

Ph.D. Program in Molecular Biology, Genetics and Biochemistry (MBGB)

<http://www.bio.uci.edu/academic/grad/mbgb.html>

Google - MBGB

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MBGB Program Administration

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- Can be consulted on
 - Finances
 - Residency requirements
 - Scheduling of TSE exams
 - Housing
 - Etc.

12 tracks

Biomedical Informatics

Structural Biology & Molecular Biophysics

Mechanisms of Gene Expression

Cell Biology

Stem Cell Biology

Developmental Biology and Genetics

Molecular Neurobiology

Cancer Biology

Immunology

Biology of Infectious Disease

Experimental Pathology

Virology

Seven Departments

School	Department
Medicine	Anatomy & Neurobiology
	Biological Chemistry
	Microbiology & Molecular Genetics
	Pathology & Lab Medicine
	Physiology & Biophysics
Biological Sciences	Developmental & Cell Biology
	Molecular Biology & Biochemistry

New

*** MBGB Faculty Advisors ***

Advisors for the first year only

Four from each of the seven Departments - 2 students/advisor

1. Meet advisors at the beginning of each quarter for academic advising.
2. Advice will emphasize the importance of the rotation experience:
 - Identifying faculty sponsors
 - Making intentions clear after a potential thesis sponsor has been identified,
 - The need to demonstrate a commitment to research.
3. Participate each quarter in a 2-h rotation assessment and critique.

Departmental Graduate Advisors

Seven Departments in MBGB

School	Department	Graduate Advisor	<u>e:mail</u>
College of Medicine	Anatomy & Neurobiology	Dr. Martin Smith	<u>msmith@uci.edu</u>
	Biological Chemistry	Dr. Kyoko Yokomori	<u>kyokomor@uci.edu</u>
	Microbiology & Molecular Genetics	Dr. Marian Waterman	<u>mlwaterm@uci.edu</u>
	Physiology & Biophysics	Dr. James Hall	<u>jhall@uci.edu</u>
	Pathology	Dr. Edward Robinson	<u>Ewrobins@uci.edu</u>
Biological Sciences	Developmental & Cell Biology	Dr. Tom Schilling	<u>tschilli@uci.edu</u>
	Molecular Biology & Biochemistry	Dr. Dr. Christopher Hughes	<u>Cchughes@uci.edu</u>

Basic Curriculum for 2006-2007

1. Fall Quarter -

MBB204, Structure and Function of Proteins
Rotation/Minisymposia

2. Winter Quarter -

MBB203, Structure and Function of Nucleic Acids AND
DB231B, Cell Biology OR DB231D, Molecular, Cellular and Developmental
Neurobiology AND
MMG250, Responsible Conduct of Research (Wed 11:00 AM to 12:30 PM)
T.A. Training Workshop (DB203B) -Thu, 9:00-11:00 AM Weeks 6-10.
Rotation/Minisymposia

3. Spring Quarter -

MBB206, Regulation of Gene Expression OR
BC207, Advanced Molecular Genetics OR
DEV BIO 231C, Developmental Genetics
Teaching Assistantship - May not begin until F07.
Scientific Communication
Rotation/Minisymposia

Some satellite courses may be required in first and second years by individual tracks

Laboratory Rotations

- Of paramount importance
- One-quarter (10 weeks) research experiences
- **Two Rotations are Required**; Three recommended
 - First 2 weeks: Student writes proposal
 - Last 2 weeks: Student writes a report
- Faculty mentor writes an evaluation
- **Minisymposia w/ Faculty Advisors at End of Quarter**
- Track Presentations during Orientation will identify help you select your rotation labs.

MBGB Rotation Minisymposia

Format:

Four MBGB Faculty Advisors from a given Department meet together with their eight advisees at the end of quarter.

Each student gives a 10 min rotation presentation with 5 min for discussion/critique

In addition to oral critiques, written comments noted by all advisors present will be forwarded to students

Detailed comments on strengths and weaknesses of provided one-on-one by advisors at beginning of following term.

Teaching Requirement

- Three teaching assignments
- Usually one lecture section and two lab sections
- TA Training during weeks 6-10 of Winter quarter
- May begin **SPRING** quarter of 1st year or **FALL** of 2nd
- Requirement for the Ph.D., not tied to support

- GPA of 3.1 or higher is required.

- Students for whom English is not the first language must have passed the Test of Spoken English (TSE) exam
 - Take the test AS SOON AS POSSIBLE!

Preliminary Qualifying Exam

When: Weeks 1 & 2 after end of Spring quarter

Student presentations to a committee of three faculty members:

- First rotation
- Second rotation
- Review of a published abstract and proposed new research based on the abstract (48 hour time limit for preparation)

Advancement to Candidacy Exam (third year)

Students present thesis proposals to a committee of five faculty

Purpose:

to determine whether the student is prepared to perform Ph.D. quality research by

- 1) defining a tractable research problem and by
- 2) demonstrating the knowledge, skills and experimental sophistication

Committee guides and advises the student and monitors research progress throughout remainder of graduate training

Ph.D. Thesis - An Attainable Goal

- Includes a rationale, hypothesis, research results, discussion, and conclusion.
- Demonstrates an ability to address an intellectual problem and arrive at a successful conclusion independently and at a high level of professional competence
- Constitutes an original and meaningful contribution to scientific knowledge
- Is reviewed by a committee of three faculty
- Is defended publically
- The last exam...

What you need for the Ph.D.

Actually, Depends on Departmental Requirements

- One first author or joint first author paper published or "in press" in a peer-reviewed journal
- A significant body of work in which the student has been primarily responsible for
 - hypothesis development
 - formulation of experimental plan
 - acquisition and interpretation of the data
 - writing of manuscripts and thesis