

UNIVERSITY OF ILLINOIS AT CHICAGO, COLLEGE OF MEDICINE

DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR GENETICS

GRADUATE PROGRAM OVERVIEW - REVISED, AUGUST 2017

This program overview has been put together to answer questions commonly asked by students, and to provide a more detailed guide to the Ph.D. Program in Biochemistry and Molecular Genetics than is contained in the Graduate College Catalog. The program is administered by two Directors of Graduate Studies (DGS): Dr. Michael Caffrey [1320 MBRB; (312) 996-4959; caffrey@uic.edu], and Dr. Alisa Katzen [2370 MBRB; (312) 413-9215; katzen@uic.edu].

Please consult one of the DGSs if you have an academic concern.

COURSE REQUIREMENTS FOR STUDENTS IN THE Ph.D. PROGRAM:

Students are required to successfully complete seven didactic courses, various other seminar and workshop courses, and be continuously enrolled in, and actively pursuing “graduate research”. Please see accompanying handout for details of course requirements.

For MD/PhD students, the course requirements are essentially the same, although some adjustments may be made in consultation with the DGSs.

GRADUATE COLLEGE COURSES:

Two courses taught by the Graduate College are of interest to our students. One of them is GC 470 (Essentials for Animal Research, 1 hour), is required to be taken by all students who will be using animals in their thesis research; it is optional for other students. This course is given in the fall semester every year. The other course is GC 401 (Scientific Integrity and Responsible Research, 1 hour, no credit), which is mandatory for students supported by federal grants. This course, also given in the fall semester every year, is recommended for students who have not yet begun their doctoral dissertation research.

RADIATION SAFETY LECTURES:

All employees, including students, who will be using radioactive isotopes in their research, are required to attend the Radiation Safety lectures. The lectures that (currently consisting of 3 lectures of 2 hours each are scheduled during the lunch period) are given by the Radiation Safety Office, and newly entering students should take these lectures as soon as their schedule allows.

COURSE REGISTRATION:

Students are required to maintain continuous registration of at least 12 hours, and no more than 20 hours, per term in the Graduate College if they are to maintain their assistantship, stipend, and tuition waiver. International students must maintain full-time status (at least 12 hours) in order not to be in violation of the F-1 visa. MD/PhD students are required to maintain continuous registration in the graduate college until the completion of their Ph.D. portion.

Students register for courses online.

Adding or dropping a course is the responsibility of the student and her/his advisor, in consultation with the DGS. Forms are available on the Graduate College website (<https://grad.uic.edu/cms/?pid=1000363>). Check the Graduate College Calendar for the last date for adding or dropping a course. You must return the completed form to the Graduate College (M/C 192) and a copy needs to be made and returned to our departmental Graduate Office so that it can be kept in your file.

COURSE REGISTRATION AND TIME LIMIT REQUIREMENTS OF THE GRADUATE COLLEGE:

96 semester hours of course work and research beyond the bachelor's degree are required for the doctoral degree or 64 semester hours beyond the master's level. The student must maintain continuous registration until the minimum degree and residency requirements are met.

A student entering with a master's degree must complete the degree requirements within 7 calendar years. A student entering with a bachelor's degree must complete the requirements within 9 calendar years of initial registration. These requirements can be extended only by petition to the Graduate College. For more details consult the Graduate College Catalog.

GOOD ACADEMIC STANDING:

A student must maintain a cumulative GPA of at least 3.0 (A=4.0; B=3.0; C=2.0, etc.) in didactic (lecture) courses to remain in good academic standing. If a student receives a C grade in a required didactic course and his/her didactic GPA is below 3.0, he/she will be placed on probation and asked to raise his/her didactic GPA to 3.0 in the following semester (by obtaining an A in another didactic course). Additionally, any student receiving a C in one of the fall semester didactic courses (GEMS 501, 502, or 503) will be required to repeat the course the following year, and will need to earn an A or a B in order to maintain good academic standing and remain in the program. A student receiving a C in one of the other didactic courses may be required to repeat the course at the discretion of the DGS (in consultation with the thesis advisor and/or graduate committee). Students who obtain two C's or one D in required didactic courses will be dropped from the program. Under extenuating circumstances, a student who received one C might also be dropped from the program if in the judgment of the Graduate Committee, the student has little chance of successfully completing the program. This regulation supercedes the information in the Graduate College Catalog.

If a student is found to be cheating in any exam or assignment for the graduate program, it will be considered grounds for immediate dismissal.

