

Molecular & Medical Genetics Program Guidelines

2020-2021 Academic Year

Overview

These guidelines pertain to all students in the Molecular and Medical Genetics (MMG) Graduate Program and are in partnership with the guidelines and requirements set forth by the Program in Molecular and Cellular Biosciences (PMCB) and the Graduate Council of the Oregon Health & Science University (OHSU) School of Medicine, particularly the "Academic Guidelines for PMCB," the "By-Laws of the Graduate Council," and the "Guidelines and Regulations for Completion of Master's and Ph.D. Degrees." Additional important information is contained in the OHSU "Graduate Studies Handbook."

Program Directors: Amanda McCullough, PhD., and Mushui Dai, PhD.

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Checklist

- Successfully complete PMCB Year 1 Coursework and three Lab Rotations
- Pass Comprehensive Exam
- Select a lab, mentor, and academic degree program to complete PhD requirements
- Register and attend MMG elective course requirements
- Register and attend relevant Journal Club and Seminar each term
- Register for research credits each term (pre-qualifying students)
- Request Appointment for a Dissertation Advisory Committee
- Formally meet with Dissertation Advisory Committee at least once every 6 months
- Pass Qualifying Exam and request Advancement to PhD Candidacy
- Register for dissertation credits each term (post-qualifying students)
- Successfully complete 135 hours of approved graduate credits
- Request Oral Examination
- Defend dissertation and pass Oral Examination
- Submit final paperwork and bound dissertation
- Graduate!

General Timeline

General Timetable for most graduate students (12-16 credit hours should be taken each term including summer terms):

Year 1: PMCB Courses

The main goal for the first year is to pass coursework with a "B-" or better grade and to identify a mentor with whom to train. In addition to the required coursework, it may be desirable to take one or more elective courses. Some electives are offered once every two years and it may be desirable to take some electives during the first year to prepare for the qualifying exam at the end of the second year. Refer to the Graduate Program in Molecular & Cellular Biosciences By-Laws, policies & guidelines.

Year 2:

Complete required PMCB courses and begin fulfilling MMG programmatic course requirements. A grade of B- or better is required in all courses.

A Dissertation Advisory Committee (DAC) should be assembled and begin meeting, starting at the beginning of a student's second year in graduate school.

Prepare for and complete the 2nd-year candidacy exam, which is required of PMCB students during the summer of their second year. The majority of the student's time and effort should be in research and in acquiring the laboratory skills and conceptual framework necessary for their dissertation.

Year 3 and up:

Continue educational training and research leading to the Ph.D. dissertation and complete all program elective course requirements. Register for and attend relevant Seminar Series and Journal Clubs.

Definitions

Sakai is OHSU's online course management system.

Graduate Program. Any educational program leading to the Doctor of Philosophy, Master's degree, Graduate Certificate or equivalent graduate degree at OHSU.

Nano Course. A nano course refers to a short course, offered for 0.5 credits. They are intended to be special topics courses that capitalize on timely subject matter, visiting expertise, and/or highlight new developments in a field. Flexibility in scheduling and course leadership (i.e. not part of the permanent curriculum) will insure these courses are nimble. Nano courses are only offered once. If a course is deemed to be worth offering regularly, it will go through the regular course review and approval process.

Program. The word "Program" shall refer to a department, interdepartmental committee or other School of Medicine administrative unit that has received approval from the Faculty Council and has been accredited to offer an educational program leading to the Master's or Ph.D. degree. A Program with a single administrative structure that oversees training for more than one degree (e.g., Master's and Ph.D.) shall be considered to be one program.

Program Director. "Program Director" shall refer to the department chair, chair of the interdepartmental committee, or director of the administrative unit responsible for overseeing the Program. Responsibility for representing the program may be delegated to a member of the program faculty when deemed appropriate by the Program Director.

Academic Progress. The term academic progress refers to the progress made toward the research objectives and completion of required coursework. Failure to make satisfactory academic progress can and will result in academic probation and possible dismissal from the graduate program.

