

# Microbiology & Molecular Genetics

## Graduate Student Handbook

<http://www.microbiology.uci.edu/>

### Content:

Introduction	p2
General Information	p3
Courses and Enrollment	p4
Stipends, Travel Funds and Health Insurance	p4
Seminars and Graduate Student Duties	p5
End of Second Year Pre-Advancement Meeting	p5
Advancement to Candidacy	p6
Dissertation Presentation	p7
Individual Development Plan	p8
Research Units Work Expectations	p8
Policies to Reduce the Time to Degree	p9
Policy for Conferring a Masters Degree	p10
List of Classes	p11
Graduate Students in the Department	p13

# **Introduction**

This brief handbook is designed for graduate students who transferred from the Cellular & Molecular Biosciences (CMB) or other umbrella graduate programs to carry out their Ph.D. thesis research in the Department of Microbiology and Molecular Genetics. We hope it will provide you with practical information that will make your research and academic endeavors both productive and enjoyable. Our Department has a long-standing tradition of "personalizing" its graduate program and designing activities that will enhance your research experience here at UCI in a way that will have a long-term, positive impact on your scientific careers.

The course work offerings for students in their second year and beyond include the Thursday morning seminar series (M&MG 201 A-B-C), tutorial (M&MG 280 A-B-C), and other seminar/special topics courses. These offerings provide unique and challenging opportunities for all graduate students to give oral presentations on their own research results, as well as on selected literature topics. Such opportunities allow students to develop seminar presentation skills that are both highly polished and professional. These skills, along with the development of your research acumen and analytical abilities, will be an invaluable part of your repertoire of scientific talents.

In addition to your individual development, the Department also tries to provide a collegial environment that encourages camaraderie and scientific/social interactions among students, faculty, postdocs, and staff. It is our hope that the "user-friendly" environment in the Department will allow you the freedom to develop your creative skills as a research scientist and will enable you to engage in highly productive, innovative research projects to set you off in the right directions for your scientific careers.

For those of you just joining the Department, we wish you a warm welcome and a rewarding scientific experience with us!

Rozanne M. Sandri-Goldin  
Professor and Chair

Klemens J. Hertel  
Professor and Vice Chair, Graduate Student Advisor,  
Associate Dean of Graduate Studies, School of Medicine

## General Information

Upon your arrival, please come into the office with someone from your lab and introduce yourself. You will need to sign out for keys to the outside door and to the lab in which you are working. A mailbox with your name on it will be assigned to you.

Your lab key opens the departmental office door to allow you to use the conference room/library after closing hours and on weekends. You may also use the copy and fax machines. However, we hold each individual responsible for making sure the books/journals are back on the shelves, the copier is off, the lights are off, and the office doors are closed and locked before leaving. The staff computers, desks, and equipment in the individual cubicles are not to be disturbed.

If you are sending a fax, please use a laboratory code. If you are waiting for a fax, you should check the fax machine and then your mail box.

Please feel free to ask anyone of the office staff to show you how to use the equipment. The office staff are:

Leslie Dowd, Chief Administrative Officer	<a href="mailto:ldowd@uci.edu">ldowd@uci.edu</a>	ext. 4-7930
Kimberly Smith-Lyons, Senior Financial Analyst	<a href="mailto:smithkl@uci.edu">smithkl@uci.edu</a>	ext. 4-2908
Shanti Iyer, Graduate Student Coordinator	<a href="mailto:shantii@uci.edu">shantii@uci.edu</a>	ext. 4-7669
Brian Guinea, Personnel Coordinator	<a href="mailto:bguinea@hs.uci.edu">bguinea@hs.uci.edu</a>	
Stephanie Ching, Purchasing Coordinator	<a href="mailto:anpurchasing@uci.edu">anpurchasing@uci.edu</a>	

The basic rules are to respect the equipment and belongings of each lab and the office, not to use other labs' equipment/computers without asking permission from the faculty members, not to borrow anything without asking, and to clean and lock up after oneself. If there is a facilities problem such as a flood, it should be reported to the trouble service (ext. 4-5444). The police emergency number (911) can also be dialed for assistance.

