GRADUATE STUDENT POLICIES AND PROCEDURES

DEPARTMENT OF PHARMACOLOGY AND PHYSIOLOGY

SAINT LOUIS UNIVERSITY SCHOOL OF MEDICINE

IMPORTANT CONTACTS

For all Associate Dean signatures on university documents contact the **Associate Dean for Graduate and Postdoctoral Affairs** – Dr. Brittany Hollister (brittany.hollister@health.slu.edu)

For questions regarding, registration, health insurance, and assistantships, contact Bryan Gerau (bryan.gerau@health.slu.edu).

For questions regarding the preliminary qualifying examination, contact Andy Lechner, Ph.D. (andy.lechner@health.slu.edu).

For questions regarding MyIDP, contact Ian De Vera, Ph.D. (ian.devera@health.slu.edu)

For questions regarding Responsible Conduct of Research, contact Andrew Butler, Ph.D. (andrew.butler@health.slu.edu)

In all other instances, contact the Director of Graduate Studies for the Department of Pharmacology and Physiology (Heather Macarthur, Ph.D. (heather.macarthur@health.slu.edu).

Please note that many of the forms referenced in this handbook can be found at: https://www.slu.edu/academics/graduate/current-students/index.php.

TIMELINE IN GRADUATE PROGRAM

PP Program courses

Yr 1 in PP Program

Fall - **PPY 5120** (Systems Physiology & Pharmacology I)
Spring –**PPY 5130** (Systems Physiology & Pharmacology II), **PPY 5140** (Grant writing Course)

PPY 5410 *(Molecular Pharmacology) is also available for students who need/want extra understanding of Pharmacology*.

Yr 2 – Preliminary Qualifying Exam – start planning with mentor after grant writing course ends

Yr 2-3 – Advance to Candidacy - Formation of Dissertation Committee

Yr 3-5 – The Final Stretch – Writing Up, Defending and Graduation

PPY 6800 – PP Seminar and **PPY 6900** – PP Journal Club – students enrolled throughout

Timeline in PP Program

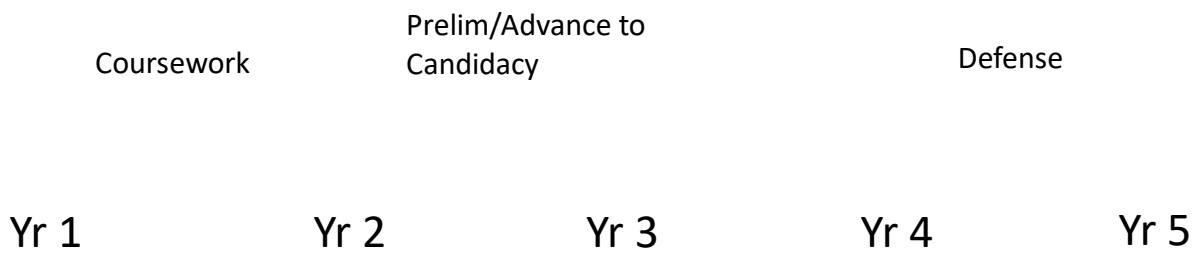


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INTRODUCTION

This handbook provides a concise guide to the process and policies of the doctoral graduate program of the Department of Pharmacology and Physiology of the Saint Louis University School of Medicine. While specifically tailored to the department, the standards outlined here are guided by the policies of the School of Medicine and Saint Louis University, which are the ultimate authorities in matters requiring remediation. Under the direction of Chair of the Department, Daniela Salvemini, the doctoral graduate program is overseen by the Graduate Steering Committee, chaired by Departmental Graduate Director Dr. Heather Macarthur, and composed of Drs. Vincenza Cifarelli, Aubin Moutal, Andrew Lechner and John Walker.

The Objective of the Training Program. The objective of the Saint Louis University Doctoral Training Program in Pharmacology and Physiology is to provide individuals with the opportunity to achieve a high degree of competence in pharmacology and physiology and prepare them to pursue productive careers in science. The five defining goals of the program are to: (1) instill enthusiasm for discovery and the scientific process; (2) foster the development of critical thinking skills; (3) develop laboratory research competence; (4) develop oral and written communication skills; and (5) promote a commitment to scholarship.

Overview of the Training Program. Students enter the department under the guidance of a chosen faculty advisor (mentor). Once accepted, these students complete formal training in pharmacology and physiology, successfully defend a preliminary qualifying examination and undertake a research project leading to a doctoral dissertation.

THE DOCTORAL PROGRAM IN PHARMACOLOGY AND PHYSIOLOGY

Entry into the Program. The Department of Pharmacology and Physiology admits students pursuing a traditional PhD as well as M.D./Ph.D. students. In all cases, the requirements for entry are: (1) selection of a dissertation research advisor from amongst the Pharmacology and Physiology faculty (see below concerning faculty with secondary appointments); (2) written acknowledgement by the student and advisor of the expectations and responsibilities required by the Department of Pharmacology and Physiology, and (3) written permission of the Chair (Daniela Salvemini, Ph.D.).

Overview of the Program. Students who enter the Pharmacology & Physiology Doctoral Program will take six credit hours in advanced coursework (PPY-5120, -5130 and -5140) as well as attend seminar (PPY-6800) and journal club (PPY-6900) presentations. ***Students without a background in Pharmacology training will also be required to take PPY 5410.*** After completing the required coursework, the students assemble a Preliminary Proposal Defense Committee, complete their Preliminary Examination Proposal, and defend it before the end of February of their second year in the department.