Links

OHSU Registrar

- Registration Information
- Academic Calendar
- General Registrar Forms

School of Medicine Graduate Studies

- Graduate Council Bylaws
- Academic Bylaws
- Student Forms
- Faculty Forms
- Student Handbook
- Faculty Handbook

MMG Graduate Program

Other Helpful Links

[Student Central](#) (requires login)

[Student Health & Wellness Center](#)

[OHSU Graduate Student Organization](#)

[Sakai](#)

Program Contacts

[Lola Bichler](#)

Graduate Coordinator
503 494-5824

[Melissa Brewer](#)

Grants & Contracts
Coordinator
503 494-9794

Tim McCormick
Computer User Support
503 765-5821

Amanda Asbrock
Administrative Assistant
503 418-2309

Shawna Rinne
Department Administrator
503 494-4400

Rose Masin Brown
Financial Analyst
503 494-9966

Abby Overman
Human Resources
Coordinator
503 418-9304

First Year Advisor

Initial advising will be provided by members of the PMCB Advisory Committee (PAC) made up of PMCB faculty knowledgeable in all aspect of graduate training in the School of Medicine at OHSU. PAC advising and mentoring provides consultation for PMCB students for academic and non-academic concerns. At the time of matriculation, each student is assigned a PAC advisor. PAC advisors are familiar with academic requirements of all five participating graduate programs, as well as the Graduate Council By-Laws, Student Handbook and general School of Medicine regulations.

PAC (1st year) Advisors:

1. Meet with the student during Orientation.
2. Meet with the student at least once each term.
3. Review and provide advice regarding rotation decisions, course choice, and registration.
4. Review the student's academic record and written rotation performance summary at the end of each term.
5. Promptly meet with student placed on academic probation to formulate a plan for amelioration.
6. Report any concerns to the PMCB Steering Committee and/or the PMCB Director.

Research Rotations

Students rotate in three research labs in the winter term. This experience allows the students to experience a variety of research opportunities and to help them choose a mentor for their PhD dissertation.

Refer to PMCB Academic Guidelines for detail on research rotations, including requirements for requesting a research rotation.

Selection of a Faculty Mentor

After successful completion of three research rotations, students select a faculty member to serve as their mentor. The decision of a student to enter into a laboratory to pursue research is dependent upon a joint agreement between the faculty member and the graduate student, and is subject to approval by the PMCB Director. Conditional approval based on an agreement that there will be a co-mentor will be at the discretion of the Program Chair and the PMCB Director. The mentors must be members of both School of Medicine Graduate Faculty and PMCB faculty.

Refer to PMCB Academic Guidelines for detail on selection of a faculty mentor.

Required Courses

Graduate students in the department of Molecular and Medical Genetics must fulfill both MMG and PMCB requirements with a grade of B- or better. If you have questions regarding the program requirements, contact the MMG Graduate Coordinator.

Students are required to:

1. Attend monthly PMCB Seminar Series
2. Register for and attend MGEN 605 or MGEN/CANB 606 Journal Club every term

3. Register for and attend the Departmental Seminar, MGEN 607a, through end of program (optional registration for seminar during the term that the student is writing their dissertation and defending)

Refer to PMCB and Graduate Studies Guidelines, By-Laws, and policies for detail.

1st Year PMCB Courses (Partial Listing)

- CONJ 650 Practice and Ethics of Science
- CONJ 661 Structure and Function of Biological Molecules
- CONJ 662 Genetic Mechanisms
- CONJ 663 Bioregulation
- CONJ 664 Cell Structure and Function
- Two of the CONJ series electives (CONJ 665, 667, 668, 669) offered in the spring term. Students may request permission from the PMCB to substitute an advanced graduate course of equal or greater credit for one of the required CONJ spring courses. For example, students planning to join MMG frequently substitute advanced courses for a spring CONJ elective because some of these courses are offered only every other year. Note that an advanced course taken in place of a CONJ elective does not fulfill the MMG requirement for graduate courses beyond the PMCB requirements.
- Three laboratory rotations
- Refer to Graduate Program in Molecular & Cellular Biosciences By-Laws, policies & guidelines for further detail.

All PMCB requirements and MMG elective requirements must be satisfied before advancement to candidacy. It is expected that MMG electives will be completed by the end of year three at the latest.

MMG Specific Requirements

- MGEN 622 and MGEN 623 are required advanced courses for MMG graduate students. In addition, a minimum of four elective credits in graduate courses are required. These elective credits should be chosen in consultation with the student's mentor, DAC, and Program Director.
- MGEN 605 and MGEN/CANB 606 are two of the MMG journal clubs. The students are required to take one of the journal clubs every term (except summer). The student may petition the MMG Graduate Program Director to substitute another journal club.
- MGEN 607a: MMG Department Seminar Series. Required every fall, winter, and spring term.