Parking and Transportation Services provides an escort service from 6:00 a.m. to 1:00 a.m. from one place to another on campus. After 1:00 a.m., the phone transfers to the police station and the police will then provide the escort service. The number is 949-824-7233. The escort service should be used if you are leaving your lab late at night.

## **Courses and Enrollment**

Each quarter you will receive a schedule of classes. As you know, you can register through Web Reg. Enrolling in enough classes/units before the deadline is a **MUST** each quarter. You must sign up for MMG 200, 201, and 203 every quarter. If you do not register in time you:

- will have to pay late fees,
- will not meet the IRS FICA exemption and be subject to having the 7.5% DCP and 1.45% Medicare deducted from your paycheck,
- must use the Add card procedure for late registration and fill out a late registration form justifying why you are registering late.

All students need to take the appropriate actions to ensure they are residents of the state of California by the second year. Nonresident students who need to become California residents for tuition/fee purposes must have their status changed at the Registrar's Office PRIOR to the fee payment deadline for the fall quarter.

Documentation of residence will be required. Please call the Registrar's Office at extension ext. 4-6124 for details. If you have further questions please see Krista Frederickson.

When your address or phone number changes, please notify both the Registrar's Office and the departmental CAO in the Microbiology & Molecular Genetics Office.

## **Stipends, Travel Funds and Health Insurance**

You will continue to receive a monthly stipend and your fees will be paid. You should already be aware of your health benefits, but if you have any questions, please see Leslie Dowd (ext. 4-7930) in the main office.

Emergency loans are available through Financial Aid. The phone number for Financial Aid is ext. 4-6261. The maximum amount for a short period of time without interest is \$100.00.

## **Seminars and Graduate Student Duties**

Students in the second year may be required to be teaching assistants (usually up to three courses total, which will be determined by BioSci departments). We believe this to be valuable both for the experience this offers in teaching, and in exchange for a portion of the graduate stipend. Students whose primary language is not English must take and pass the Test of Spoken English (TSE) or the TOEP after at least one attempt at the TSE exam. Exceptions to this requirement will not be granted. A minimum score of 50 is required in order to be a teaching assistant. The TSE is given six times during the year at TOEFL test centers. See Shanti Iyer if this applies to you. Once you've been appointed a teaching assistantship, you should enroll in the 399 series. This will give you credit for your teaching.

The Department of Microbiology and Molecular Genetics holds a number of seminars. Two of them are the Thursday Morning Series "201", which is given by our graduate students and postdocs, and the Wednesday afternoon bi-weekly seminar given by speakers from outside the University of California, Irvine. Attendance at both seminar series is mandatory. The instructor of the Thursday morning seminar course must be notified if a student will miss an upcoming seminar due to teaching conflicts, travel, or illness. Student responsibilities also include making coffee for the Thursday morning seminar and shopping for the food and drinks for the Wednesday seminar reception. The Graduate Student Representative is responsible for assigning the dates and times for these duties. The Graduate Student Representative is appointed by the Department Chairman and Graduate Advisor on a yearly basis, and as compensation, receives a small compensation to be used for research activities of his/her choice. For seminars other than "201," the faculty member who is hosting the speaker assigns a student host from the lab. The student host will organize a group of a total of three students or postdocs and the speaker to go to lunch. Larger numbers should receive prior approval. Funding the reception is available up front from the departmental CAO, but receipts must be returned.

Students may also be required to prepare media for the Medical Microbiology course held annually in the Fall.

## **End of Second Year Pre-Advancement Meeting**

Following successful completion of the Qualifying Exam at the end of your first year of graduate study, the next step toward the doctoral degree is demonstrating research progress towards the Advancement to Candidacy. All second year students are required to convene a pre-advancement committee meeting at the end of their second year (i.e. end of the spring quarter – not in the summer). The committee should consist of the PI (silent participant) and two other MMG faculty members. The purpose of this meeting is to ensure that all second year students have accomplished reasonable progress in their research during their first full year in MMG. There is no written component for this meeting. However, all students are expected to prepare a presentation (between 30-45 min) for the pre-advancement meeting. During the oral presentation the committee will discuss the research with the student. After this discussion, the committee will excuse the student from the room and evaluate the student's performance.

