STUDENT HANDBOOK FOR Ph.D. STUDENTS IN MOLECULAR AND MEDICAL GENETICS

These rules pertain to all students in the Department of Molecular and Medical Genetics (MMG) 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."

The Ph.D. program is organized as follows:

Year 1: Begin to complete course requirements.
Complete three laboratory rotations.
Prepare for and complete the 1st-year PMCB comprehensive qualifying exam.
(Students scoring below 70% on the 1st year comprehensive qualifying exam will be required to take a course of action to remediate the deficiency. Remediation should be completed no later than Spring of year 2.)
Choose a dissertation advisor.
Note: During the first year, the student will be mentored by a PMCB advisor, appointed by the PMCB Advisory Committee.

Year 2: Complete required and elective courses.
Prepare for and complete the 2nd-year candidacy exam.

Year 3 and up: Undertake research leading to the Ph.D. dissertation.
Attend and participate in Departmental Seminars and a Journal Club

REQUIRED GRADUATE COURSES IN MOLECULAR AND MEDICAL GENETICS

Fall Term 2nd Year:

MGEN 622	Eukaryotic Genetics	3 credits
MGEN 607a	Departmental Seminar	1 credit
MGEN 611	Departmental Grand Rounds*	1 credit
MGEN 601	Research	6-10 credits
Journal Club		1 credit
Elective Courses		0-4 credits
	Second Year Fall Term Course Total:	16 credits

Winter Term 2nd Year:

MGEN 611	Departmental Grand Rounds*	1 credit
MGEN 607a	Department Seminar	1 credit
MGEN 601	Research	9-13 credits
Journal Club		1 credit
Elective Courses		0-4 credits
	Second Year Winter Term Course Total:	16 credits

Spring Term 2nd Year:

MGEN 623	Genetic Basis of Human Disease	3 credits
MGEN 610	*Essentials of Molecular & Medical Genetics*	2 credits *(optional elective)*
MGEN 611	Departmental Grand Rounds*	1 credit
MGEN 607a	Departmental Seminar	1 credit
MGEN 601	Research	5-9 credits
Journal Club		1 credit
Elective Courses		0-4 credits
	Second Year Spring Term Course Total:	16 credits

Summer Term 2nd Year:

MGEN 601	Research	16 credits
	Second Year Summer Term Course Total:	16 credits

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

MGEN 610	*Essentials of Molecular & Medical Genetics (optional teaching)*	
	Journal Club	1 credit
MGEN 607a	Departmental Seminar	1 credit
MGEN 601	Research	14 credits
	Course Total:	16 credits

Summer Terms Through Completion:

MGEN 601	Research	16 credits

I. NOTES TO COURSE REQUIREMENTS

A. Students are required to:

1. Register for and attend any basic science journal club at the 600 level, year 2 through end of program. Senior students registered for dissertation credit are not required to register for a journal club; however, attendance is encouraged.

2. Register for and attend the Departmental Seminar, MGEN 607, held at 4 p.m. on Wednesdays, Year 2 through end of program, including the term registered for dissertation credit. 3rd year and beyond students are required to give a presentation of their dissertation research once per year.

3. *Register for and attend Departmental Grand Rounds, MGEN 611, held at 9 a.m. on Thursdays during the academic calendar year. Grand Rounds is required for completion of the Ph.D.

B. The School of Medicine requires that a student maintain a grade point average of 3.0. A student with a GPA below 3.0 is automatically put on academic probation and has one term to improve the GPA to a 3.0 or above. If the GPA is not at 3.0 or above within one term, the student may be terminated from the program. (See Bylaws of the Graduate Council, page 10, "Standard of Performance."). Under certain circumstances, a student may be granted up to four academic terms to correct deficiencies that resulted in academic probation. Probationary students who fail to achieve a cumulative grade point average of

3.0 within four terms shall be recommended for dismissal from the graduate program for inadequate scholarship.

