

DEPARTMENT OF DEVELOPMENTAL & CELL BIOLOGY

A guide for graduate students after their first year in the gateway programs.

GENERAL INFORMATION

FINANCIAL AID

COURSE REQUIREMENTS

OVERVIEW OF DEVELOPMENTAL & CELL BIOLOGY PH.D. REQUIREMENTS

OUTLINE OF REQUIREMENTS

THESIS COMMITTEE MEETINGS

ADVANCEMENT TO CANDIDACY EXAM

TUNE UP MEETINGS AFTER 4TH YEAR

GENERAL INFORMATION

DEPARTMENTAL OFFICE AND ADMINISTRATION

Ken W.Y. Cho, Chair, 2212 Bio Sci 3, x42458, x44067, kwcho@uci.edu

Kavita Arora, Vice Chair, 4215 McGaugh Hall, x41087, karora@uci.edu

Lee Bardwell, Graduate Student Advisor, 2208 Natural Sciences I, x6902, bardwell@uci.edu

Thomas Schilling, Graduate Student Advisor 4109 Natural Sciences II, x42479, tschilli@uci.edu

Andrea Wiley, Department Administrator 2104 BS3, x44706 amdenish@uci.edu

Amy Horwitz, Contract and Grant Officer 2110 BS3, X43489, ahorwitz@uci.edu

Grace Kuei, Payroll and Personnel 2102 BS3 x44707, ykuei@uci.edu

Eleanor Chan, Financial Analyst, 2108, BS3, x49869, echan@uci.edu

Li-Yu Chen, Financial Analyst, Account Manager, 2106 BS3, x44710 liyuc@uci.edu

Kathy Deal, Grant Analyst, Account Manager, 2122 BS3, x45687, kdeal@uci.edu

Linda Fernandez, Assistant Administrative Analyst/Graduate Program 2011 BS 3, x46681, lcfernan@uci.edu

For matters concerning enrollment, progress, deadlines etc. please contact Dr. Bardwell or Ms. Fernandez.

- The department office (Rm 2011, Bio Sciences III) has a Fax machine available.
- For photocopying, you will be provided with a personal number by your faculty sponsor.
- For copying services in the libraries, you will need a copy card.
- Parking/Escort services are available 24/7, 365 days a year on campus, University Apartments and University Center. Call 824-SAFE (7233).

EMERGENCIES: You have access to fire, rescue and police at the 911 emergency number. The non-emergency number for campus police is 824-5223 (45223 from campus phones).

LABORATORY USE: Your research advisor's laboratory is under his/her direction. You need to receive formal training and certification in the use and disposal of toxic and radioactive waste.

STIPENDS AND ENROLLMENT: You must enroll each quarter through TELE. You are expected to enroll full time (minimum 12 units) each quarter. **This is YOUR responsibility each quarter.** A late fee of \$50 is assessed if not paid by fee deadline, increasing to \$50 if you have not enrolled by the second week of the quarter.

The consequences of late registration are:

- a) You must pay the late fee as described above.
- b) On non-student status, you will have federal deductions from your paycheck, which will affect your eligibility for housing.

For US citizens who are non-residents of California, you should become a legal resident of the state by the beginning of the second year. This will reduce the tuition fees considerably. A change of residency must be recorded in the Registrar's Office BEFORE the fee deadline.

Normally the deadline is four weeks before the start of the Fall quarter. For the documentation required, call the Registrars office at extension x46124.

For foreign students, tuition is reduced to the California resident rate after advancement to candidacy. This reduction in rate is a very important savings for the grant that is paying the stipend. Advancement to candidacy is recommended by the end of the third year if possible.

Every student receives a stipend from the Department on the same schedule, unless they are on a training grant. The schedule changes when you move from the Combined Program to a Department. This results in one-month gap with no pay (the Combined Program pays at the beginning of the month in advance; the Departments pay at the end of the month in the arrears). Graduate students have health benefits and eligibility for student loans provided with full-time enrollment.

Beginning with students entering in Fall 2010, the Graduate Dean will not permit students to enroll past their programs' maximum time to degree (7 years).

Other contact information:

Mike Mulligan, Associate Dean of Graduate Studies, 5217 McGaugh Hall, x48433, rmmullig@uci.edu

Department website: <http://www.ucidevcell.org/>

Office of Research: <http://www.research.uci.edu/>

Graduate Division: <http://www/grad/uci.edu/>

FINANCIAL AID

Traineeships: Beyond stipends from Departmental sources, including Teaching Assistantships and research funds that support the student's laboratory, several Traineeships on a variety of NIH or other Training Grants are available. The directors of various Training Grants announce notice of openings to the faculty members and student sponsors who make nominations of students.