## **Advancement to Candidacy**

Following successful completion of the second year of graduate study, the next step in progression toward the doctoral degree is Advancement to Candidacy. The purpose of this process is to ensure that the student has selected an appropriate topic for the dissertation and that the experimental work that has been completed or is contemplated is scientifically rigorous and likely to be completed successfully and within the normal period of graduate study (approximately 5 to 6 years).

The advancement to candidacy exam must be taken by the end of the Spring Quarter of the third year of graduate study. The exam committee will consist of five members. One member will be your advisor who will serve as Chair of the committee. At least one member must be faculty outside the MMG Department. Adjunct MMG faculty members are not considered to be outside the department. It is important to emphasize that the majority of members must be MMG faculty. Prior to the exam, the student must obtain Ph.D. Form I. The forms are available on the Web at <http://www.grad.uci.edu/forms>. Then click on "Advancement to Candidacy - Ph.D. Degree (Ph.D. Form I)". If you have any questions filling out the forms, Shanti Iyer will be happy to help you.

A written research proposal modeled after an NIH grant application must be submitted to the committee members at least two weeks before the oral presentation. It should include the following sections: Specific Aims (1 page), Research Strategy (12 pages) that includes, Significance, Innovation, and Approach. The proposal is limited to 13 pages (single-spaced, 12 point type) including embedded figures, but excluding references. During the oral presentation the committee will discuss the proposal at length with the student. After this discussion, the committee will excuse the student from the room and evaluate the student's performance. The committee will inform the student of its decision immediately after that meeting.

The Doctoral Committee is composed of at least three members from the Advancement Committee with the exception of the outside member. The chair and a majority of members should be from the department. The student may opt to retain more than three members for the Doctoral Committee. The committee shall meet with the student no less than once a year to evaluate the student's progress and plans for future work. To document that the student has convened a yearly committee meeting, a form (obtained from Shanti Iyer) must be signed by all committee members. This form is included in the student's file so that the Graduate Advisor can make sure that the student is being properly advised. Beginning in the third year, students are expected to present their research in the Thursday morning research seminar series. A convenient time to have their committee meeting is at the time of this yearly seminar. Additional meetings may be called, as necessary, by request of the student or advisor.

## **Dissertation Presentation**

The written and oral presentations of a student's Dissertation are the criteria for receiving the Ph.D. degree. The student must meet with the Doctoral Committee and present a reasonably complete draft of the thesis and receive the approval of the Committee before scheduling the oral thesis defense. A detailed handbook is available on the Internet through <http://www.grad.uci.edu>. Go to "Current Students", then "Thesis/Dissertation" to access instructions for thesis/dissertation submission requirements. In addition to the hard copy an electronic thesis must be submitted after the defense.

When a date is arranged for the defense of the Dissertation, go to the graduate student forms page (<http://www.grad.uci.edu/forms/>) and click on "Ph.D. Form II/Signature Page - Report on Final Examination for the Ph.D. Degree". These forms, together with the signature page from the dissertation, will be signed by the Doctoral Committee at the time of the oral defense and will be submitted with the final draft of the Dissertation to the Library Archives. Students who will complete their graduate requirements within the following academic year are allowed to participate in the UC Irvine graduation ceremonies. Caps and gowns may be rented in advance from the UCI Alumni Association. Be sure to go over to the Archives at the Main Library and pick up a dissertation packet. It will have all the requirements for your thesis preparation.

## **Individual Development Plan (annually)**

### **Policy:**

Doctoral students will be required to complete an [Individual Development Plan](#) (IDP) on an annual basis in consultation with their faculty advisor. This will help graduate students to structure their goals, identify skills and competencies that need to be developed, maintain a record of their achievements, and start conversations with their advisor about career goals. Programs may use the Graduate Division IDP template or modify the document to include additional questions relevant to the discipline.

### **Implementation:**

By the end of each fall quarter, faculty and graduate students submit a signed copy of their annual IDP discussion to the departmental graduate coordinator (Shanti Iyer) to be kept in the department's confidential student file.

## **Research Units Work Expectation Documentation (quarterly)**

### **Policy:**

Faculty will be required to provide written expectations for all graduate research units they direct. This may be a syllabus, or a brief outline of work expected to be completed within the quarter. Implementation of this policy will ensure that both the faculty member and graduate student have a clear understanding of expectations of work to be completed within a given quarter.