A student who receives an unsatisfactory grade (U) in research (BCMG 599) may be reviewed by the departmental Graduate Committee and the Graduate College and may be placed on probation or dropped for failure to progress. Please note that students who have passed their preliminary exams and do not comply with the requirement to meet with their thesis committees at least once per year will not receive an "S" in BCMG 599 and may be given a "U". Two grades of "U" in BCMG 599 will be grounds for immediate dismissal. Failure to progress may also be invoked if a student delays taking the required or elective courses, the preliminary examination, or the defense of thesis on a timely basis, as judged by the Graduate Committee. A student who has not been accepted into a research lab by the beginning of his/her second academic year will not be considered to be in good academic standing (see research rotations below)

RESEARCH ROTATIONS:

During the first of graduate school, Ph.D. students are required to do three research rotations (GEMS 506), one in the first semester (starting about half-way through) and two in the second semester. All rotations must be approved by the DGS before the rotation begins in order to receive a satisfactory grade. At the end of each rotation, students will present their work to the department in a brief PowerPoint presentation.

Unless specifically approved, students are required to do their first rotation in a laboratory within this department. After that, with the approval of host faculty member, DGS's from both departments, and the department head of the external department, students may choose to rotate in a lab within one of the other GEMS-affiliated departments. Students are encouraged to do at least two of their rotations within the department; if a student chooses to do two external rotations, s/he risks the possibility of not finding a thesis lab within the department. As noted below, it is expected that by the end of the third rotation, the student will choose a thesis lab at the end of the third rotation. If difficulties arise, a student may do an additional rotation during the summer. If a student chooses a thesis lab in another GEMS-affiliated department, s/he will be transferred to the graduate program in that department as of the beginning of the student's second year. If a student has not found a thesis advisor by the end of the summer term, the student may be dismissed from the program.

SELECTING THE Ph.D. THESIS ADVISOR:

The DGS acts as your advisor until a formal advisor is chosen. MD/PhD students should select a departmental faculty member as their advisor and have regular meetings with the advisor in the M-1 and M-2 years so that their progress can be monitored. Students must choose an advisor following their third laboratory rotation at the end of the Spring Semester of the first year (for MD/PhD students at the end of the M-2 year). This selection must include both the consent of the potential advisor and the approval of the Graduate Committee. Formal thesis research normally begins during Summer Term of the first year for Ph.D. students and during the Summer Term of the M-2 for MD/PhD students. Students will start registering for BCMG 599 at the time that they start formal thesis research.

A student may elect to change thesis advisors with the approval of the DGSs, the Department Head, and the new thesis advisor chosen by them. An advisor who wishes to have a student removed from his/her laboratory may do so with the consent of the Department Head.

PRELIMINARY EXAMINATION:

Students in their second year who have successfully completed all didactic course requirements are required to pass a preliminary qualifying examination in order to advance to Ph. D. candidacy. This examination must be completed by the end of June in the summer following the second year in the program. Please note that the Graduate College requires that you file a committee recommendation form (available at the Graduate College website: <https://grad.uic.edu/cms/?pid=1000363>) **at least 3 weeks prior to the exam.**

This examination will be based on the student's thesis proposal and include three parts:

Part 1a. A short, 5-6 page **written proposal** consisting of 2-3 pages of Background and Significance, 2-3 pages of Specific Aims/Experimental Design, and appropriately formatted references (references are not included in page limit).

Important components of the written and oral components of the thesis proposal:

- a. **Rationale** for hypotheses and experimental approaches and the **experimental support** for this rationale.
 - b. An acknowledgement of experimental **pitfalls** and suggestions of possible **alternative approaches**.
- Students may receive advice from mentors and colleagues, but the proposal must be written by the students themselves in their own words (proposals will be checked for plagiarism).
 - The student will give each committee member a copy of his/her proposal at least 1 week prior to the scheduled examination.

Part 1b. The student's mentor will be asked to fill-in a brief questionnaire regarding the student's progress in the lab.

Part 2. An **oral defense of the thesis proposal** for a committee that will include 5 professors, not including the student's Ph.D. thesis advisor. At least two of the five members will be full or associate professors with tenure. One of the five professors will be from outside the department.

- The student's mentor will not serve on the preliminary qualifying examination committee, but will replace one of the departmental members of the preliminary examination committee as the fifth thesis committee member (and chair) after the preliminary exam is successfully passed.
- The student and his/her mentor decide the membership of the preliminary exam committee. Changes in the composition of the thesis committee (versus the prelim exam committee) may be made in consultation with the student's thesis advisor.

