

Molecules, Cells and Organisms Ph.D. Program

Department of Molecular and Cellular Biology
Academic Obligations and Advisor Expectations

Coursework

Required coursework in the Molecules, Cells and Organisms (MCO) Ph.D. Program is expected to be completed by the end of the first year. Students are permitted to take additional elective courses in later years with permission of their advisor. The minimum standard for satisfactory work in the Harvard Griffin Graduate School of Arts and Sciences is a 3.0 average in each academic year. Students who have not maintained satisfactory grades will be placed on “grace” status and will need to take additional courses to raise their GPA to the minimum.

Responsible Conduct of Research

All students in the MCO Ph.D. Program are required to take a course on the responsible conduct of research in science. This course is ordinarily completed during the first year of study. The program offers an RCR course taught by training program faculty, supplemented by university administrators. There are additional RCR courses offered at the University, including at Harvard Medical School. Some students may also be required to take additional refresher courses in RCR. Students are required to complete an RCR Refresher Course every 4 years or at every career level (post-doc; faculty). Therefore, students in the 5th year are expected to complete an RCR Refresher Course.

Fellowship Applications

All eligible graduate students are strongly encouraged to prepare and submit a fellowship application (such as the NSF) in the G1 or G2 year unless they have already received outside funding upon entry. More advanced students (G3+) are highly encouraged to explore additional funding opportunities for which they may be uniquely qualified. The MCB Department is available to assist students in finding fellowship opportunities and there are resources available within the Harvard Griffin Graduate School of Arts and Sciences to assist students with Fellowship proposals, including the [Fellowships and Writing Center](#).

Teaching Requirement

Students must complete their teaching requirement (one course) in the G2 year. The intent is to make sure students receive exposure to teaching either an introductory undergraduate course with a good amount of independent section teaching or a course that is more discussion-based, containing more advanced material. Typically, students will teach either in the fall or spring of their G2 year. Students retain 50% of their teaching salary (in addition to their monthly stipend) when undertaking required teaching. As an added incentive for Fellowship recipients, students who have procured a substantial outside fellowship may retain all of their teaching compensation. Any additional teaching beyond the requirement must receive approval from the dissertation advisor, thesis committee chair and the MCO program. Students on “grace status”, or who have not passed the GSAS English Language Requirement may not be eligible to teach and should speak with the Director of Graduate Studies to make arrangements on how to fulfill the teaching requirement.

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Graduate Program Retreat

Each year the MCO Graduate Program holds a student-organized, one-day Retreat that is specifically focused on graduate students and their training. At the Retreat, students make presentations on their current research projects and present posters. In addition, faculty members from outside institutions are invited to give lectures. The invited speakers also act as outside reviewers of the program and meet with the students and report back to the training program faculty of the current pulse of the student body and satisfaction with their training program. **Advisors of MCO students who are themselves members of the MCO Training Program/Grant are expected to participate in this annual retreat.**

G2 Preliminary Qualifying Examination (PQE)

The purpose of the PQE is to assess a student's qualification for independent research leading to the Ph.D. degree and typically occurs during the fall semester of the second year, 6-8 months after joining a lab. The PQE is an opportunity for both the candidate and faculty to identify a serious mismatch between the student's qualifications or commitment to research and Ph.D. training. The assessment of the student's qualification encompasses various scholarly abilities:

- (1) *A solid background knowledge;*
- (2) *Familiarity with established ideas and open challenges in the chosen discipline; and*
- (3) *The ability to design experiments and to critically interpret their outcomes.*

In the MCO Ph.D. program, **assistance and input from the advisor is expected.** With advice and assistance from the advisor, the student prepares a Dissertation Research Proposal that outlines the plan for Ph.D. research. The advisor is not a member of the PQE Committee and does not attend the exam itself but should be present before the exam begins in a pre-exam session without the student. At this time, the advisor informs the committee about the student's proposal and work.

Students will work with their advisor to determine who will serve on their PQE committee. Composition of the committee must consist of 3 Harvard faculty members who are members of a HILS PhD program. At minimum, 2 members must be MCO faculty, and any non-MCO faculty must receive approval from MCO program leadership in advance. The chair of the committee must be a tenured MCO faculty member.

Following the PQE, the committee chair is responsible for providing a written report through my.harvard on behalf of the committee, along with the outcome. The 3 possible outcomes include: Pass; Pass with Conditions; and Fail. A conditional pass may be met in a variety of ways, and a timeline for completion of conditions should be outlined on the PQE report. A student who fails the PQE may repeat the exam only once, and a timeline for this should also be provided by the committee on the PQE report.