### **Implementation:**

For graduate research units only, faculty and graduate students must hold individual meetings during the first instructional week of each quarter to discuss research work expectations. *A signed outline of the agreed upon work expectations will be submitted to the departmental graduate coordinator (Shanti Iyer) by the end of the first instructional week.* A copy of this outline will be kept in the department's confidential student file.

# **Policies to Reduce the Time To Degree (TTD) for PhD Students to 5 Years**

The MMG faculty implemented strategies to reduce the TTD for PhD graduate students from the current average of 6.0 years to the university-suggested 5.0 years. Recently established departmental policies are likely to decrease current student graduation times. These include:

## **Policies already in place:**

- Enforce the policy that students must advance to candidacy by the end of their 3<sup>rd</sup> year of study. Failure to do so may result in academic probation.
- To ensure early progress towards establishing an attainable thesis project and to ensure that students are on track for a timely advancement to candidacy, all students convene an end-of-second year exam. Student performances are evaluated using a pass/fail option.
- Starting their 3<sup>rd</sup> year of study, each PhD student will give formal Research in Progress presentations.
- Recurring committee meetings (one per year) after advancement to candidacy.
- Annual Individual Development Plans.

## **New policies:**

- Increase the frequency of thesis committee meetings from 1/year to 2/year for students in 5<sup>th</sup> year and beyond.
- All matriculated MMG students will be reviewed by the entire faculty on an annual basis. The thesis mentor presents the advances/progress/accomplishments/limitations of their student(s). The ensuing discussion among the faculty may lead to policy changes in dealing with individual students, for example by requesting to increase the frequency of committee meetings or by setting new deadlines. A summary of the discussion will be shared with the PhD candidate and placed into their academic folder.
- Salary and tuition support for PhD graduate students is no longer guaranteed after 5 years of studies. The intent here is to define an expected graduation timeframe to which students and faculty will adhere.

## **Exceptions to the policies listed**

Exceptions to any of the listed policies can be granted upon mutual agreement by the PhD candidate, his/her thesis advisor, the departmental graduate advisor, and the department Chair. A written plan needs to be submitted.

# **Policy for Conferring a Master's Degree**

## **Minimum Academic Requirements:**

A student requesting a transfer from a PhD degree to a Master's degree must complete 2 years of training. The following requirements must be met to confer the Master's degree. In addition to the final comprehensive examination (Plan II - Comprehensive Examination), a minimum of 36 quarter units in approved courses, at least 24 of which must be from graduate-level courses in the 200 series.

### **First year:**

- must have completed and passed all required first year CMB classes
- must have completed all necessary rotations as stipulated by CMB

### **Second year:**

- 200 A, B, C - credit for laboratory research [Graded, based on performance]
- 203 A, B, C - credit for organized group study based on readings, discussions, presentations given within each lab group [S/U]
- 201 A, B, C - The Thursday Morning Seminar series given by graduate students, postdocs and faculty [Graded, based on attendance]
- Students must have a minimum of 12 units per quarter
- Students must file and advance to candidacy no later than the winter quarter of their second year
- Students complete their Final Examination Master's studies during the spring quarter

### **Advancement to Candidacy**

In accordance with University of California policy, students must be advanced to candidacy for their degree prior to the beginning of the final quarter of enrollment. An *Application for Advancement to Candidacy* initiated by the student and approved by the academic unit should be submitted to the Graduate Dean before (preferably 30 days before) the opening of the quarter in which the degree is expected. The composition of the advancement committee

### **Final Examination:**

A student transferring into a terminal Master's program will have to pass a final examination after the Advancement to Candidacy. The examination is identical to the "End of Second Year" exam all MMG students must pass to maintain "good academic standing".

Upon request and with the approval of the Mentor, the MMG Graduate Advisor and the Chair, the final examination can be replaced with the submission of a Master's thesis.

## **Financial Commitments and Responsibilities**

Upon agreeing to the transfer from the PhD program to the Master's program the Research Advisor (the mentor who has taken over financial responsibility for the student after the first CMB umbrella year) is officially relieved from the financial responsibility of supporting tuition and stipend payments for the Masters student.

