the fall break (typically a Monday-Tuesday period in mid-October), the department holds an annual retreat. Attendance and participation is mandatory for all students.

First-year students

In addition to attending the retreat, since first-year students are not required to present their research, they are generally asked to assist the office staff with the logistics of the event, such as the poster session set up and take down.

Second-year and further advanced students

Students are expected to prepare a poster presentation that documents progress on their research project at every Fall Retreat until they complete their degree. Approximately one week prior to the retreat, an electronic file of the poster presentation should be submitted to the Program Coordinator for distribution to faculty selected by the Department who are responsible for reviewing the student posters and providing feedback using the [Department of Pharmaceutical Chemistry Annual Assessment Form](#) (provided for reference in Appendix III). The reviews are collected by the Program Coordinator and will subsequently be shared with the student's research advisor for review and discussion with the student. Copies of the reviews are to remain in the student's departmental file. Submission instructions and deadlines will be provided by the Program Coordinator well in advance of the poster session.

A small group of students will be asked to present their research as an oral presentation during the session that includes the invited speaker. These students will not also be required to prepare a poster.

B. Post-Oral Comprehensive Exam Reviews

After successful completion of the Oral Comprehensive Exam, students are charged with selecting a Dissertation Committee. The committee shall include four faculty members in the department (including the research advisor) and one faculty member from an outside department. Depending on the student's research project, additional faculty external to the Lawrence campus or to the University may be added to the committee. Over the next few years, students will schedule periodic Dissertation Committee meetings to present the results of their research and discuss their progress. During this period, students will also complete all elective requirements.

C. Required Academic Performance

Graduate students are expected to receive a grade of B or better in all courses taken. A grade of C or lower is considered unsatisfactory. To remain in good standing academically, graduate students should receive only A or B grades for each class taken. According to standards described by the Graduate School (see link in introductory pages), the student must maintain an overall GPA ≥ 3.0 at all times.

In the event that a student receives one or more final course grades of C or lower, resulting in a cumulative GPA of less than 3.0, the student is automatically placed on probation by the Graduate School. The Graduate School requires that the student's cumulative GPA be raised to 3.0 by the end of the following semester of enrollment in order for the student to be removed from probation. The faculty will deal with any deviations from this scenario on a case-by-case basis.

D. Research Performance

Students' performance in the laboratory is monitored by their research advisor. Before they pass the Oral Comprehensive Exam, students will register for an appropriate number of credit hours in PHCH 899 (Master's Thesis) with their research advisor. After they pass the Oral Comprehensive Exam, students will enroll in PHCH 999 (Doctoral Dissertation) credit hours with their research advisor. In both cases, the number of hours of enrollment depends on whether the student is taking other courses and how many hours of research the student has completed since the Oral Comprehensive Exam. (See Section 6 for details.) Enrollment shall always be such that the student is continuously enrolled as a full time student. Master's Thesis credit hours are graded on the following basis: S, satisfactory; U, unsatisfactory; I, incomplete; WG, withheld grade, and Doctoral Dissertation credit hours are graded with letter grades.

It is in the best interest of students to aggressively pursue laboratory research so that they can rapidly and continually achieve high-quality results. However, it is understandable that research progress is not predictable and that delays do happen, even for the most motivated student. Nonetheless, it is the Department's responsibility to set deadlines to make sure that projects do not continue unproductively for extended periods of time.

E. Doctoral Dissertation Preparation and Defense

Students should schedule a Dissertation Committee Meeting no later than the beginning of their fifth year, and these are generally held in August or September. During this meeting, students should present an outline that describes their remaining experimental work and provides an anticipated timeframe for completion of the research as well as a projected dissertation defense date. The Department's goal is for students to complete the program within approximately five years.