C. Only course work (required and elective), and not research credits, will contribute to the GPA. Students must receive a grade of A or B in the required courses specified in this document. The grade of 'B minus' is unacceptable. If a student does not receive an A or B, the student must repeat the course the following year. The course can be repeated one time only. Failure to receive an A or B the second time the course is taken will result in dismissal from the program. The required courses for which this rule applies are CON 661, 662, 663, 664, 665, 667, 668 and MGEN 622, 623.

D. The grade Incomplete is reserved for circumstances in which a student is unable to complete the course requirements by the end of the term in which the course is offered due to circumstances beyond his/her control (e.g. illness), **AND** it is possible to fulfill the remaining requirements within the subsequent term to earn a grade. If a graduate student is having difficulty with a course, he/she may consider formally withdrawing. If the graduate student opts to complete the course, and the resulting grade is unsatisfactory, the student may re-take the course the next time it is offered, <u>not register</u>, and ask that the new grade be substituted for the old by the course director. Withdrawing and grade replacement require approval by the course director and formal notification of the Registrar.

E. If a graduate student fails a semester of research credits (i.e. receives an NP - No Pass on research), the student is put on immediate academic probation. The student is required to obtain a passing grade in the next term (and subsequent terms) of research credits or the student may be terminated from the Ph.D. Graduate Program in Molecular and Medical Genetics.

1. Pre-qualifying Graduate Students:
   A pre-qualifying graduate student is required to notify and meet with his/her dissertation advisor immediately upon receiving a failing grade on the research credits in any one term. The TAC advisor will suggest a course of action that the student must follow in correcting his/her academic performance.

2. Post-qualifying Graduate Students:
   A post-qualifying graduate student, (in consultation with his/her mentor) is to schedule a Dissertation Advisory Committee meeting immediately upon receiving a failing grade on his/her research credits in any one term. This Dissertation Advisory Committee meeting must take place within two weeks of receipt of the failing grade on the research credits. The Mentor and Dissertation Advisory Committee will suggest a course of action that the student must follow in correcting his/her research program.

F. MMG Seminar, MGEN 607, must be registered for and taken Year 2 through end of program, including the term registered for dissertation credit. Students with more than 3 unexcused absences during the year will receive a grade of not passed (NP) for the seminar course. Attendance may be excused for illness, major family emergency or attending a regional, national or international scientific meeting. When a seminar is missed, the student should email the MMG Graduate Studies coordinator indicating the reason for not attending the specific seminar session. **Performing laboratory studies is not an excuse for not attending the seminar.** A graduate student who receives a NP will be placed on

immediate academic probation. The student must receive a 'Pass' the subsequent term and every term thereafter.

G. Genetics Grand Rounds requires documentation of attendance in order to be considered for the grade of 'Pass.' A total of one (1) unexcused absence per term for Genetics Grand Rounds is allowed. A graduate student who receives a NP will be placed on immediate academic probation. The student must receive a 'Pass' the subsequent term and every term thereafter.

Following receipt of the first 'No Pass,' a pre-qualifying exam student must immediately meet with his/her dissertation advisor; a post-qualifying exam student must immediately meet with his/her dissertation advisory committee. A plan for insuring the attendance goal for the next term should be designed.

Two grades of 'No Pass' in any one of the three activities disqualifies a student from taking his/her qualifying exam, resulting in dismissal from the MMG Graduate Program.

Two grades of 'No Pass' in any one of the three activities for a post-qualifying exam student may result in dismissal from the MMG Graduate Program.

II. ELECTIVE COURSES

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.

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

The following are only a few of the popular electives taken by some of the graduate students in MMG. Other courses available are listed in the course catalog and graduate students are encouraged to speak to their TAC advisor or mentor when considering taking other courses.