At the same time as taking coursework, students begin research on their dissertation project under the direction of their faculty advisor. After successfully defending their Preliminary Examination, students advance to candidacy and select a Dissertation Committee who oversees their research efforts until graduation. **Students are expected to meet with their Dissertation Committee twice each year**. Continued participation in weekly departmental Journal Club and Seminars is also required, as is participation as teachers in the undergraduate course *Drugs We Use and Abuse* (PPY 1450). Students are expected to complete their dissertation work, including the oral defense of the written document, by the end of their fourth year in the program. Students must present a public seminar on their work upon successful defense of their dissertation.

Pharmacology and Physiology Coursework

PPY 5120 - Systems Physiology and Pharmacology I (2 credit hours). This course meets during the Fall semester and covers the neurophysiology and pharmacology of sensory systems, memory and cognition, motor systems, mood and sleep systems, and pain pathways. Classes consist mainly of paper discussions with some didactic lectures for context. There will be two in-class exams based on the information covered in the class discussions/lectures that will comprise 80% of the final course grade. The final part of the course will consist of independent in-depth topic research. Students will spend the final part of the course researching a topic chosen from those submitted by teaching faculty. They will prepare a presentation to be given at the end of the course that will be assessed and graded by the teaching faculty for 20 % of their final course grade.

PPY 5130 - Systems Physiology and Pharmacology II (3 credit hours). This course meets during the Spring semester and covers the physiology and pharmacology of the autonomic, cardiovascular, lymphatic, renal, respiratory, endocrine, and gastrointestinal systems. Classes will consist mainly of paper discussions with some didactic lectures for context. There will be two in-class exams based on the information covered in the class discussions/lectures that will comprise 80% of the final course grade. The final part of the course will consist of independent in-depth topic research. Students will spend the final part of the course researching a topic chosen from those submitted by teaching faculty. They will prepare a presentation to be given at the end of the course that will be assessed and graded by the teaching faculty for 20 % of their final course grade.

PPY 5140 - Fundamentals of Effective Grant Construction (1 credit hour). This course meets during the spring and summer semesters. Its lecture and faculty mentored student activities cover the topics of funding agencies and programs, as well as how to develop the main sections of a research proposal including: Specific Aims, Significance, Innovation, and Research Design. They will also complete a proposal's complementary elements of statistics and alternative outcomes. Students work both in class, with their faculty mentors, and on their own to finalize a final proposal that conforms to NIH F31 guidelines. The final course grade is based upon class participation, construction of a grant proposal, and participation in a mock study section.

PPY 5410 – Molecular Pharmacology (3 credit hours). Intensive pharmacology course taught by PP faculty focused on the mechanisms of drug action at the molecular and cellular level. Topics include fundamentals of receptor biology, binding theory & efficacy, allosteric binding, principles of drug pharmacokinetics and assays/techniques used in modern pharmacology. Offered in Spring. Required for students without a strong background in Pharmacology.

PPY 6800 - Pharmacology and Physiology Weekly Seminar (0-1 credit hour). This course meets weekly during both the Fall and Spring semesters. Research seminars are presented by faculty and investigators from other departments of the University, or by guest speakers from other institutions. Roundtable lunch-time discussions with students and the speaker are regularly scheduled. Attendance and participation are required for all Ph.D. students for this yearlong course.

PPY 6900 - Pharmacology and Physiology Journal Club (0-1 credit hour). This course is scheduled weekly during the Fall and Spring semesters. It consists of weekly journal club presentations at which students discuss recent research findings and papers from the literature. The results of the faculty evaluation forms are discussed with each student individually by the Journal Club course director.

Grading Policy and Remediation. Course grades are awarded by the course director. Below is a general outline of departmental policies.

PPY- 5120, 5130, and 5140 Course Directors report the letter grade assigned to each student determined by the consensus of all faculty who taught in the section.

≥ 90.0% = A
≥ 85.0% = A-
≥ 80.0% = B
≥ 75.0% = B-
<75.0-65% = Incomplete.
< 65% = F

Remediation will focus on specific deficient areas as identified by the teaching faculty. Students who successfully remediate an incomplete grade will be assigned a final grade of **B-**. Students who fail this remediation will be assigned a final grade of **F**.

A student that is graded **F** must re-take the course at the next available opportunity – usually the next academic year. Students must pass all four didactic courses before advancing to the preliminary examination for advancement to doctoral candidacy. Students who receive a grade of "F" in more than one course face dismissal from the program. These students will meet with the Graduate Steering Committee who will take any extenuating circumstances under consideration in their final recommendation to the Chair of the Department, with whom the final decision rests.

PPY-6800 Student grades are based on attendance only, with a sign-up sheet outside the door of the lecture hall. Students are allowed to miss two lectures, after which a grade point is subtracted for each lecture missed. Missing five or more seminars results in a failing grade of F. Final letter grades are assigned by the course director using the following scale:

≤2 missed seminars = **A**
3 missed seminars = **B**
4 missed seminars = **C**
≥5 missed seminars = **F**

PPY-6900 Each student must give a minimum of **four presentations** during their time enrolled in the program. If a student transfers from another SLU program during their degree, their prior presentations in similar journal club based courses will be accepted in lieu of PPY 6900 requirements.

Students are graded based on attendance and presentation quality. Faculty are asked to complete a presentation evaluation sheet for each journal club presentation, using scores that range from "1" for unacceptable to "4.25" for outstanding. The values for all categories are then averaged. An attendance score of 3.75 is given for perfect attendance. Class participation is graded in 0.025 increments, and unexcused absences result in 0.25 deductions. Final letter grades are assigned by the course director using the following scale:

3.85-4.25 = **A**
3.75-3.84 = **A-**
3.5-3.74 = **B+**
3.0-3.49 = **B**
2.75-2.99 = **B-**

2.0-2.74 = **C**
0-1.99 = **F**

Grade Appeals – Students can appeal grades in any course but must do so within 90 days of the date that the course grade was posted. **Exception**: Graduating students must initiate a grade appeal within 30 days of the date that the course grade was posted. An appeal can only be made on the grounds listed in the university catalog under Grade Appeals.