Upon the conclusion of experimental activities, students will devote full time to the preparation of their doctoral dissertation. The dissertation must comply with the required guidelines according to Graduate Studies (see link in introductory pages). For additional information, the student may confer with the Department's Program Coordinator. The Department's Program Coordinator should be notified a minimum of 14 days prior to the student's planned dissertation defense to ensure that the necessary pre-graduation checks and administrative paperwork can be completed prior to the defense.

The **Doctoral Dissertation Defense Committee** will consist of the research advisor (committee chairperson), three other Department faculty members, and one external committee member. Please note that this committee should include the same individuals that have been serving on the student's Dissertation Committee, which was constituted after the Oral Comprehensive Exam, except under extenuating circumstances. Through discussion with the research advisor and the Doctoral Dissertation Defense Committee, a mutually agreed-upon date will be chosen for the defense, and the student should immediately provide this information to the Department's Program Coordinator.

F. Graduate Learner Outcomes - Dissertation Evaluation

The University of Kansas has instituted a policy for the evaluation of all doctoral dissertations, and the basic science departments of the School of Pharmacy have adopted common evaluation criteria in order to satisfy this policy. Students should become familiar with these criteria, which are listed on the form referenced below, early in their graduate careers so that they can strive for the best possible evaluation of their dissertation. The results of the doctoral dissertation defense will be documented by the faculty using the [Student Evaluation and Scoring Guide - Ph.D. Oral Comprehensive Exam and Dissertation Defense in Pharmaceutical Chemistry](#), which is provided for reference in Appendix III.

In summary, it is the goal of the faculty that all students successfully defend their dissertation within approximately five years. Students who have performed exceptionally in coursework, made significant intellectual contributions in their research, developed independence and displayed scientific maturity, and have prepared a dissertation of high quality during this timeframe will be considered as outstanding performers and may be considered for "Honors" by the examination committee at the conclusion of their dissertation defense.

6. ENROLLMENT GUIDELINES (IMPORTANT - MUST READ)

A. Definitions Regarding Graduate Student Status

All students in the department must meet enrollment requirements that classify them as “Full-Time Enrolled”. The total number of credit hours each student is required to enroll in each semester to meet this “Full-Time” status is based on their “status” within the department.

Students in the department who are not receiving financial aid from any source outside the Department are considered Graduate Research Assistants (GRAs).

Students are not considered GRAs if they receive any funding from an outside source; this includes Trainee appointments on any Training Grant and all non-university based fellowships (e.g., PhRMA Fellows). Any student who receives a foreign government fellowship cannot be considered a GRA.

B. GRA Appointments

All department GRA appointments are for 50% time. To be considered full-time enrolled, the student must enroll in a minimum of 6 credits for each of the spring and fall semesters and in a minimum of 3 credits in the summer. Prior to taking the Oral Comprehensive Exam, students need not enroll in PHCH 899 (Master’s Thesis) unless they need additional credits to meet the full-time credit requirements. After successfully passing the Oral Comprehensive Exam, all remaining course requirements are to be completed and students will need to enroll in at least one credit hour of PHCH 999 (Doctoral Dissertation) each semester.

If, after 18 credit hours of post-comprehensive enrollment, students have not completed their research and successfully defended their dissertation, the Department will submit a petition on the student’s behalf to decrease their required minimum enrollment each semester to one credit and still be considered enrolled full time. It is imperative that this petition be approved by Graduate Studies before students reduce their enrollment below the minimum requirements described above. The number of hours of enrollment in PHCH 899 and PHCH 999 must be determined by the candidate’s research advisor and must reflect as accurately as possible the candidate’s demands on faculty time and university facilities.

Additional details can be found in the University policy on GRA requirements (see link in introductory pages). For clarification of student status and for specific enrollment information, please contact the Program Coordinator for guidance.

C. Any Student Not Qualified as a GRA

All non-GRA students, to be considered full-time, must enroll in a minimum of 9 credits for each of the spring and fall semesters and a minimum of 6 credits in the summer. Prior to taking the Oral Comprehensive Exam, students need not enroll in PHCH 899 (Master’s

Thesis) unless they need additional credits to meet the full-time credit requirements. After successfully passing the Oral Comprehensive Exam, all remaining course requirements are to be completed, and students will need to enroll in at least one credit hour of PHCH 999 (Doctoral Dissertation) each semester.