Fall Term 2nd Year:

MGEN 623 Genetic Basis of Human Disease	3 credits
MGEN 607 Departmental Seminar	1 credit
MGEN 611 Departmental Grand Rounds	1 credit
MGEN 601 Research	6-10 credits
MGEN 605 Journal Club or MGEN/CANB 606	1 credit
Elective Courses	<u>0-4 credits</u>
Second Year Fall Term Course Total:	16 credits

Winter Term 2nd Year:

MGEN 611 Departmental Grand Rounds	1 credit
MGEN 607 Departmental Seminar	1 credit
MGEN 601 Research	9-13 credits
MGEN 605 Journal Club	1 credit
Elective Courses	<u>0-4 credits</u>
Second Year Winter Term Course Total:	16 credits

Spring Term 2nd Year:

MGEN 622 Advanced Topics in Genome Sciences	3 credits
MGEN 611 Departmental Grand Rounds	1 credit
MGEN 607 Departmental Seminar	1 credit
MGEN 601 Research	5-9 credits
MGEN 605 Journal Club	1 credit
Elective Courses	<u>0-4 credits</u>
Second Year Spring Term Course Total:	16 credits

Summer Term 2nd Year:

MGEN 601 Research	<u>16 credits</u>
Second Year Summer Term Course Total:	16 credits

Fall/Winter /Spring Terms 3rd Year through Completion:

MGEN 605 Journal Club	1 credit
MGEN 607a Departmental Seminar	1 credit
MGEN 601 Research	<u>14 credits</u>
Course Total:	16 credits

Summer Terms Through Completion:

MGEN 601 Research	16 credits
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Electives

A total of 4 credit hours of Elective Courses are required to be eligible for the degree. An elective can be any basic science course at the 600 level. Students are strongly encouraged to take at least one elective course during Fall term of their second year. Students are encouraged to discuss elective options with their mentor and Program Director.

Please Note: Journal Club, Seminar courses and Grand Rounds cannot be used to fulfill the Elective Course requirement.

Research Credits

Students who have not advanced to Ph.D. candidacy are required to register for at least 1 research credit.

Dissertation Credits

Ph.D. candidates are required to register for at least 1 dissertation credit.

In addition to didactic coursework, which take approximately 1.5 years to complete, students participate in journal clubs, clinical grand rounds, and present their research results in a formal seminar setting every year.

Seminar

Several seminar series on campus expose students to additional research approaches and philosophies and provide opportunities for students to meet researchers at the forefront of their fields. Students are required to register for and attend the Departmental Seminar, MGEN 607, Year two through end of program (optional registration during the term the student will defend). Third year and beyond students are required to give a presentation of their dissertation research once per year. Third year students are expected to give a 30-minute presentation; Fourth year and beyond students are expected to give a 60 minute presentation. No presentation is required during the academic year in which a student expects to defend and graduate.

Journal Clubs

Students are required to register for and attend an approved journal club year two through the end of program. Registration for journal club is optional during the term the student is scheduled to defend, although attendance is still encouraged.

Grand Rounds

Students are required to register for and attend Departmental Grand Rounds, MGEN 611, held at 9 a.m. on Thursdays during the second academic calendar year (Fall, Winter and Spring terms). Three terms of Grand Rounds are required for completion of the Ph.D. Most students take the three terms in their 2nd year in the Program. Attendance for more than three terms is highly encouraged but optional.

Course Load

A normal course load is 9-16 credit hours per term.

Course Waivers

Students who have completed one or more years of full-time graduate training at another institution may be considered for direct admission to one of the Member Departments. Recommendations for admission of such students will be initiated by the appropriate Member Department and must be approved by a majority vote of the Steering Committee, which will also determine which (if any) PMCB requirements will be waived.

If a student wishes to be excused from taking a required course, the student and advisor should jointly petition the MMG Graduate Program Directors stating their reasons for wishing to be excused from the requirement.

Grading

The grade of Incomplete is reserved for circumstances beyond the control of the student, (e.g. illness) preventing completion of the course requirements by the end of the term AND it is possible to complete the requirements within the subsequent term.