Academic Appeals - As a general policy, Academic Appeals should first be made to the course director or faculty committee involved. If still not satisfied with the outcome an appeal can then be made to the department chairperson and the associate dean, and then the dean, in that order.

Should students wish to pursue an additional level of appeal, the case is taken to the associate provost for academic affairs who reviews the file to determine if the process was followed. The associate provost does not overturn a decision but may send the case back to the college, school, or center if the process was not followed.

Responsible Conduct of Research.

Training in the responsible conduct of research is required of all Ph.D. students at Saint Louis University and by the National Institutes of Health (Responsible Conduct of Research). Training takes place in four phases and consists of the following activities:

Phase 1: Phase 1 is BBSG-5100, Ethics for Research Scientists. All students are required to complete the course by the end of their first year in the Core Program.

Phase 2: Saint Louis University policy requires completion of the RCR online modules through the *Collaborative Institutional Training Initiative (CITI program)*. You will be required to register if new to the site. Further, SLU requires a minimum of eight hours of face-to-face RCR training, consistent with NIH and NSF requirements. All required training must be completed prior to the end of the third year of graduate training. Early completion is encouraged. In order to meet the in-person requirement, Saint Louis University provides a series of two-hour topic focused workshops throughout the year for individuals to attend. Attending a minimum of four workshops will attain compliance with the eight-hour requirement for that person. Although this is a not-for-credit class, attendance at all of the presentations is mandatory. For further information regarding departmental RCR requirements, please conduct Andrew Butler, Ph.D. (andrew.butler@health.slu.edu).

Phase 3: All trainees who have not finished requirements for the Ph.D. in four years after they complete the Phase 2 course must take a Refresher Course on the RCR. The Refresher requires participation in the Responsible Conduct of Research workshops sponsored by the Office of the Vice President for Research and Office of Compliance of the Saint Louis University . Workshops are held in the Fall and Spring semesters. Each workshop will cover at least one of the major topics in RCR and count two hours for the eight hours of face-to-face training required by the NSF/NIH workshop consist of a panel of faculty and/or staff members representing different disciplines and areas of expertise on the topic.

PRELIMINARY EXAMINATION FOR ADVANCEMENT TO DOCTORAL CANDIDACY.

Overview of the Preliminary Examination. Every student in the Department of Pharmacology and Physiology must successfully complete **before the end of February of their second year in the departmen**t a written and oral examination to continue in the Ph.D. program and advance to doctoral candidacy. The Preliminary Examination has two components, a written and an oral exam. Students may use the document produced for their grant writing course (**PPY5140**) as their written document.

Students are referred to Sections 1 and 2 of *Process for Students Pursuing a Doctor of Philosophy Saint Louis University* for discussion of the written and oral preliminary examinations.

Purpose of the Preliminary Examination. The goal of the preliminary examination is to assess the ability of the graduate student to formulate a hypothesis and to design an experimental approach. The written examination tests the student's ability to think independently and survey the appropriate literature, and to probe the student's knowledge in research areas considered essential for understanding the chosen research topic. The oral examination is to provide the student with an opportunity to present and defend the written proposal. The oral examination is not a comprehensive examination designed to test all information that the student has been exposed to throughout the graduate-level coursework but rather is restricted to information that is pertinent to their preliminary proposal.

Formulation of the Preliminary Examination Committee. The Preliminary Examination Committee consists of five members total – the faculty advisor (mentor), two members of the preliminary standing committee (one of whom will serve as Chair) and two additional departmental faculty members. If the faculty advisor is also a member of the Standing Committee, then an additional member of the Standing Committee is recruited (i.e. the committee must contain two independent members of the Standing Committee). All members of the committee must have Graduate Faculty Status.
The **Preliminary Standing Committee:** Drs. Andrew Butler (andrew.butler@health.slu.edu), Andrew Lechner, (andy.lechner@health.slu.edu), Liberty Francois- Moutal (liberty.francoismoutal@health.slu.edu), Juliana Navia-Pelaez (juliana.navia@health.slu.edu).

Timeline of Preliminary Examination and Deadlines. The preliminary examination occurs after completion of all required course work (usually the end of the Summer semester) and the oral defense must occur by February 28th of the following Spring semester.

Components of the Preliminary Examination. The **first component** of the preliminary examination is completion of a written research proposal that conforms to the research plan of a NIH F31 proposal (F30 if MD/PhD). The use of the document produced in **PPY 5140** (grant writing course) is permitted. Note that the bibliography and title page do not affect page limits. The subject of the proposal is open and does not have to involve a current research project in the laboratory. Preliminary data produced by the students are not required of the student however, the student is allowed to include data available from other sources (e.g. previous experiments from the faculty advisor's laboratory, or data gathered from the literature, all presented with proper citations). Students are encouraged to present their ideas in a clear and concise manner and with proper grammar, spelling, and punctuation, as would be required if the proposal was to be reviewed by a regular NIH study section.

After receiving the written proposal, the Preliminary Examination Committee has one week to review the document after which they decide whether the document is acceptable and if the student can proceed to the oral examination. The final date for the defense should be no more than two weeks after the committee approves the written document. The Chair of the Preliminary Examination Committee must also email the completed the *Doctoral Oral Examination Form* (to Dr. Brittney Hollister (brittany.hollister@health.slu.edu) for processing, two weeks before the date of the oral defense in order to receive the results form in time for the examination.

If the committee decides that the written document is not acceptable, the student is required to meet with all committee members, as a group or individually, so that clear understanding of the deficiencies in the written proposal is reached. The student is then given additional 30 days to correct the deficiencies and submit an acceptable written proposal. Failure to submit an acceptable proposal after two attempts is grounds for dismissal. This step must be passed before the oral defense can be scheduled.