If, after 18 credit hours of post-comprehensive enrollment, students have not completed their research and successfully defended their dissertation, the Department will submit a petition on the student's behalf to decrease their required minimum enrollment each semester to one credit and still be considered enrolled full time. It is imperative that this petition be approved by Graduate Studies before students reduce their enrollment below the minimum requirements described above. The number of hours of enrollment in PHCH 899 and PHCH 999 must be determined by the candidate's research advisor and must reflect as accurately as possible the candidate's demands on faculty time and university facilities.

Additional details can be found in the University policy on GRA requirements (see link in introductory pages). For clarification of student status and for specific enrollment information, please contact the Program Coordinator for guidance.

D. Late Enrollment

Students who do not enroll for classes prior to the start of each semester will be responsible for any fees incurred. Students not enrolled by the first day of classes also risk not being classified as student employees of the university and thus will have their paychecks taxed in a higher tax bracket. It is impossible for the department to reverse these tax withholdings after they have been deducted from your paychecks. The student's paycheck will continue to be taxed as a non-student worker until appropriate enrollment levels have been met. International students who are not enrolled by the first day of classes will be in violation of their visa restrictions and risk losing their GRA position and all associated funding. (See Appendix I.)

7. INTERNSHIPS AND INTERNATIONAL STUDY OPPORTUNITIES

Per individual interest, students in the program are encouraged to participate in an internship after discussion with their research advisor. Participants in these programs have generally found the experiences to be extremely beneficial to their overall experience at the University of Kansas.

Listed below are two of the potential internship and intersearch programs available to students within the program.

- **The Takeru Higuchi and Nigel Manning Intersearch Program**

This program allows students to conduct a portion of their research at the Faculty of Pharmacy and Pharmaceutical Sciences, Monash University, located in Melbourne, Australia (see link in introductory pages). Ideally, the students select a surrogate advisor who specializes in an area of research outside that of their primary advisor, thus providing more breadth to their overall research project. There are no strict guidelines regarding the length of time for the experience; however, it has generally ranged from a few months to a year.

- **Genentech Outstanding Student Award and Internship**

The Outstanding Student Award (OSA) was founded in Pharmaceutical Technical Development (PTD) at Genentech to recognize students who excelled in disciplines related to the field of biotechnology at selected schools. The selected student from each school, based on their passion for biotech and high scholastic achievement, is awarded a guaranteed 3-month summer internship at the Genentech South San Francisco headquarters and a monetary scholarship (if internship is accepted). Application announcements will be sent out by the Program Coordinator.

8. ADDITIONAL DEPARTMENTAL POLICIES AND GUIDELINES

A. Outside Student Employment

Students in the department receive a very competitive stipend compared to those of our peer institutions. It is only fair that the faculty expect hard work and dedication in return. In addition, to make acceptable progress, it is essential that students focus 100% of their efforts on their coursework and research projects. Outside employment not only takes away from time to study for classes and perform research in the lab, but it also represents an additional obligation that interferes with the ability of students to concentrate on their projects. Therefore, **outside employment is highly discouraged.**

B. Scientific Meetings

Scientific meeting attendance is not to be taken for granted but must be earned as a result of research efforts. In general, sufficient research progress should be in hand to support a scientific presentation, and students should present a polished abstract to their research advisors at least four weeks prior to any abstract submission deadline. Moreover, attendance at scientific meetings is considered an educational, work-related activity; as such, individuals should plan to arrive and leave within the specified period of the meeting and attend a significant proportion of the sessions offered.