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After successful completion of the PQE, students must then complete their first DAC meeting by June 30 of their G2 year (~ 6 months post PQE). Because the qualifying exam does not require supporting experimental results, this first DAC is critical for students to get off on the right foot as they formulate their thesis projects. Students can advance to PhD candidacy after successful completion of the G2 DAC, required coursework, and teaching. Students that have not advanced to candidacy are not eligible to teach additional courses or to receive travel awards without approval from the program.

Dissertation Advisory Committee

Graduate students report their progress to a Dissertation Advisory Committee (DAC) at least **once annually**, following successful completion of the PQE. The DAC may require more frequent meetings depending on the student's progress, especially in the final completion phase. The DAC has at minimum 3 faculty members who are invited by the student, but the composition must consist of at least 2 MCO faculty members, and the chair must also be a member of the MCO program. Students may retain the same committee members as their PQE.

The advisor is not a member of the DAC. However, it is critical prior to each progress meeting and at any point in between, that the advisor briefs the DAC on the student's activities. The DAC has four main missions:

- (1) *To serve as an **advisory committee** that will provide professional advice on all aspects of the thesis project, from experimental paradigms to project feasibility and timing, to the scientific impact of the work.*
- (2) *To help **monitor** the student's progress and ensure that major objectives and standards for completion of the thesis are being met. In this capacity, the DAC determines whether the student's research meets the requirements of the program and when the student may begin writing the thesis.*
- (3) *To help **resolve** any conflict between student and advisor or other lab members.*
- (4) *To serve as **liaison** to the department and training program leaders as well as graduate administration.*

Dissertation Defense

The average time to completion for students in the MCO Ph.D. program is 6 years. A student may proceed with a dissertation defense with permission from the Dissertation Advisory Committee at the final DAC meeting. This is indicated by the committee "checking the box" on the final DAC report. To schedule a defense, students are **required** to have submitted or published at a minimum, one first author manuscript. All students in the Molecules, Cells and Organisms Ph.D. program receive their degree from the Department of Molecular and Cellular Biology, regardless of home lab affiliation. Students by default receive their degree in either Biology, but students may receive a degree in Biochemistry, if determined appropriate by their advisor and DAC committee.

Graduate Student Costs FY25

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FY25 Stipend / Salary Rate

Annual stipend / student salary: \$48,996

(Monthly stipend / student salary: \$4,083)

FY25 GSAS Tuition & Health Insurance Fees

G1-G2 Years (Full Tuition Rate): \$55,656 + SHIP (\$4,202) + SHF (\$1,592) = \$61,450

G3-G4 Years (Reduced Tuition Rate): \$14,470 + SHIP (\$4,202) + SHF (\$1,592) = \$20,264

G5 Year and above (Facilities Fee Rate): \$3,682 + SHIP (\$4,202) + SHF (\$1,592) = \$9,476

MCB/MCO Graduate Student Support Structure

- **G1 – G2 Years** Stipend, tuition, and insurance fees paid by MCO Program/MCB Department. Student may apply to Graduate Program Office for conference travel funding
- **G3 Year and Above** Stipend/Salary, Tuition and Insurance Fees paid by Faculty Advisor. Conference travel is ordinarily provided by faculty advisor

Summary of FY25 Standard Graduate Student Support Costs and MCB Structure

Year	Tuition Description	Amount	SHIP (Student Health Insurance Plan)	SHF (Student Health Fee)	Stipend/Salary Rate	Total	
G1	Full Tuition	\$55,656	\$4,202	\$1,592	\$48,996	\$111,450	Program Pays
G2	Full Tuition	\$55,656	\$4,202	\$1,592	\$48,996	\$111,450	
G3	Reduced Tuition	\$14,470	\$4,202	\$1,592	\$48,996	\$70,264	Advisor Pays
G4	Reduced Tuition	\$14,470	\$4,202	\$1,592	\$48,996	\$70,264	
G5	Facilities Fee	\$3,682	\$4,202	\$1,592	\$48,996	\$59,476	

To estimate costs for future years you should anticipate a 3-4% increase in stipend/salary, tuition, and fees.

The MCB Department and the MCO Graduate Program are committed to the timely graduation of all Ph.D. candidates, which typically averages 5 ½-6 years.