The **second component** of the preliminary examination is the oral defense of the written proposal.

The oral examination occurs with two weeks of submitting an acceptable written proposal.

The purpose of the oral exam is to provide the student with an opportunity to present and discuss the written proposal, and to demonstrate how the proposed experiments fit within the larger context of pharmacology and physiology. In terms of methodology, the student will be examined on content of the proposal. The oral exam is a test of the student's understanding of how the hypothesized questions, aims and experimental design fit within the context of the scientific field. It is **not a comprehensive examination of everything covered in general classes but a demonstration of grounding in that work is expected**.

The oral examination/defense begins with a **15-20 min presentation** by the student in which key points of the written proposal are reviewed. It is **not** an all-inclusive presentation of the proposal. The presentation should include discussion of: (1) the background, to establish relevance and to place the project within historical context; (2) the hypothesis; (3) the major elements of the experimental design; and (4) preliminary data, if available, from previous work in the laboratory or from the literature. Again, it is not expected that the student will have personally generated any preliminary data to write or present the preliminary exam. The oral presentation sets the stage for the questions that follow from the committee members. These questions will seek to clarify or expand on points made in the written or oral presentations of the proposal and to test the student's ability to place the research proposal in context of the larger scientific picture with specific emphasis on current knowledge in pharmacology and physiology. Further, students are expected to have a thorough understanding of the background of the project and the relevant literature. Successful completion of the oral defense is determined by a vote of the members of the Preliminary Examination Committee.

If a student does not pass the oral exam, the exam may be repeated a second time. The second attempt may not be scheduled within the same academic term as the first. An outside committee member (i.e. a Saint Louis University faculty member from another program) must be present at the second exam/proposal defense. A student who fails the second attempt will not be permitted to continue in the doctoral program.

ADVANCEMENT TO DOCTORAL CANDIDACY STATUS

Upon successful completion of the written and oral examinations, the Chair of the Preliminary Examination Committee submits the signed examination result form by email to the Doctoral Candidacy Advisor, (doctoralcandidacyspecialist@slu.edu). Receipt of this form by the Graduate Education Office automatically advances the student to Doctoral Candidate Status. Students are required to be enrolled in at least one hour of dissertation credit upon achieving doctoral candidacy status until completion of required credits (see "Advancement to Candidacy: Research Phase" under *Graduation Requirements for Doctor of Philosophy (Ph.D.) students*.

DISSERTATION COMMITTEE AND DEFENSE OF THE DOCTORAL DISSERTATION.

Students are referred to Sections 3-7 of *Process for Students Pursuing a Doctor of Philosophy Saint Louis University* for descriptions of the written requirements for successful completion of the doctoral candidacy; students are encouraged to strictly adhere to the guidelines presented there, including timely completion of the Degree Audit form, on-line application for degree through the Banner System, and the Notification of Readiness for the Public Oral Defense form – same form and process as used for the preliminary exam.

Formation of the Dissertation Committee.
The chair of a Dissertation Committee (usually the primary faculty advisor (mentor) of the student) must be from the student's program and a member of the current Saint Louis University Graduate Faculty. The committee for the dissertation defense must have a **minimum** of three members although at least 4 or 5 are preferable, and one member must be an independent member (i.e. not the student's faculty advisor) of the Graduate Steering Committee: Drs. Heather Macarthur (heather.macarthur@health.slu.edu), Vincenza Cifarelli (vincenza.cifarelli@health.slu.edu), Andrew Lechner (andy.lechner@health.slu.edu), Aubin Moutal (aubin.moutal@health.slu.edu), and John Walker (john.walker@health.slu.edu).

All committee members must hold Graduate Faculty status. A non-Saint Louis University faculty member may serve on a student's Dissertation Committee but must be approved to serve on an ad hoc basis by the associate dean or director of the college, school, or center. Approvals may be made upon written request by the dissertation committee chair. The request should include a brief rationale for the member's service and the proposed member's CV and should be sent to Brittany Hollister, Ph.D., Associate Dean of Graduate Studies and Postdoctoral Affairs (brittany.hollister@health.slu.edu).

The Dissertation Committee. The first meeting of the Dissertation Committee should occur **within six months of passing the preliminary examination and before the end of the student's second graduate year in the PP program**. The primary purpose of the first meeting is to provide an outline the proposed project to the Dissertation Committee, including discussion of experimental aims, methodology, and expected outcomes. **Preliminary data is not required for this meeting**.

Committee Meetings. Doctoral candidates **are expected to meet with their Dissertation Committee at least twice a year**, but at least three times prior to their defense. The charge of the Dissertation Committee is to approve, advise, and evaluate research progress, and recommend suitability for submission of the written document for oral defense. After each meeting a student progress form should be completed.

Grading. Students must complete a minimum of 12 credit hours of **PPY-6990 (Dissertation Research)** to be eligible to graduate. Grading is administered by the student's named faculty advisor and either a Satisfactory (S) or Unsatisfactory (U) grade is entered into the *Banner* grading system each semester, based on the progress of the student's research project.

Defense of The Dissertation. Once the dissertation committee is satisfied that the student is ready to defend their dissertation, they will give the student the go-ahead to write up their dissertation. The written dissertation must follow University guidelines set out in the manual, *Policies and Procedures for Dissertation, Project, and Dissertation Formatting*.

The committee will also decide on a date for the private and public defense. Chair of the Dissertation Examination Committee must also email the completed the *Notification of Readiness for the Public Oral Presentation of the Dissertation Defense* to the Associate Dean of Graduate Studies and Postdoctoral Affairs, Dr. Brittney Hollister (brittany.hollister@health.slu.edu) for processing two weeks before the date of the oral defense in order to receive the results form in time for the examination.