Students failing a term of research credits (i.e. receives an "NP-No Pass" on research) are immediately placed on academic probation. To return to good standing, the student must obtain a passing grade on the next term of Research (and all subsequent terms). Failure to do so constitutes grounds for termination from the Program.

Pre-qualifier Students: Students are required to notify and meet with their advisor immediately upon receiving a NP grade on Research. The advisor will suggest a course of action for correcting research performance.

Candidate Students: After advancing to candidacy, students receiving an NP grade in Research will schedule a Dissertation Advisory Committee meeting to take place within two weeks of receipt of the NP grade in Research. The mentor and Dissertation Advisory Committee will suggest a course of action that the student must follow in correcting research performance.

The courses Journal Club and Seminar require documentation of attendance in order to be considered for the grade of "Pass". Post-qualifying, a student and advisor may petition the MMG Graduate Program Directors to substitute another formal journal club.

Seminar attendance: A student is allowed 2 unexcused absences per term. 3 or more unexcused absences during the term will result in a grade of "No Pass". Attendance may be excused for illness, major family emergency or attending a regional, national or international scientific meeting. When a seminar is missed for one of these reasons, the student must email the Graduate Program Coordinator, indicating the reason for not attending the specific seminar session. Performing laboratory studies is not an excuse for not attending the seminar.

Following receipt of the first "No Pass", a pre-qualifying exam student must immediately meet with their mentor; a post-qualifying exam student must immediately meet with their Dissertation Advisory Committee. A plan for insuring the attendance goal for the next term should be designed.

Pre-qualifier Students: Two grades of "No Pass" in any one of the three activities disqualifies a student from taking their qualifying exams, resulting in dismissal from the MMG Graduate Program.

Candidate Students: Two grades of "No Pass" in any one of three activities for a candidate student may result in dismissal from the MMG Graduate Program.

Course Descriptions

MGEN 601
Research | 1-16 credits
Schedule: All Terms

MGEN 603
Dissertation (credits TBA)
Schedule: Any Term

MGEN 605

Molecular & Medical Genetics Journal Club | 1 credit

Course Director: Moore

Schedule: Fall, Winter, Spring | Thursday | 10:30-11:30am | RJH 4504

MGEN 606/CANB606

Mechanisms of Cancer Journal Club | 1 credit

Course Director: Qian, Agarwal

Schedule: Fall, Winter, Spring | Tuesday | 12:00pm-1:00pm | MAC 2136

MGEN 607

Departmental Seminar Series | 1 credit

Course Director: Gillingham

Schedule: Fall, Winter, Spring

Seminars presented by students, faculty and visiting speakers on contemporary topics

MGEN 611

Departmental Grand Rounds | 1 credit

Course Director: Zonana and Moore

Schedule: Fall, Winter, Spring | Thursday | 9:00am-10:00am | MAC 3198

MGEN 620

Interviewing and Counseling Techniques for Genetic Counseling | 1 credit

Course Director: Kovak

Schedule: TBD

Covers theoretical and practical aspects of the genetic counseling process. Topics highlighted are ethical considerations in genetic counseling, psychological aspects of genetic disorders in individuals and families and the responsibilities and limitations of genetic counselors.

MGEN 622

Advanced Topics in Genome Sciences | 3 credits

Course Directors: Agarwal & Chavez

Schedule: Spring | TBD

A team of faculty experts discusses topics including chromosomal basis of inheritance, mechanisms of mutation, epigenetics, DNA repair, oncogenes and tumor repressors, cell cycle, yeast genetics, somatic cell genetics, population genetics, mouse model systems, immunogenetics, biomedical informatics and human genome variation. Format is reading and conference style.

MGEN 623

Genetic Basis of Human Disease | 3 credits

Course Director: Richards

Schedule: Fall | TBD

A team of faculty experts discusses topics including chromosomal basis of disease, cancer genetics, disorders of energy metabolism, amino acid disorders, blood coagulation disorders, congenital heart defects, disorders of extracellular matrix, platelet disorders, endocrine disorders and stem cell/gene therapy. Format is reading, journal club and conference style.