Campus/ School Dissertation Fellowships: These are designed for students in the last quarter of their degree work. These fellowships (e.g., President's Dissertation Year Fellowship, Graduate Dean's Dissertation Fellowship) are competitive and are announced once or twice each year by the Graduate Advisor.

Travel: The school, Training Grants, and the Graduate Division have modest funds for support of travel to meetings. These funds are used for students to present their research. Dissertation Directors commonly have funds in their research grants to provide for travel to meetings or other institutions for experimental work.

Other fellowships: A number of UC and national fellowship programs provide support for graduate study. Students may take initiative in obtaining these awards, and the Graduate Advisor will attempt to provide information about them as they become available.

COURSE REQUIREMENTS

NOTE: All courses must be passed with a grade of “B” or better, or by an S (satisfactory). Students receiving a “C” or lower must repeat the course before they can advance.

First Year: Students must enroll for a minimum of 12 units each quarter and take appropriate courses. The exact required courses may vary in different gateway programs. In addition, students must take a TA training course by the Spring Quarter.

Second Year: Each quarter you must enroll in a suitable number of units in the 200 and 203 series. In addition it is also mandatory you enroll and attend the weekly Department Seminars Series, 290 and Journal Club, 206. As a Teaching Assistant this year you will also need to enroll in 399, University Teaching.

Third Year: Requirements are 12 units, which can be attained by the 200 and 203 series, 206, Journal Club and 290 Seminar Series. As a Teaching Assistant, you will also need to enroll in 399, University Teaching.

Fourth Year and beyond: Requirements are 12 units, which can be attained by the 200 and 203 series, 206, Journal Club and 290 Seminar Series.

OVERVIEW OF DEVELOPMENTAL & CELL BIOLOGY PH.D. REQUIREMENTS

Year 2

Selection of your thesis advisor makes you a member of the graduate program in Developmental and Cell Biology. You will be expected to participate in at least one journal club per quarter, attend Departmental Seminars as a member of Developmental and Cell Biology, and serve as a TA for undergraduate classes. During this second year you should, in conjunction with your advisor, identify an interesting, tractable research problem, which will result in a thesis over the following 2-3 year period. You should focus on developing the knowledge and technical skills necessary to successfully complete the proposed project. We strongly encourage you to have an informal meeting with your thesis advisor and possible committee members.

Year 3

Choosing an Advancement Committee (Fall): You will select a 5-member advancement to candidacy committee before the end of fall quarter in the 3rd year. First presentation to the committee will occur at the end of fall quarter and requires the student to prepare a short 1-2 page outline regarding progress to date and proposed thesis direction. The committee should provide input and feedback that may influence the direction and focus of the advancement to candidacy exam.

Teaching: Students will be required to fulfill their teaching obligations throughout during their second and third year of graduate school. You will not be able to advance until your TA ship is complete.

RIP talk: Students will be required to attend journal clubs and present their work at journal clubs.

Advancement timing (Fall): Advancement MUST occur between the end of the 3rd (Spring) quarter of the 3rd year and by the first (Fall) quarter of the 4th year. By this time the student will have been in the lab about 2 years and should have generated enough preliminary data to allow evaluation of the thesis project chosen and the likelihood of success.

Advancement format: A written proposal in NIH format (approx 10 pages in total length) should be prepared by the candidate and distributed to the committee at least 1 week prior to advancement. The thesis advisor will prepare a written summary of the meeting and the committee and student should sign it. These two documents must be filed in the Department Office before the advancement documents are sent to Graduate Studies. If a terminal masters is recommended then the student will have 3 months in which to complete the research and to write a Masters Thesis.

Year 4 and beyond

Each student is required to do one tune-up meeting per year until receiving Ph.D. After the completion of the meeting, the form should be signed and submitted to the Dept office. Failing to meet this requirement by the end of the Spring quarter will result in blockage of your class registration, and you will be responsible for the penalty fee (e.g., late registration fee) associated with the action.

Format of Tune-ups: A summary (2-3 pages) of the past 12 months progress will be prepared by the student and presented to each committee member at the tune-up meeting. The student's file containing the advancement proposal, previous research summaries (if applicable), and previous comments of the committee (if applicable) will be brought to the meeting. A written summary of the outcome of meeting and any comments by the committee will be recorded on a prepared form. This will be signed by the advisor, committee members and the student and will be retained by the Department Office.

Final Ph.D. time frame and research goal establishment: The final 12-month tune-up will be a comprehensive overview of current progress to date. At this meeting a series of experiments to be accomplished for the Ph.D. and a tentative end date will be discussed.