C. Vacations and Holidays

Each student is entitled to two weeks of vacation per year plus the holidays determined by the state. Spring break, fall break, the period between the fall and spring semesters, and the summer months between the spring and fall semesters are not considered as vacation or holiday periods. Unless they are using a portion of these periods as part of their two weeks of vacation, students should be aggressively working on their research at those times. Because of potential interruptions in the planning, conduct, and interpretation of laboratory experiments, **students should explicitly discuss any planned absences with their research advisors and follow the policy established by those advisors.**

D. Safety Regulations

Students are required to visit the Environmental Health and Safety (EHS) website (see link in introductory pages) and are responsible for all content on that website that pertains to the type of research they plan to conduct (no exceptions). **Before students begin work in the laboratory, it is essential that they visit the EHS website and arrange for the proper training.**

EHS provides various on-line courses that are to be completed prior to undertaking laboratory activities and that typically require refreshing every two years. The details of

these requirements are typically disseminated in each semester in the seminar series. Beyond the general EHS courses, special training is required for students planning to work with radioisotopes, highly infectious biological materials, lasers, etc. In addition, **before students ship anything, they should go to the EHS website and contact the appropriate person regarding special procedures.** Ignorance of the safety information included on the website is not a valid excuse for making errors that could jeopardize the safety of the student or others. In addition, failure to adhere to these safety guidelines can result in very expensive fines that could be charged directly to the department.

For questions on policies or procedures, students should contact the Department Safety Officer. For questions about training, courses, or safety certificates and their renewals, they should contact the Department Senior Administrative Associate. The EHS Director can serve as an additional resource for questions on safety protocols or for more complex topics.

E. Academic and Scholarly Misconduct

Any student involved in academic or scholarly misconduct will be subjected to disciplinary action or termination from the program. For official institutional definitions, policies, and procedures, refer to the policies on the websites of the School of Pharmacy and the University of Kansas (links provided in the introductory pages).

F. Special Policies for International Students

International Support Services (ISS) has the responsibility to report to the Immigration and Naturalization Services (INS) that international students have enrolled each semester. Please read the guidelines in Appendix I for additional information.

International students will be responsible for an International Student Service fee, which cannot be paid by the department.

G. Student Participation in Departmental Activities

Students have traditionally done an outstanding job in coordinating or helping with a variety of departmental activities ranging from small events such as ice-cream socials to big events such as Globalization of Pharmaceuticals Education Network (GPEN) meetings. Regardless of the size of the event, student participation is highly valued by the departmental faculty, and it is important that all students share coordination and execution of all events to ensure an equitable distribution of student involvement and efforts. A partial list of such activities is provided below:

1. Recruiting: Assisting the Graduate Director and student leaders with the process of recruiting new graduate students.

2. **Company Visits:** Students who have passed the Oral Comprehensive Exam are expected to participate in interviews with industry representatives during their visits to the department.
3. **Summer Undergraduate Research Program (URP):** Graduate students should actively participate in the training of URP students and attend all of their presentations throughout the program.
4. **GPEN:** Senior students are strongly encouraged to apply for and participate in the GPEN meeting that is conducted every two years (see Appendix II).

H. Equipment and Supplies

It is expected that all equipment will be treated with respect, and it is the student's responsibility to report all malfunctions of shared departmental equipment to the Senior Administrative Associate, the Facility Manager, or the owner if it belongs to a specific lab. Our goal is to ensure that the equipment is restored to proper function—not to assess blame. Students should always sign log-books (if available) when using equipment and always ask for permission before using any instrument that does not belong to their group. Likewise, students should never take or borrow reagents or supplies from another laboratory without first getting appropriate permission.

9. DEPARTMENTAL SERVICES

A. Ordering

Ordering of research supplies, chemicals, etc. should be coordinated through your research advisor and should follow the most current procedures prescribed at the University of Kansas. Assistance with ordering special items, coordinating repairs at external sites, etc. will be provided by the Senior Administrative Associate (182 Simons Laboratories). **NO** orders are to be called in or authorized by individuals without prior approval from your research advisor and/or the Senior Administrative Associate (this includes in-town purchases, e.g., KU Bookstore, Westlake Hardware).