MGEN 624

Gene and Cell Therapy | 2 credits

Course Directors: Nakai and Harding

Schedule: Winter | Monday/Friday | 3:00pm-4:00pm | MAC 2136

The course presents an introductory overview of various gene delivery systems and cell-based approaches; advances in DNA/RNA/peptide delivery, cellular genome engineering and understanding the biology of cells as therapeutics; applications of gene delivery technologies and cell transplantation with a focus on translational research and current issues in gene and cell therapy and regenerative medicine. The course consists of lectures by experts in the relevant fields in a lecture/paper discussion format. Students will be required to write an NIH style research proposal on a relevant topic of their choice and expected to have an oral presentation during the course.

MGEN 625

Epigenetics & Reprogramming | 3 credits

Course Directors: Carbone and Adey

Schedule: Spring | Tuesday/Friday | 12:00pm-1:30pm | RJH 5524

This course is focused on discussions involving both students and lecturers and covers topics such as: Waddington epigenetic landscape and cell fate, Epigenetics mechanisms: DNA methylation & histone modifications, Non-coding RNAs and epigenetics, X-inactivation and monoallelic expression, Chromatin structure and organization, Epigenetic inheritance: somatic, meiotic and trans-generational, Genomic imprinting, Epigenetic Reprogramming and Environmental epigenetics.

Academic Progress

Students training for a Ph.D. degree are expected to make progress toward the research objectives and completion of required coursework. Students are expected to take the Qualifying Examination for advancement to candidacy by the end of their 12th term of graduate study; or they will be recommended for dismissal for failure to progress academically. Academic progress will be considered by the student's research advisor and DAC when they meet every six months. Failure to make satisfactory academic progress can and will result in academic probation and possible dismissal from the graduate program.

Training in the Responsible Conduct of Research

The National Institutes of Health requires continued ethics training for all trainees, fellows, participants, and scholars receiving support through any NIH training, career development, research education, and dissertation research grant ([NOT-OD-10-019](#)). To meet this requirement, all graduate students are required to complete CONJ 650 The Practice and Ethics in Science during the first year.

Comprehensive Exam

All first year PMCB students are required to take the comprehensive examination at the scheduled time following completion of their first year of graduate studies. This examination tests the student's ability to think scientifically using concepts covered during the first year of coursework. The comprehensive exam is prepared by the PMCB Comprehensive Exam Directors.

Dissertation Advisory Committee

DAC Formation

A DAC should be assembled and begin meeting, starting at the beginning of a student's second year (preferably in September or October, following completion of the first year comprehensive exam). The rationale for this is to give the student advice earlier in their graduate careers concerning research, coursework, and preparing for the Ph.D. Candidacy Exams. Students should assemble their DACs, keeping in mind that the committee should be composed of four faculty members (including their mentor), and should include as diverse a faculty membership as possible, so as to get advice from a multidisciplinary committee. Specific OHSU rules for the composition of DACs are listed below.

DAC membership requires approval from the Graduate Program Director and Associate Dean of Graduate Studies, and will include:

- At least four faculty members (including the student's advisor) with expertise in one or more aspects of the student's project and who are familiar with the requirements of the graduate program for completion of a PhD. Students (in consultation with their faculty advisor and program director) may request specific faculty to serve on their DAC.
- A majority of DAC members must be members of the Graduate Faculty. OHSU faculty from outside the Graduate Faculty may be included.
- One member may be from outside the university, but these require approval by the Associate Dean for Graduate Studies (the Program Director should include a brief CV and short explanation of non OHSU-faculty expertise on the committee to the Associate Dean)
- No more than two DAC members may lack any DAC experience and at least one member must have been on a DAC for a graduated student.
- DAC Chair: One DAC member, not the mentor, with significant experience in mentoring graduate students, and having served on a DAC before.
- DAC members may be added or removed with the approval of the Program Director and Associate Dean of Graduate Studies. Following the change, the DAC composition will still adhere to the above requirements.

Typically, DAC members will be invited to serve as part of the student's Oral Exam Committee.

Student Responsibilities

The student must meet every six months with their Dissertation Advisory Committee. Following completion of the third year, the student may meet more frequently on the recommendation of his/her committee.

- It is the responsibility of the student to schedule and coordinate the meetings.
- Complete DAC Guidelines can be found <https://www.ohsu.edu/school-of-medicine/graduate-studies/forms-and-policies>

Committee Responsibilities

Typically, the Chair of the Committee is not the advisor. The responsibilities of the chair are:

- To submit a completed Dissertation Advisory Committee meeting summary to the Graduate Student Coordinator. Copies of the summary will be distributed to the student, the Advisory

Committee members and the MMG Graduate Program Directors. A copy will be deposited in the student's file in the MMG Department Office.