Evidence of quality of research by publication in peer reviewed journals: It is expected that a student receiving a Ph.D. will be able to identify a significant body of work that they have been primarily responsible for the formulation of the experiments, acquisition and interpretation of the data, and writing of the manuscripts. Students must have at least one first author or joint first author paper that is published or accepted for publication in a peer reviewed journal before the thesis defense can be scheduled. A submitted manuscript does not meet the requirement.

RIP talk: Students will be required to present their work in the departmental seminar series. The presentation shall be 25 min.

OUTLINE OF REQUIREMENTS

Year 2

- Choose thesis advisor
- TA assignments (50%, 1 quarter)
- Attend Journal club (one per quarter)
- Attend Departmental seminars

Year 3

- Pre-advancement (Fall or Winter quarter)
 - 5-person thesis committee
 - Submit 1-2 page outline summarizing progress and proposal
 - Meet with committee
- TA assignments (50%, 1 quarter)
- Research presentation at Journal club
- Attend Journal club (one per quarter)
- Attend Departmental seminars
- Advancement (Spring Quarter of 3rd year or Fall Quarter of 4th year)
 - Submit proposal in NIH format (approx 10 pages) at least a week in advance
 - meet with committee members

Year 4

- Advancement (Fall Quarter) if this has not been completed already.
- One RIP (Research In Progress) talk
- Attend Journal club per quarter
- Attend Departmental seminars

Year 5 and beyond

- Minimum of one tune-up meeting per year to discuss overall progress.
- One first author paper is required to graduate
- One RIP talk
- The committee must meet and determine the defense date.
- Attend Journal club per quarter
- Attend Departmental seminars

THESIS COMMITTEE MEETINGS

CHOOSING AN ADVANCEMENT COMMITTEE: In the fall of your third year you must choose a committee to oversee your advancement to candidacy. The committee is composed of a minimum of 5 faculty members, and you should select the committee members in consultation with your thesis advisor. The chairman of the committee is your thesis advisor. The majority of members (at least 3/5 or 4/6 etc.) must be “internal” faculty members, appointed in Developmental and Cell Biology. In addition, at least one committee member must be “external”, having a UC faculty appointment NOT in Dev and Cell Biology, but in some other Department. This member can have an appointment in any other Department or School at UCI, including biologically related disciplines.

***The proposed candidacy committee must be approved by your Principal Investigator AND the Graduate Advisor.**

PREADVANCEMENT: It is your responsibility to schedule this meeting and to submit a 1-2 page outline of your thesis proposal (brief Introduction and Specific Aims) to each member of the committee. All members of the advancement committee must be present at the meeting. The goal of this meeting is to provide input and feedback on your thesis proposal ideas from the faculty at an early date.

ADVANCEMENT: The Advancement Exam must be taken by the fall quarter of the 4th year. It is your responsibility to schedule this meeting and to submit a 10-15 page of your thesis proposal to each member of the committee at least one week before the committee meeting. See p11 “Advancement to candidacy Exam”.

TUNE UP MEETINGS: Once you pass the advancement exam, you are required to have a tune-up meeting with your thesis advisors at least once a year until graduation. Your thesis committee members should consist of a minimum of three faculty members (choose the members from the advancement committee), and the majority of the members must be the “internal” faculty members, appointed in Developmental and Cell Biology. Again, it is your responsibility to schedule this meeting and to submit a 1-2 page summary report to each committee member. Upon completion of the meeting, a form (obtained from Ms. Fernandez) needs to be filled by the committee members and you must also sign the form. The form will be handed into the Department office and this must be filed immediately. Failure to do so may jeopardize your graduation.

**** Once you form this committee, they remain as your thesis committee members until you graduate. If you must replace a member, this must be done in consultation with the approval of the graduate advisor.**

****If you fail to file your committee report by the end of each academic year, your registration in the subsequent year will be blocked and you will need to pay the penalty.**

TUNE-UP FORMAT: All graduate students in Developmental and Cell Biology are required to meet with their committee once a year from the 3rd year on. This meeting should be designed

to acquaint the committee with your research area, both the major questions your work addresses and the preliminary studies you have done and hope to do in the next 12 months. A suggested outline for the presentation is 30-45 min. with some background information, data (gels, graphs etc.) and summary. The level of formality at this meeting is up to the student and his or her committee, but generally it should be relatively informal.

ADVANCEMENT TO CANDIDACY EXAM

The following guideline was prepared to provide clarity on the purpose and format of the exam, and serves as a description and guideline for your preparation for your advancement.

Goal: The purpose of the exam is to determine if the student is capable of Ph.D. quality research. This encompasses two related aspects: 1) defining a tractable research problem; and 2) demonstrating requisite knowledge, skills and experimental sophistication to convince the committee that there is a high probability for the project to succeed.