B. Copiers/MultiFunction Device (MFD) & Stationary Supplies

The copy machine (MFD) is located in 182 Simons Laboratories. This machine can be used as scanner or a fax as well. Documents that are scanned using the MFD will be automatically sent to the email inbox of the person logged into the machine. It is also possible to use a USB drive to print documents on the MFD. Please contact either the Senior Administrative Associate or the Program Coordinator for assistance when using the MFD. The departmental copier should **not be used** for making copies of dissertations.

Stationery supplies found in the copier room of 182 Simons should not be taken for personal or lab use without prior approval. Stationery supplies for labs should be ordered in the same way as all other lab supplies.

C. Laboratory Shipments

Shipments are received in the hallway adjacent to the loading dock in Simons Laboratories. See the Facilities Manager for Higuchi Biosciences for assistance and with any questions. Dry ice can be obtained from the first floor of Simons Laboratories in the hallway outside McCollum Laboratories 107.

D. Facility Access

Students have access to buildings in the School of Pharmacy Complex by using their KU ID Card, and keys are no longer issued to students. Students are NOT to share or loan out their KU ID Cards to fellow students or to any other individual trying to access University buildings. Students are also asked NOT to allow entrance into any building for anyone else. If a student is approached and asked to open any door, please contact the Facility Manager immediately for assistance.

APPENDIX I – IMPORTANT INFORMATION FOR INTERNATIONAL STUDENTS

A. Orientation/"No Show"

New international students MUST attend the university's You @ KU Orientation hosted by International Student Services (ISS) and participate in all necessary check-ins across various campus offices. Failure to report to ISS could result in the student being reported to the Immigration and Naturalization Service (INS) as a "No Show."

B. Mandatory Full-Time Enrollment

International students are required to continuously maintain full-time enrollment throughout the whole semester for their entire time in the program. If an international student drops below full time without approval from ISS, the University is required to report this to the INS. Please be sure to discuss any enrollment changes prior to dropping any course after the first day of each semester. For more information, please contact ISS for assistance.

C. Total Withdrawal from the University

If an international student needs to withdraw completely from the University, the student should notify ISS immediately and prior to dropping any courses. ISS will be able to assist with the appropriate paperwork and procedures necessary to ensure the student is not violating any immigration laws.

D. Travel Outside the US During Your Studies

Prior to traveling outside of the US for any reason, the student must contact ISS to ensure that all their immigration documents are up to date and to ensure that all necessary requirements are met. It is also imperative that any student traveling anticipates the possibility of additional security checks or other delays in returning to the US. With this in mind, students should plan to return from breaks and or vacations several days prior to the start of any semester to ensure that delays do not cause the student to miss class or delay any research activities.

E. Grades of Incomplete/Pass-Fail/Credit-No Credit

International students should not take a grade of "Incomplete" in courses that are needed to meet the full-time enrollment requirement. For immigration purposes, receiving an "Incomplete" grade in hours needed for full-time enrollment would have the same effect as withdrawing from the course. The student would then have violated legal status and the University would be required to report the student as under-enrolled. The same is true for a grade of "NC" (no credit). Students may count credit/no-credit courses toward full-time enrollment only if they earn credit ("CR") for the course. NOTE: grades of "P" and "F" or "S" and "U" do count toward full-time enrollment.

F. Reporting the Completion Date of all Degree Requirements

ISS is required to report the date that a student completes all requirements for a degree. INS does not consider the date a degree was conferred or the date of a graduation ceremony, so ISS will need to know the specific date the department considers the student to have completed all degree requirements. INS also requires an estimated date of completion for some types of work permission. Be sure to discuss your completion date with ISS when scheduling your Final Defense Exam.

APPENDIX II – GPEN

Globalization of Pharmaceuticals Education Network (GPEN), Inc.