Private and Public Oral Defenses. The Dissertation Committee will meet with the candidate to conduct a private defense of the dissertation. The student will present their findings and answer any remaining questions asked by the committee. Then, the candidate will be excused from the meeting, after which the committee will discuss their evaluations of the candidate and complete the official results form.

Following the private defense, successful candidates are required to present a public oral presentation of their dissertation work as a formal seminar. The presentation should conclude after 45 minutes and is followed by a discussion/examination period at which time all members of the audience may question the Ph.D. candidate.

If the committee requires major revisions of the dissertation following the defense, the results form

will not be completed until every committee member is satisfied. A unanimous positive evaluation of the dissertation committee, that is, all members whose signatures appear on the Candidate's approved prospectus, is necessary for final approval of the dissertation. Should the candidate not be approved for graduation because of one negative vote from a dissertation committee member, the Candidate may appeal. The appeal process is described in the Catalog of the Graduate School.

Upon a positive evaluation of the defense, the faculty advisor of the student should also enter a final Satisfactory (S) grade into the *Banner* grading system for their completion of PPY 6990, to allow for their degree to be processed in a timely manner.

TEACHING RESPONSIBILITY

Graduate students in the Pharmacology and Physiology Doctoral Program are required to obtain formal teaching experience by participating as lecturers in *Drugs We Use and Abuse* (PPY 1450). This 3-credit undergraduate course for non-science majors is presented each Fall Semester, and meets Monday, Wednesday and Friday mornings. The course syllabus is prepared and revised annually with each block of lectures or chapter written by its graduate student lecturer.

ACADEMIC AND BEHAVIORAL STANDARDS

Overview. Students are expected to comply with all academic coursework and research standards outlined in this document, unless specific requirements have been waived or substituted with the prior approval by their preliminary and/or dissertation committees and the departmental Graduate Steering Committee. All students are obliged to participate in regularly scheduled journal clubs, weekly seminars, teaching assignments, and departmental retreats/meetings when applicable, unless excused in advance by the faculty directors of those events or the departmental graduate director. Furthermore, specific students may be encouraged or required to attend training seminars, technical or grant-writing workshops, and scientific meetings, as determined by consultations with their faculty advisor, preliminary examination and dissertation committees.

At all times, students are required to maintain a grade point average of "B" or better. Students who fail to do so will be placed on probation. Probationary status lasting two consecutive academic semesters (excluding the Summer semester) is grounds for dismissal.

In keeping with the policies outlined in the *Saint Louis University Student Handbook* and the *Academic Integrity Policy* , students are expected to comport themselves in a professionally appropriate manner when interacting with colleagues within the department and throughout the School of Medicine, as well as in broader academic settings as those arise. Such events may include but are not limited to visits and luncheons with institutional guests such as seminar speakers and special lecturers, as well as during all their interactions with undergraduate, graduate, and postdoctoral trainees. Furthermore, all students are expected to obtain and maintain institutional certifications relevant to their activities, in areas such as animal care, biosafety, human subjects, hazardous waste handling and disposal, and emergency preparedness. Failure to comply with these standards is grounds for dismissal.

Monitoring Student Progress and Performance. While enrolled in the Pharmacology and Physiology Graduate Program, student progress is monitored by the departmental Graduate Steering Committee. Progress is gauged by grades awarded at the end of each semester, and during annual meetings of each student with the departmental Graduate Steering Committee. Before these annual meeting it is required that every student completes their annual progress report form.

The required Graduate School academic standard for all students receiving Fellowships is the maintenance of a B average (3.0 grade point average) in each academic year. A student with a grade

point average below 3.0 is put on academic probation and may lose the Fellowship if this average is not restored to 3.0 in the next semester.

Individual Development Plan. All students are required to develop an Individual Career Development Plan using MyIDP as soon as they complete their Preliminary Qualifying Exam. The goal is to help students and postdoctoral fellows define and pursue career goals. Progress through MyIDP is monitored by Dr. Ian De Vera (ian.devera@health.slu.edu).

Remediation of poor performance and grounds for dismissal. Students who fail to comply with the academic or behavioral standards outlined above will be required to meet with the Departmental Graduate Director and/or the relevant Course Director, Teaching Supervisor, or Preliminary Exam or Doctoral Defense Committee Chairperson. Issues that can result in such required meetings include but are not limited to poor classroom performance or participation, failing or substandard exam or course grades, unexcused absences, noncompliance with regulatory certification standards, and documented examples of inappropriate behavior. During a first such meeting, the infractions or other issues will be discussed with the student and minutes of the meeting taken for distribution to the trainee and faculty advisor and other faculty members or supervisors that detail the specific remediation plan to be imposed. Follow-up meetings or other benchmarks may be imposed at that time, such as timelines to complete missed assignments, complete certification training sessions, or modify inappropriate behavior.

Depending upon the severity of the situation or the department's concerns about the student, a period of probation for up to a full semester may be imposed, so that the student can correct deficiencies or behavior. During an initial probationary period, a student's stipend will customarily not be at risk of immediate suspension. However, more serious matters including breaches of professional ethics may be brought to the full Departmental Graduate Committee for its deliberation. Students who require more than two such probationary periods during the entire course of their graduate studies will, at the discretion of the Graduate Committee and the Departmental Chair, be informed of the intent to initiate dismissal proceedings. After informing the student, the Department will follow the formal procedure for dismissal outlined in Procedure for Graduate Student Dismissal, Saint Louis University School of Medicine.