Part 3. Students will be expected to answer **general knowledge questions** posed by the members of the examination committee. In general, these questions will be

related to the student's proposal. Students are also expected to answer specific and detailed questions directly related to the student's thesis proposal.

After the completion of the examination, the Committee Report Form signed by the members of the Committee should be returned to Graduate College. A copy for the BCMG files and transmit the original to the Graduate College. The student may pass the examination, may be given a conditional pass and assigned remedial work, or may fail the examination. If a student fails in the first attempt, s/he will generally be offered the opportunity to take a second (and final) exam at a later date.

THESIS COMMITTEE:

The Thesis Committee consists of five (5) faculty members, though more members may be added if the student or his/her thesis advisor considers it necessary. The student's thesis advisor, who will usually serve as the chairperson of this committee, proposes the committee membership for approval by the Graduate Committee. As in the case of the Preliminary Exam Committee, one member must be from outside the department, and at least two of the five members must have Associate or Full Professor status. Students are encouraged to set up their thesis committees as soon as they have successfully completed the Prelim Exam. Please submit a copy to BCMG/2150 for our records so that the information can be entered into your graduate folder. Starting from the third year, students must meet with their Thesis committees a minimum of once per year for the purpose of discussing their progress in their Ph.D. thesis research. These meetings are required to maintain Good Academic Standing, and students that fail to meet this requirement may be given a "U" in BCMG 599 (thesis research). These meetings may be arranged in coordination with the student's BCMG 595 Student Research Seminar. The committee will consider whether the student is making appropriate progress towards completion of a successful Ph.D. thesis based on the student's presentation and ability to address the committee's questions as well as the mentor's evaluation of the student's progress. Continuation of funding for the student and enrollment in the doctoral program is dependent on the committee's approval.

DEFENSE OF THESIS:

To avoid unforeseen delays in graduation, students should start the process of preparing for their thesis defense no later than a full semester before they actually plan to defend their thesis. Permission must first be obtained from the student's thesis committee before beginning to write the dissertation. To do this, the student will present an informal research seminar (Thesis Pre-Hearing) to his/her Thesis Committee. If timing permits, this may be done during a normal thesis committee meeting or a special meeting may be arranged. The Committee will recommend any additional experiments that need to be completed, or agree that sufficient material for a dissertation has been developed. The dissertation must be of such a quality as to merit publication in a well-recognized journal in the field of study. Publication of parts or the whole of the dissertation research before the Defense of Thesis is encouraged.

The dissertation should start with an introductory chapter, in which the student provides a thorough background and significance (why the research was done), and end with a discussion (or conclusion) chapter, which summarizes the results (briefly if also included

in individual chapters) and discusses their significance and future directions of the research. Intervening chapters should include the actual research (methods and results), divided by topic. Methods may be presented as a chapter or as sections within chapters that address specific aspects of the research. If some of the work has been published, the text and figures of the final accepted manuscript(s) (or submitted if not yet accepted) may be used to constitute a chapter (or chapters), but the text and figures will have to be formatted as per the University's thesis requirements, including the references which need to be included at the end of the thesis in the "Cited Literature" section.

After completion of the dissertation, an open formal seminar followed by an executive session type meeting with questioning by the Thesis Committee completes the requirement for the Defense of Thesis. The student is expected to submit a copy of the thesis four weeks prior to the thesis seminar and defense. If this timeline is met, the student may request that thesis committee members raise any issues that need to be addressed in the written document a week prior to the defense (if not requested earlier, committee members generally bring suggested changes with them to the defense) – this may be critical if the student has tight time constraints for submission after the defense. The student may seek permission from thesis committee members to submit the thesis less than four weeks before the defense, but will not be able to request that the committee members raise any issues with the written document before the defense. Under no circumstances will a thesis defense be permitted to proceed if the student has not submitted the written thesis to committee members at least two weeks before the written defense.

Please note that the Graduate College requires that you submit a Graduation Request/Committee recommendation form (available at the Graduate College website: <https://grad.uic.edu/cms/?pid=1000363>) **at least 3 weeks prior to the defense**. There are also several other important deadline dates within each semester related to when you have to submit relevant documents and your written thesis. Please check with the graduate college calendar. The Graduate College regulates the style and format for the thesis. A copy of the Graduate College Thesis Manual is available online, and is an essential reference during thesis preparation.