The Department of Pharmaceutical Chemistry at The University of Kansas (Lawrence, KS) founded GPEN, Inc. in 1996. This was accomplished via cooperation with several educational institutions in Europe and Asia. GPEN, Inc. was created because pharmaceutical and biotechnology companies, which hire the graduates of these educational institutions, had become highly globalized. Therefore, the founders of GPEN, Inc. felt that graduate students and postdoctoral fellows being trained at their institutions needed increased exposure to science and culture at an international level.

GPEN, Inc. was created for the sole purpose of fostering and facilitating international scientific exchange in the following areas of the pharmaceutical sciences:

- physical pharmacy
- bioanalysis
- animal and human biopharmaceutics, pharmacokinetics, pharmacodynamics, and pharmacogenomics
- cellular and molecular biopharmaceutics
- drug delivery
- drug targeting
- pharmaceutical biotechnology
- pharmaceutical engineering
- materials science
- computational and modeling approaches to drug formulation and delivery

Educational institutions holding membership in GPEN, Inc. have demonstrated research excellence in one or more of these areas of the pharmaceutical sciences. In addition, these institutions have a proven commitment to the training of predoctoral students and postdoctoral fellows for careers in universities, government institutions, and pharmaceutical and biotechnology companies.

GPEN, Inc. specifically sponsors biannual meetings designed to foster and facilitate international scientific exchange in the pharmaceutical sciences.

GPEN, Inc. works closely with host institutions in the organization of international meetings of the faculty, graduate students, and postdoctoral fellows from the participating educational institutions. These meetings include two days of scientific presentations by graduate students and postdoctoral fellows and one day of short courses taught by the participating faculty. Selected industry representatives are invited as observers.

For up-to-date information, member institutions, and sites of upcoming meetings, refer to the GPEN website (see link in introductory pages)

APPENDIX III – EVALUATION FORMS

The various forms used to track and evaluate a graduate student's progress in all aspects of the graduate program are provided in this appendix. Some forms are to be completed and maintained by the student and others are to be completed by the faculty, and these responsibilities are noted throughout the handbook.

Assessment Form Used by the Students:

It is the responsibility of the students to continuously monitor their progress in the program, and the [Department of Pharmaceutical Chemistry Course Progress Form](#) is provided to assist with this task. If any questions arise, please contact the Department's Program Coordinator to discuss completed courses and requirements that still need to be met.

Exam & Assessment Forms Used by the Department Faculty (provided here as a reference only):

- Foundation Exam Assessment Guide
- Department of Pharmaceutical Chemistry Annual Assessment
- Student Evaluation and Scoring Guide - M.S. Thesis Final Defense and Ph.D. Oral Comprehensive Exam and Dissertation Defense Assessment Guide

Department of Pharmaceutical Chemistry Course Progress Form

Student Name _____

1. Entering Coursework Requirements

Course Name	Institution	Date	Grade
Pharmacokinetics			
Physical Chemistry			
Math (Calculus)			

2. Core Courses

Course Name	Date	Grade
CHEM 740 Principles of Organic Reactions		
CHEM 840 Physical Organic Chemistry		
PHCH 730 Pharmacokinetics		
PHCH 862 Physical Chemistry of Solutions, Solids and Surfaces		
PHCH 870 Advanced Pharmaceutical Biotechnology		
PHCH 864 Pharmaceutical Analysis		
PHCH 920 Chemical Kinetics		
PHCH 972 Mechanisms of Drug Deterioration and Stabilization		