Qualifying Exam

Overview

Training within the PMCB culminates with successful completion of the Qualifying Examination (QE), which shall be given at the end of the second year.

MMG Qualifying Exam is consistent with the PMCB written guidelines listed on the OHSU PMCB website.

Eligibility

Before taking the QE, the student must have completed the PMCB course requirements and the MMG course requirements. If a course is not offered before the end of the student's second year, but the student is otherwise prepared to take the QE, the examination may proceed with approval from the Graduate Program Director.

Timeline and Description

The QE will be completed during Summer term. Extension of deadlines for any reason will only be considered by written request to the student's DAC and PMCB Program Director. Students may request permission to take the QE earlier than Summer Term. The request must be made in writing to the PMCB Director at least two months prior to the proposed exam date. The request must be pre-approved by the student's thesis advisor and department program director before submission to the PMCB Director.

1. Students submit a two-page, single-spaced prospectus to the MMG Program Directors and the PMCB office (pmcb@ohsu.edu). The Program Director will forward to all members of their QEC that defines the topic for their QE proposal that describes the proposed topic and outlines an experimental plan on their topic. Students should also note whether or not the QE subject material is part of their current research. The MMG Program Directors will oversee selection of the student's QEC.
2. The QEC, responsible for conducting the student's qualifying examination, is appointed by the department and the student is notified of the names of the panel members.
3. The QEC notifies the student in writing of acceptance or of any weaknesses or specific suggestions for improvement to their proposal.
4. The Program Director schedules a date for the oral examination in consultation with the QEC and reserves a room.
5. At least one week prior to Oral Exam – Student submits final written proposal to the QEC and their thesis advisor.
6. Prior to the Oral Exam – Student submits a letter to the Program Director and QEC from their thesis advisor, describing their role during preparation of the proposal.
7. At least ten days before the beginning of Fall term – Oral examinations completed.

Qualifying Exam Committee

The Qualifying Examination Committee will consist of five faculty members who shall be appointed by the Graduate Program Director (with approval of the Associate Dean for Graduate Education). Students may suggest names of three faculty members to be part of their Examination Committee for consideration by the Graduate Program Director. Qualifying Examination Committee members must be members of the SOM Graduate Faculty but do not need to be affiliated with the Molecular & Medical Genetics Graduate Program.

Role of Advisor/Mentor

To facilitate an objective examination, the student's dissertation advisor is not permitted to edit or comment on the written proposal. Neither is the dissertation advisor, nor any other faculty member, permitted to coach the student in a rehearsal of their oral presentation. The student must submit a signed letter from their thesis advisor describing in specific detail the role of the advisor and of the student in the development of the hypothesis and research plan in this proposal. The thesis advisor must confirm that they have NOT contributed to the written portion of the exam, and that the student has NOT used any of the advisor's prose within the proposal. The QEC has two weeks from receipt of the written proposal and thesis advisor letter to request more information from the thesis advisor if deemed necessary.

Format of Written Proposal

The proposal shall be written following current general guidelines of a NRSA application. It is the student's responsibility to check on the guidelines, which are available on the NIH website. It shall consist of a hypothesis-driven series of experiments bearing directly on the question or hypothesis of the proposal, with a discussion of probable outcomes, interpretations and alternative approaches. The proposal shall be no longer than 7 pages, including figures and references (single-spaced; 1 page for the specific aims section and 6 additional pages for the rest of the grant). Students may discuss topics and proposed experiments with all sources (fellow students, post-doctoral fellows, faculty, and visiting scientists), but none of them may be involved in any aspect of the student's written proposal. Students may also seek general assistance in scientific writing and proofreading. However, it must be remembered that the written proposal is an examination, and must represent the student's ideas and development of the research topic. Students are expected to adhere to established guidelines for professional ethical conduct in the preparation of their QE proposal topics.