Procedure for terminal master's in science degree. Some doctoral students fail to achieve acceptable coursework grades, advancement to candidacy, or research progress by the timelines and rubrics outlined above. Most often this can occur due to scientific and technical difficulties with a project, unresolvable issues between the student and faculty advisor, or personal matters such as a trainee's health or support system that develop once the trainee has begun the official doctoral research studies. Whenever possible, the Department Graduate Committee and/or the Departmental Graduate Director will have met on several occasions with the student to recommend plans of action that facilitate continued progress in overcoming such obstacles. If such efforts by all parties fail to resolve issues that are impeding final completion of the doctoral dissertation, the Department reserves the right to recommend awarding a master's in science degree, so that the student can move forward with other career plans.

Students are referred to MS Degree requirements, which lists the degree requirements for a Masters in Science degree. In the Department of Pharmacology and Physiology, the student is required to have successfully completed the first (Core) and second (Departmental) year curriculum. Successful defense of the Preliminary Examination is not required. However a written dissertation is required, which must be orally defended before a committee composed of the Faculty Advisor and at least two other departmental faculty members with Graduate Faculty Status. The written document can be a stand-alone dissertation, or a copy of a first-authored published or in press manuscript. Successful defense of the written document is judged by the dissertation committee. Once approved, the student must complete their Application for Graduation.

Department Sponsored Travel. The department will pay up to $1,000 of department funds to 2nd year who have completed 1st year Core and now in 2nd year or above students who are registered with the department to present at one (1) domestic or international conference per fiscal year. A fiscal year at Saint Louis University begins July 1st and ends June 30th. The student must get the approval of the chair before booking flights (see Appendix H for full policy).

SUMMARY OF CURRICULUM FOR M.D./PH.D. STUDENTS

(adapted from, *A Student Guide to the M.D./Ph.D. Program*; for more information, contact Dr. Jane McHowat (jane.mchowat@health.slu.edu), Director, M.D./Ph.D. program, Saint Louis University School of Medicine)

The Department of Pharmacology and Physiology provides a Ph.D. program that trains students to be independent investigators in the interrelated disciplines of physiology and pharmacology. The department also contains the Institute for Translational Neuroscience. The overall goals of the Ph.D. program are to instill enthusiasm for discovery and the scientific process; foster critical thinking, research competence, and oral and written communication skills; and promote a commitment to lifelong scholarship. Diverse research interests of the department faculty ensure that trainees can select projects that span physiology and pharmacology from the subcellular through integrative levels. M.D./Ph.D. trainees join this graduate program with 30 credits transferred from the Phase 1 and 2 M.D. curricula toward the total of 34 credits and 12 dissertation credits required for the Ph.D. degree by the Office of Graduate Education. The remaining six coursework credits are satisfied through completion of two required courses described below, and by regular participation in the Department's scheduled journal clubs and seminar series that are also detailed below. Journal clubs cover a broad range of subjects, as do the weekly departmental seminars that feature outstanding speakers from the U.S. and abroad.

REQUIRED EXAMINATIONS

Preliminary Examination

Every M.D./Ph.D. trainee in the Department must pass written and oral exams that are based on a research proposal written by the student as a grant application. Following a satisfactory performance in PPY 5410 (Molecular Pharmacology), the trainee participates in a grant writing course (PPY 5140), where they develop an original proposal that complies with NIH F30 page limits (One Specific Aims page + six pages of the research proposal + bibliography). The document produced from this course can be used to satisfy the written portion of the preliminary exam. The requirements of the preliminary exam are identical to that for standard Pharm/Phys Ph.D. students except that the examination committee must include a Pharm/Phys faculty member who is also a member of the M.D./Ph.D. steering committee.

Upon receiving the written F30 proposal, the Preliminary Examination Committee has one week to review the document after which they decide whether the document is acceptable and if the student can proceed to the oral examination. The final date for the defense should be no more than two weeks after the committee approves the written document. If the document is not acceptable, the student must revise it by consulting with committee members to clearly identify and remediate its deficiencies. Revision can be repeated twice before the student may be dismissed from the program. Once the written proposal is approved, the committee chairperson schedules an oral defense within two weeks. During the defense the trainee will give a 15-20 min PowerPoint presentation of the proposal after which committee members will question the trainee both on the proposal's details as well as its broader scientific context. While the oral exam is not a comprehensive test of all pharmacological and physiological coursework covered by the trainee to date, there is an expectation of a firm understanding of the basic principles of the disciplines especially as it pertains to the research topic in hand. Committee members vote privately on the

acceptability of the oral defense. Students that fail this process may be granted one additional opportunity to pass.

Dissertation Examination

Completion of the preliminary exam permits the M.D./Ph.D. trainee and mentor to assemble a dissertation committee and to file formal Ph.D. candidacy papers with the Graduate School. Again, the requirements for this process are identical to those described for standard departmental Ph.D. students except that one member of the dissertation committee must serve on the M.D./Ph.D. Steering Committee.

The dissertation committee meets at least twice a year to evaluate, advise, and approve of progress being made. It is expected that students will submit completed segments of their dissertation research to peer-reviewed journals during their training.

When sufficient research progress has been determined, the Dissertation Committee will approve the writing of the dissertation. Upon completion and submission of this document, the candidate will meet with the committee to conduct a private defense of their dissertation. The students will present their results, and answer any remaining questions asked by the committee. The candidate will then be excused from the meeting, after which the committee will discuss their evaluations of the candidate and complete the official results form. If the committee requires major revisions of the dissertation following the defense, the ballot form will not be completed until every committee member is satisfied. A unanimous positive evaluation of the dissertation committee is necessary for final approval of the dissertation.

Following the private defense, successful candidates are required to present a public oral presentation of their dissertation work as a formal seminar. The presentation should conclude after 45 minutes and is followed by a discussion/examination period at which time all members of the audience may examine the Ph.D. candidate. Spontaneous questions that arise during the presentation are also encouraged.