3. Research Skill Requirements*

Course Name	Date	Grade
PHCH 801 Issues in Scientific Integrity		

*two required

4. Electives*

Course Name	Date	Grade

*one required

Foundation Exam Assessment Guide

Student name: _____

Date: _____

Criteria	Unacceptable	Acceptable	Very Good	Outstanding
1. Biotechnology, Biopharmaceutics and Pharmacokinetics: Understands important facets of recombinant proteins, oligonucleotides and vaccines as pharmaceutical agents and understands PK concepts related to basic modeling, drug absorption, distribution and clearance, including associated quantitative relationships				
2. Equilibria and Analysis: Understands relevant physical chemistry of solutions and solids, principles of equilibria as applicable to pharmaceutical dosage forms and drug delivery and understands the basic principles of separation science and mass spectrometry as applied to problems in the pharmaceutical sciences				
3. Chemical Kinetics and Stability: Understands the principles and mathematics required for the kinetic analysis of chemical reactions and how to apply the principles of physical organic chemistry to the study of drug degradation from a kinetic and mechanistic perspective				
4. Critical Thinking: Responded thoughtfully, fully, and clearly to questions				

Overall Assessment

Performance Ratings for the Foundation Examination

Does NOT PASS Exam _____

PASSES Exam _____

Overall Foundation Knowledge:

Does not meet expectations _____

Meets expectations _____

Exceeds expectations _____

Committee Members: _____

Academic Advisor Signature: _____

Graduate Advisor Signature: _____

Department of Pharmaceutical Chemistry
Annual Assessment

Reviewer's Name: _____

Date: _____

Student Name: _____

Poster Presentation Evaluation Notes

(Please note critical issues impeding progress with the student's research or with the poster presentation)

Student Evaluation and Scoring Guide - M.S. Thesis Final Defense and Ph.D. Oral Comprehensive Exam and Dissertation Defense Assessment Guide

Student name: _____

Date: _____

Criteria	Unacceptable	Acceptable	Very Good	Outstanding
1. Problem Definition: States the research hypothesis and understands gap in the knowledge				
2. Background: Demonstrates sound knowledge of the literature and of prior work on the specific research problem				
3. Impact of Proposed Research: Explains the significance of the research and its value in advancing knowledge within the area of study and significance to improving human health				
4. Approach: Used appropriate and state-of-the-art research methods to test the hypothesis, and can explain the principles behind the methods and their limitations				
5. Results: Data was appropriately analyzed and interpreted. Figures were clear and complete, and indicate appropriate statistical analysis				
6. Discussion: Connects the results with prior research in the field in a detailed and scholarly manner				
7. Quality of Written Communication: Writes clearly and professionally with minimal technical errors				
8. Quality of Oral Communication: Presents clearly and professionally with well-designed slides				
9. Critical Thinking: Responds thoughtfully, fully, and clearly to questions				

Overall Assessment

Performance Ratings for the Foundation Examination

Does NOT PASS Exam _____

PASSES Exam _____

Overall, my rating of this Ph.D. dissertation defense is:

Does not meet expectations _____

Meets expectations _____

Exceeds expectations _____

Committee Chair Signature: _____

Grad Studies Representative Signature: _____

Additional Committee Members: _____

APPENDIX IV – ADVISOR SELECTION FORM

Return this form to the Program Coordinator

Students will be notified of lab assignment decisions shortly after the next departmental faculty meeting is held

Faculty Members*	<u>Advisor Preference</u>
Cory Berkland Laird Forrest Michael Hageman Jeff Krise Susan Lunte William Picking Wendy Picking Christian Schöneich Teruna Siahaan Thomas Tolbert David Volkin Michael Wang	1st Choice _____ 2nd Choice _____ 3rd Choice _____

*Please Note: It is possible that some of the listed faculty members are currently not taking any new students in their lab. Typically, this would be announced during their presentation; however, please confirm in person with each faculty member that he or she is taking new students prior to finalizing your choices.

Student Name: _____

Signature: _____

Date: _____

APPENDIX V – ACKNOWLEDGEMENT

Acknowledgement of Understanding and Acceptance of Policies & Obligations of the Department of Pharmaceutical Chemistry

Incoming graduate students should sign this form and return it to the Program Coordinator

By signing below, I attest to have read and understood the contents of this handbook. Please be aware that the contents of the handbook are subject to change, and students will be notified accordingly.

Name (printed): _____

Date: _____

Signature: _____