Unless mutual agreed upon arrangements are made between the student and the research mentor, the student will solely be responsible for future tuition and stipend payments from the decision date onwards. Upon consultation with the mentor and the department chair, the department of Microbiology and Molecular Genetics may offer additional financial stipend support for up two months.

## **Deviations From the Policy**

Any deviation from the MMG policy requires the consent from the Research Advisor, the MMG Graduate Advisor and the Chair.

# List of Classes

Every student should enroll every quarter in:

- 200 A, B, C - credit for laboratory research [Graded, based on performance]
- 203 A, B, C - credit for organized group study based on readings, discussions, presentations given within each lab group [S/U]
- 201 A, B, C - The Thursday Morning Seminar series given by graduate students, postdocs and faculty [Graded, based on attendance]

**You must have a minimum of 12 units per quarter.**

At the end of the first year you will have completed all of the course requirements of the CMB program. From your second through fifth year, you are required to take one elective course per year.

A list of the currently offered courses from the department of Microbiology and Molecular Genetics can be found online by clicking the following link: [http://catalogue.uci.edu/allcourses/m\\_mg/](http://catalogue.uci.edu/allcourses/m_mg/)

A list of additional approved elective courses organized by other departments follows. If you and your advisor identify a course not on this list, which you judge to be useful to your course of study, a substitution can be made with the approval of the graduate advisor.

- 1) Advanced Molecular Genetics (BC 207)
- 2) Chromatin Structure and Function (BC 225)
- 3) New Breakthroughs in Basic and Translational Cancer Research (BC 240)
- 4) Organometallic Chemistry (Chem 216)
- 5) Metallobiochemistry (Chem 218)
- 6) Representations and Algorithms for Molecular Biology (CompSci 284A)
- 7) Mouse Developmental Genetics (Dev Bio 207)
- 8) Advanced Developmental Genetics (Dev Bio 210)
- 9) Principles of Genomics (Dev Bio 214)
- 10) Cell Biology (Dev Bio 231B)
- 11) Stem Cell Biology (Dev Bio 245)
- 12) Nucleic Acid Structure and Function (Mol Bio 203)
- 13) Proteins (Mol Bio 204)
- 14) Molecular Virology (Mol Bio 205)
- 15) High Resolution Structures: NMR and Xray (Mol Bio 211)
- 16) Integrative Immunology (Mol Bio 215)
- 17) Cancer Biology I (Mol Bio 217A)
- 18) Cancer Biology II (Mol Bio 217B)
- 19) Advanced Topics in Immunology (Mol Bio 221)
- 20) Introduction to Computation Biology (Mol Bio 223)

21) Physiology of Ion Channels (Physio 232)

22) Introduction to Proteomics (Physio 252)

During the 2<sup>nd</sup>-5<sup>th</sup> year students may also be selected for a teaching assistant position to gain teaching experience. Students interested in TAing should put their names on a departmental list of potential graduate student TAs, typically solicited the quarter before TA appointment.

# Graduate Students in the Department

## Graduate Students by Laboratory:

Alan G. Barbour – **Ana Milovic**

Emiliana Borrelli – **Robert Lewis, Lauren Otsuka**

Alan L. Goldin

Anthony A. James

Klemens J. Hertel – **Francisco Gutierrez Carranza, Jessie Altieri**

Orkide Koyuncu – **Stephanie Salazar**

Gina Lee – **Cuauhtemoc Ramirez**

Matthew Marsden – **Jose Moran**

Michael McClelland

Rozanne M. Sandri-Goldin

Bert L. Semler –

Yongsheng Shi – **Kristianna Sarkan, Liang Liu, Lindsey Soles, Marielle Valdez Yadollahi**

Ming Tan – **Kevin Wang**

Marian L. Waterman – **Linzi Hosohama**

## Graduate Students in Laboratories of Joint Faculty:

Rosa Andrade – **James Tirtorahardjo**

Michael Buchmeier

Michael Demetriou

Timothy Downing – **Lauren Urban, Annie Trinh**

Suzanne B. Sandmeyer

Xiangmin Xu

## Professor Emeriti:

Sidney H. Golub

George A. Gutman

G. Wesley Hatfield

Eric Stanbridge