SUMMARY OF COURSEWORK REQUIRED

Prerequisites: Successful completion of the pre-clerkship phase of the M.D. Curriculum and USMLE Step 1. M.D./Ph.D. trainees receive up to 30 graduate credits that are transferred from Phases 1 and 2 courses.

Required Didactic and Participatory Department of Pharmacology and Physiology Courses during Ph.D. Training Years:

· **PPY-5410** Molecular Pharmacology

· **PPY-5140** Fundamentals of Effective Grant Construction

· **PPY-6800** Pharmacology and Physiology Departmental Seminar

· **PPY-6900** Pharmacology and Physiology Colloquium Journal Club

PPY 5410 – Molecular Pharmacology (3 credit hours). Intensive pharmacology course taught by PP faculty focused on the mechanisms of drug action at the molecular and cellular level. Topics include fundamentals of receptor biology, binding theory & efficacy, allosteric binding, principles of drug pharmacokinetics and assays/techniques used in modern pharmacology. Offered in Spring.

PPY-5140 Fundamentals of Effective Grant Construction (1 credit hour). Beginning towards the end of the spring semester and extending through mid-summer, this course includes didactic lectures, one-on-one mentoring sessions, and dedicated proposal writing time, culminating in a 20 – 30 min oral

presentation followed by questions and faculty critiques. The final proposal must include all main narrative sections of an NIH- formatted F30/F31 grant application (7 pages + bibliography). Students may use their PPY-5140 proposals for their Preliminary Exam for advancement to doctoral candidacy.

PPY-6800 Pharmacology and Physiology Departmental Seminar (0-1 credit hours per semester). Selected topics in pharmacology and physiology are presented by local, national, and international guest speakers. Seminars are held at least twice monthly and usually more often. Attendance and participation are required for all Ph.D. students for this yearlong course.

PPY-6900 Physiology and Pharmacology Colloquium Journal Club (0-1 credit hours per semester). Selected topics in pharmacology and physiology are discussed from the current literature in these fields. Colloquial journal clubs are held at least twice monthly and usually more often. Attendance and participation are required for all Ph.D. students.

PPY-6990 Dissertation Research (0 – 6 credits per semester; 12 credit hours required for graduation).

Responsible Conduct of Research. This is non-credit based but training in the responsible conduct of research is required of all Ph.D. students at Saint Louis University and by the National Institutes of Health.

UNIVERSITY POLICIES AND RESOURCES FOR GRADUATE STUDENTS.

Academic Catalog - Students must become familiar with the regulations in the Academic Catalog and those within the college, school, center, department and program in which they are enrolled.

University Student Handbook – The student handbook is your guide to Saint Louis University policies, community standards and other important information that can help you navigate your way as a SLU student.

Office of Professional Oversight. The Office of Professional Oversight is responsible for providing all stakeholders (students, trainees, faculty and physicians) a fair and neutral environment to seek assistance and support, file a grievance, or report acts of unprofessional behavior or concerns. In addition, the Director of the Office of Professional Oversight also serves as the Ombudsperson for Saint Louis University School of Medicine. The Office of Professional Oversight can assist all members of the School of Medicine community with issues related to conflict resolution, interpersonal communication, academic, professional, or administrative concerns. The goal is to provide each of these services in an environment that is built upon trust, confidentiality and neutrality.

Parental Leave
Graduate Student Parental Leave Policy. This policy establishes guidelines to protect the interests of graduate students who, while during their graduate academic program, become the primary caregiver to a newborn or adopted child.
Petition form for Parental Leave

Appendix 1

PROCEDURE FOR GRADUATE STUDENT DISMISSAL, SAINT LOUIS UNIVERSITY SCHOOL OF MEDICINE

(from Graduate Program Advisory Committee, 2016)

Recommendation for Dismissal

The Chair or Director of the student's academic unit (Department or Center, respectively) will notify the Dean of the School of Medicine in writing that the faculty of that unit recommend dismissal for reasons detailed in the letter.

Action of the Dean

The Dean may consult with the Provost and the Associate Director for Graduate and Postdoctoral Affairs before issuing a dismissal letter to the student. Once a decision to dismiss is made, the student will be notified in writing of the decision and advised to contact Associate Director for Graduate and Postdoctoral Affairs should they wish to appeal the decision. The Dean may choose to deny the dismissed student access to the campus and may notify the Department of Public Safety accordingly.

Procedure for an Appeal

The dismissed student may contact the Associate Director for Graduate and Postdoctoral Affairs to request an appeal within ten days of receipt of the dismissal letter. If an appeal is requested, the Associate Director for Graduate and Postdoctoral Affairs will appoint a subcommittee of three members of the School of Medicine Graduate Program Advisory Committee (GPAC) to hear the student's appeal. None of the three subcommittee members will be representatives of the student's former academic unit.

Role of the Subcommittee

The Subcommittee will review the documentation concerning the decision to dismiss The subcommittee may interview the dismissed student and the Chair or Director of the student's former academic unit, to understand how the decision to dismiss was determined. The Subcommittee will not judge the merit of the decision, instead they will recommend to the Dean one of the following:

1. Appropriate procedures were followed by the academic unit. OR
2. The decision by the faculty in the academic unit should be reconsidered.

Final Decision on the Merit of the Appeal

The Dean will consider the recommendation of the Subcommittee before making a final decision. The Dean may decide to consult the Associate Director for Graduate and Postdoctoral Affairs or the Provost before making a final decision.

Any further appeals by the dismissed student must be made to the Associate Provost for Graduate Education in accordance with the policy established in the most current Graduate Education Handbook.

Reviewed and Approved by GPAC: August 24, 2016. Accepted in Final Form by the Director of Graduate Programs in the Biomedical Sciences: August 29, 2016. Submitted to the Dean of the School of Medicine for final approval: August 29, 2016.