Timing: The Advancement Exam must be taken by the fall quarter of the 4th year.

Written Proposal Format: Prepare a written thesis proposal that follows conventional format for a federal grant. The manuscript should be prepared with proper scientific nomenclature, as would be acceptable to a granting agency. The document should be approximately 10-15 pages excluding references. The document should include the following sections.

- 1) Specific Aims (1 page). It is the single most important section in the proposal. It's the master plan for the rest of the proposal and the most difficult section to write. The logic of each aim must be compelling and the answers must be important to the field. Whenever possible, test a hypothesis in the specific aim title. The Specific Aims should not be a list of experiments. Do not write aims that can be viewed as "a fishing expedition".
- 2) Introduction (2-3 pages). Problems and objectives of your research should be clearly stated and placed in context. An extensive bibliography should be included. This section should lead the reader to each question or hypothesis that you're testing in each aim. Significance of the project should be also included here.
- 3) Preliminary results (3-5 pages). This section should include your research efforts. Appropriate discussion and methods are important. While you don't have to know the outcome of each experiment, you should show how you can perform all of the necessary techniques and methods. Please embed figures into the text and include a brief legend. Figures and Tables must be absolutely clear and visible.
- 4) Proposed research (3-6 pages). The proposal should address the feasibility of various experiments and point out caveats that might be encountered and how these could be circumvented. Be sure to include positive and negative controls, analysis and Interpretation, pitfalls and alternative approaches, and somewhat detailed methods. Outline your priority.

****The document should be distributed to the advancement committee at least one week prior to the oral presentation.**

Oral Presentation format: The oral portion of the exam will involve the presentation of background material, preliminary results and a summary of proposed experiments. The presentation should be ~40-45 minutes (30-40 Powerpoint slides), although committee discussion will usually interrupt the flow. During this time the committee will evaluate whether or not you have the ability to formulate questions on important biological questions. You may be asked to discuss experimental design, required controls for an experiment, and possible artifacts or caveats. You will be expected to place the significance of the research project in a broad context. The advancement exam is different from the Preliminary (Qualifying) exam that is given at the end of the first year. In the advancement exam you will be expected to demonstrate in-depth knowledge of the discipline in which you are working. Thus, you should be prepared to elaborate on the background information within that discipline if requested by the committee.

****The exam should be scheduled for a three hour time period, although typically last about two hours.**

Possible outcomes and consequences: There are four possible consequences of the exam: 1) you pass the exam and should expect to go into 1-3 more years of lab work to complete the Ph.D. thesis; 2) you do not pass, which may have several consequences ranging from having to prepare a new advancement document OR providing additional experimental results OR additional tutorial or course work to remedy any deficiencies; 3) you may be transferred to a Masters degree program; 4) you may be terminated from the graduate program.

TUNE UP MEETINGS AFTER 4TH YEAR

All students who have passed their Advancement exam are required to meet with their committee once a year. This is to provide input and feedback for the students from the faculty. A form (obtain from Ms. Fernandez) which each of you will take to the tune-up is to be signed by your committee members and returned to the graduate office following the exam.

****If you fail to file your committee report by the end of each academic year, your registration in the subsequent year will be blocked and you will need to pay the penalty.**

Scheduling: You and your committee agree to a date and time for tune-up.

Format: You will present your ongoing research, problems, interpretations of data, and future research plans. We suggest a 60 min talk, 15 min summarizing your research accomplishments (e.g. highlight any papers prepared, submitted, published, describe techniques mastered), 30 min going over the progress over the past 12 months (e.g., data interpretations problems encountered), and 15 min describing experiments to be finished for PhD and timetable. Please make sure to outline timetable for 1) completion of particular projects including preparation and submission of manuscripts, and 2) completion of thesis and defense.

Completion: The tune-up will not be considered complete until a form signed by your advisor and committee members is returned to the graduate coordinator. This form will have two categories

- The above student is making satisfactory progress toward their Ph.D. See comments
- The above student is not making satisfactory progress toward their PhD.

****Should you fall into the second category you will meet with the graduate advisor and the thesis advisor to discuss the options.**

If you are thinking about defending your thesis anytime soon you must have at least one first author or joint first author paper that is ACCEPTED for publication in a peer-reviewed journal before the thesis defense can be scheduled. Additionally, you are required to have a committee meeting within 3 months before scheduling your defense and the committee must endorse the defense. Your thesis must be completed one week before the defense date and this must be given to all members of your thesis committee.

Thesis Defense: You must defend your thesis by providing a formal 1-hour seminar that is open to the public, which will be followed by a closed committee meeting to evaluate your performance. All committee members should be present during the thesis defense unless an exceptional circumstance prevents the entire committee members to be present.