Format of Oral Exam

The oral examination will probe the breadth of the student's knowledge and also the depth of the student's understanding of his/her research proposal. Students are expected to begin the oral examination by giving a short (20-30 minute), formal presentation summarizing the written proposal. Audio-visual aids may be used during the summary of the proposal. During the oral examination by the panel, the use of prepared visual aids, textbooks, or other reference material is not permitted. Slides and figures from the oral summary may be referred to if they are the subject of a question from the exam panel. Questions from the Examination Panel should focus primarily on issues pertaining to the proposal; however, the student is responsible for all areas of cellular and molecular biology that have been covered during the first two years of graduate study. Therefore, students also should expect questions on general knowledge in addition to questions relating to the scientific background pertinent

to their areas of specialization, as well as more general issues related to the proposed experiments. Students may be asked about the choice of methodologies, their relative advantages and disadvantages, and potential alternative strategies (when appropriate). Students will be expected to understand and be ready to explain the scientific basis of technical methods they intend to employ. The student should be prepared to discuss the rationale for the proposed study, the strengths and limitations of the proposed experimental strategies, and potential pitfalls and alternatives.

Preparation for Oral Exam

Students should be thoroughly familiar with key historical and background publications that provide the foundation for their proposal, as well as any current literature that directly pertains to their specific aims. In addition, students are encouraged to review the more general areas of cellular and molecular biology that provide the conceptual framework for their proposal. Once a student has submitted their final written proposal to their QEC, they may contact panel members for guidance in preparing their oral exam presentation.

Preparatory course Enrollment in PPH 607 Grant Writing & Qualifying Exam Preparation is strongly recommended. This 1- credit course is offered in the spring. As a 1-credit course, it does not count towards the MMG graduate course requirement.

Outcomes

The outcome of the Qualifying Examination must be certified in writing both by the Member Departmental Graduate Director and by the PMCB Director, who will also confirm successful completion of all other PMCB requirements. After certification of successful completion of the Qualifying Examination, responsibility for overseeing fulfillment of remaining requirements for the Ph.D. degree resides with the Member Department.

Advancement to Ph.D. Candidacy

Admission to a Ph.D. program does not automatically identify a student as a degree candidate. Students must first be admitted to candidacy for the Ph.D. degree. Advancement is granted only after the student has demonstrated knowledge of the fundamentals of his or her field and the ability perform research that will result in a PhD dissertation.

The Departmental Graduate Director shall have responsibility for recommending students for advancement to Ph.D. candidacy when all of the program's other academic requirements have been met, as specified in the Graduate Council By-Laws.

Formation of Oral Examination Committee

All instructions and guidelines adopted by the Graduate Council By-Laws shall be carefully followed.

According to the Graduate Council By-Laws, the Oral Examination Committee for a dissertation defense:

- Must include no fewer than four (4) members of the Graduate Faculty who do not all have primary appointments in the same department or institute.
- Must include at least one (1) member who is not a member of the student's Dissertation Advisory Committee.
- Must be chaired by a member of the Graduate Faculty.

- The student's dissertation advisor should serve on the committee but may not serve as Chair.
- Programs may request permission to replace one of the committee members by a recognized scholar who is not a member of the Graduate Faculty.
 - 1) This individual may not serve as Chairperson of the exam committee.
 - 2) Requests to appoint an outside member to the exam committee must be supported by a letter from the Program Director and a copy of the scholar's curriculum vitae.
 - 3) Appointment of an outside member may be used to meet the requirement that not all members have primary appointments in the same department or institute, and/or that the committee includes at least one member who was not a member of the student's Advisory Committee.

The Oral Exam Committee is approved by the Associate Dean for Graduate Studies based upon the recommendation of the student's Program in the term prior to the student's defense.

Preparation and Submission

Complete Dissertation Guidelines can be found at <https://www.ohsu.edu/school-of-medicine/graduate-studies/forms-and-policies>

Dissertation Seminar

The exam must be held on campus and be open to the public. The Program is responsible for setting the date, time and place of the exam and for posting notices on campus.

Finalizing Ph.D. Requirements

OHSU awards diplomas each term, based on the completion of final paperwork and dissertation binding. The following requirements must be completed within six months following the completion of the Oral Examination. However, students must complete all requirements before May 20th in order to participate in the graduation ceremonies in June of the same year.