Appendix 2

University Policies, Forms and Resources

Policies and Procedures Manual for Graduate Assistants and Fellows

Saint Louis University Student Handbook

Petition to Amend Graduate Program

Academic Integrity Policy

Grade Appeals.

Academic Appeals

Responsible Conduct of Research

Collaborative Institutional Training Initiative (CITI program)

IDP

Process for Students Pursuing a Doctor of Philosophy Saint Louis University

Doctoral Oral Examination Form (for prelim exam)

Notification of Readiness for the Public Oral Presentation of the Dissertation Defense

Policies and Procedures for Dissertation, Project, and Dissertation Formatting.

Graduation Requirements for Doctor of Philosophy (Ph.D.) students.

MS Degree requirements

Application for Graduation

Office of Professional Oversight

Graduate Student Parental Leave Policy

Petition form for Parental Leave

Appendix 3 – Departmental Required Progress Report Forms

Department of Pharmacology & Physiology
Dissertation Committee Progress Report

Name: Date of Meeting:

1. List the Specific Aims of your project.

2. List the goals that were decided at the previous committee meeting and note what has been accomplished since the last progress meeting.

3. List the specific goals for the next progress meeting.

4. If known, state the expected date of research completion. If the date has changed, explain briefly.

5. If known, state the expected date of thesis/dissertation completion and graduation. If the date has changed, explain briefly.

6. List any manuscripts submitted, papers published, poster or oral presentations, grants submitted, etc.

Department of Pharmacology & Physiology — Saint Louis University
Doctoral Student Progress Report

(To be completed by the student and submitted to the Graduate Program Director each year prior to the annual student progress meeting.)

Note: if not applicable to your timeline in the program, write N/A

1. General Details

Student Name: Date:

Research Advisor:

Year Admitted to the Pharmacology and physiology program:

Date of Prelim Qualifying Exam:

Anticipated Graduation Date (approximate month and year):

Dissertation Title (current):

Dissertation Committee Members (one must be a member of the Graduate Steering Committee):

-
-
-
-
-

2. Pharm Phys Coursework completed (expand table if needed)

Term	Course Number	Course Title	Credits	Grade
Fall				
Spring				
Summer				

Average GPA:

Self-Assessment for Coursework:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

3. Research and Academic Progress

A. Research Summary

Provide a concise summary of your research progress, including hypotheses, key results, conclusions, and next steps (limit to one page). ***Attach a separate page to this form****.*

B. Dissertation Committee Meetings

Note: at least two meetings per academic year are required by our guidelines

Dates of each committee meeting

Fall Meeting:

Spring Meeting:

C. Publications and Abstracts

List all published or submitted manuscripts, abstracts, and posters (with full citation).

-
-
-

Self-Assessment for Publication Activities:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

D. New Technical Skills*:*

List any new experimental, analytical, or computational techniques acquired during the past year.

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-
-
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Self-Assessment for Developing Technical Skills:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

E. Honors, Awards, and Fellowships

List all awards, fellowships, or scholarships received or applied for this year.

Applied for:

-

-

Received:

-

-

Self-Assessment of independent Funding:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

F. Conferences and Meetings

List all scientific meetings attended and specify whether you presented (poster/talk).

-
-
-
-

Self-Assessment for Conference Activities:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

G. Additional Achievements:
Include activities that demonstrate professional growth, service, or community engagement beyond research.

Leadership and Service: Serving as officer or committee member (e.g., Graduate Student Association, Science and Community committee, safety officer, recruitment ambassador). Organizing journal clubs, seminars, or outreach events.

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Self-Assessment for Leadership Activities:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

Teaching and Mentorship: your involvement in Drugs we use and Abuse, other teaching activities, Teaching certificates, workshops, or pedagogy training. Mentoring undergraduate or rotation students (list names if applicable).

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Self-Assessment of Teaching Activities:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

Outreach and Communication: Science outreach to the community or K-12 schools. Public engagement (science fairs, podcasts, blogs, lab social media, etc.). Participation in departmental open houses or recruitment events.

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Self-Assessment of Outreach Activities:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

Professional and Institutional Involvement: Membership or activity in professional societies. Conference organization or abstract review roles. Participation in panels, career development, or diversity initiatives.

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Self-Assessment of Service Activities:

1 = Needs improvement	2 = Developing	3 = Competent	4 = Proficient	5 = Strong
☐	☐	☐	☐	☐

Other Achievements: Any noteworthy contributions not captured elsewhere (patents, art/science integration projects, technical resource development for the lab/department, invited presentations).

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4. Responsible Conduct of Research (RCR)

Category	Hours/Status
Phase 1: BBSG-5100, Ethics for Research Scientists	
Phase 2: CITI training	
Phase 3: Workshops	

5. Individual Development Plan (IDP)

Area	Progress / Update
Career Goals	
Skills to Develop	
Action Steps Taken This Year	
Mentor Discussion Completed? ☐ Yes ☐ No	Date:

6. General Self-Assessment of progress

(Briefly rate and comment on each area; 1 = needs improvement through 5 = strong)

Area	Rating	Comments
Experimental Design / Scientific Reasoning		
Data Analysis / Statistics		
Writing and Communication		
Knowledge of Litterature		
Independence and Initiative		
Teamwork / Mentoring		
Professional Conduct		

7. Professional Development Goals (Next Year)

List 3–5 specific, measurable goals for the coming year.

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-
-
-
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8. Acknowledgements

Discuss your self-assessments and goals with your mentor and sign the form. If there are any other comments from either you or your mentor, you can enter them here:

9. Signatures

Name: Signature: _____
Doctoral student

Name: Signature: _____
Faculty Mentor