- a) Corrections to Dissertation. If necessary, make corrections to the dissertation.
 - All members of the Examination Committee who recorded a satisfactory vote for the oral examination must sign the CERTIFICATE OF APPROVAL page. Signing of the approval page indicates that all required corrections have been completed.
 - All required corrections must be completed and approved by the Examination Committee within 6 months after the oral exam. Programs may impose a stricter deadline. Graduate Studies will defer to program.
 - Failure to submit an approved dissertation within this time limit will void the oral exam and the oral examination will need to be retaken.
- b) Electronic Submission of Dissertation. The Library requires OHSU students to submit an electronic copy of their doctoral dissertation. Additionally, students are required to submit an electronic copy to the MMG graduate program coordinator for program records.
 - Students should email their electronic copy in PDF format along with required forms to ethesis@ohsu.edu at least two weeks before signed forms are due in the Graduate Office.

- The page containing your committee members' signatures should not be filled out for the copy you submit to the library.
 - Workstations in the library are set up with all necessary applications. Limited support can be arranged prior to submission.
 - Review Theses, Dissertations, Capstones, & Portfolios on the [OHSU library website](#) for required forms, more detail on submission requirements and options for electronic publishing.
 - The OHSU LIBRARY DOCUMENT SUBMISSION FORM & RECEIPT is required by the Graduate Studies Office. The Library will copy the Graduate Studies Office when they email their signature acknowledging receipt to you for your thesis/dissertation. In addition, you may forward the signed librarian receipt to somgrad@ohsu.edu. If you receive a hard copy receipt, please deliver the original receipt to the Graduate Studies Office. A copy of the credit card or payment receipt is not required.
- c) Application for Degree. The Office of the Registrar requires that the APPLICATION FOR DEGREE form be completed and is required in the Registrar's Office one term prior to completing degree requirements. Exit contact information will be collected on the 'Application for Degree' form.
- d) Survey of Earned Doctorates. The required Survey of Earned Doctorates can be found at <https://sed-ncses.org/>. Student responses are confidential, except for the postgraduate placement information (institution and job title), which may be shared with the programs.
- e) After all the preceding requirements have been completed, the Associate Dean for Graduate Studies will review all paperwork and sign the Oral Exam Certification form.
- The original form will be forwarded to the Registrar as final approval of the dissertation and acceptance for graduation.

Graduation. Information regarding graduation will be posted to the Graduate Studies website at www.ohsu.edu/som/graduate

School of Medicine Commencement Ceremony. This is a special event when graduate degrees are formally conferred for those who received a degree from the School of Medicine during the prior academic year. Family and friends are encouraged to attend and no ticket is required. Degrees will not be awarded until all academic requirements have been met and the student pays all debts and discharges all other obligations he or she has to the University, including the Registrar's graduation fee.

Ethical and Professional Behavior

In compliance with federal regulation and OHSU institutional policy, all investigators, research staff, and other relevant personnel (those reasonably involved in the design and/or conduct of human, animal, applied and/or basic science research) must complete OHSU's Responsible Conduct of Research (RCR) education.

All Doctoral and Master's students are required to successfully complete at least one course in ethics and professional conduct or be exposed to equivalent content.

Refer to [Graduate Studies Policies and Guidelines](#) for more on behavior and conduct policies.

Graduate Student Stipends

All MMG students are fully supported by stipends from NIH training grants or from grants held by their mentors.

Refer to [Graduate Studies Policies and Guidelines](#) for more PhD Student Stipend Information.

Time Limit for Completing Degree Requirements

For the Ph.D. degree, 135 approved graduate credits are required. Graduate credit toward Ph.D. degree requirements shall be granted only for coursework completed during the 7 calendar years (28 terms) prior to completing all degree requirements.

Dismissal

Refer to the Academic Bylaws, which can be found on the SOM [Graduate Studies Forms and Policies](#) page.

Grievances

The procedure for handling grievances is outlined in the Academic Bylaws, which can be found on the SOM [Graduate Studies Forms and Policies](#) page.

Exceptions

In matters related to coursework, exceptions must first be approved by the Course Director and the Program Director. Other exceptions must first be approved by the Program Director.

Additional Policies

MMG follows all academic and student policies laid out in the student handbook, which include but are not limited to the following:

- Vacation sick leave policy
- Academic adjustment policy for new parents
- Continuous enrollment policy
- Mentor-Student Discussion policy
- School of Medicine technical standards

The Student Handbook will be emailed to you once a year, and can always be found on the SOM [Graduate Studies Forms and Policies](#) page.