MGEN 624	Gene & Cell Therapy, 2 Credits, Winter
CANB 610	Current Topics in Cancer Biology, Winter
MGEN 610	Essentials of Molecular & Medical Genetics, 2 credits, Spring (2^{nd} yr elective)
PHPM 524	Intro to Biostatistics
CELL 622	Topics in Transcriptional Regulation, 2 credits, Fall
MBM 656	Topics in Molecular Genetics, 2 credits, Fall
BMI 510	Intro to Biomed Informatics, 3 credits, Spring
MGEN 620	Interviewing & Counseling Techniques for Genetic Counseling, 1 credit, Winter
BEHN 625	Behavioral Genetics, 4 credits, Spring
CELL 611-0	Histology: Structure/Function of Cells in Tissues, 4 credits, Spring
BCMB 618	Protein Design: Structure Related to Function, 3 credits, Winter
CELL 616	Advanced Topics: Cancer Biology, Spring, 3 credits (alternate years)
CELL 618	Mechanisms of Development, 3 credits, Winter (alternate years)

III. PMCB/MMG QUALIFYING EXAMINATION

The purpose of the Qualifying Examination is two-fold. First, the examination will determine if the student has acquired sufficient knowledge and skills to pursue his or her Ph.D. dissertation work. Second, the exam will provide the student with an opportunity to practice the preparation of a research proposal. Before taking the examination, the student must have completed the PMCB and MMG course requirements. In the event that a required course is not offered before the end of the second year, and the student is otherwise prepared to take the candidacy examination, the examination may proceed without completion of the course. However, the required course must be taken prior to the dissertation defense.

During the oral portion of the examination, the student will be expected to make a presentation of the research proposal that should be no longer than 30 minutes. The presentation is followed by questioning that may cover all areas of genetics and molecular biology relating to the written proposal as well as general knowledge of molecular and medical genetics.

The format, timing and all requirements for the Qualifying Examination may be found in the document "Academic Guidelines for PMCB", available on the PMCB website.

IV. Ph.D. DISSERTATION ADVISORY COMMITTEE (DAC) GUIDELINES

Within three months of passing the Ph.D. Qualifying exam, the advisor and student must submit a suggested dissertation advisory committee to the MMG Graduation Education Committee (GEC) for approval. The GEC will send a memo approving the committee to the student and dissertation advisor. This memo will be placed in the student's file in MMG.

The following guidelines for the composition of the committee should be followed:

A. The committee should include the advisor and at least 3 other faculty members who represent expertise relevant to the student's dissertation project. The advisor cannot serve as the Chair of the committee; the chair will be responsible for moderating the discussions.

B. All members of the advisory committee must be members of the OHSU Graduate Faculty. At least one member of the committee must have an appointment (primary or adjacent) in MMG.

C. At least one member other than the advisor must be experienced in advising a Ph.D. dissertation student; that is, he/she must have been a mentor for at least one student who has successfully completed his/her Ph.D.

D. The responsibilities of the student are:

    1. To schedule the meetings in a timely fashion and in accordance with the guidelines set forth in this Handbook.

    2. Prior to each DAC meeting, the student will prepare a summary of recent research accomplished. The purpose of this summary is to provide the DAC with an overview of previous goals that were stated and how these goals were met (or if not, the reasons for

not achieving the goals). Following approval by the student's mentor, this summary and the final summary statement from the prior DAC meeting, are submitted one week prior to each committee meeting to the MMG Graduate Student Coordinator (GSC), who will distribute these materials to DAC members. Electronic submissions to the GSC are acceptable. An example of a research summary is available from the GSC.

3. Students should prepare an oral presentation encompassing dissertation research goals and accomplishments (usually ~ 30 minutes). Students are encouraged to schedule these meetings to coincide with their departmental presentations when possible. Following the presentation, there will be a 1-1.5 hr discussion with the Committee.

4. Students should prepare, in consultation with the mentor, a summary of the meeting and recommendations, and a tentative date for the next committee meeting. This summary statement must be sent to each committee member, the GSC, and the DGE **within 3 days** following the committee meeting. The GSC will contact each member of the DAC to document approval of the summary statement. Electronic submissions are acceptable.

5. Students must meet with their DAC at least once a year after the initial meeting. Students in their 5th year or beyond are required to have meetings twice a year. The DAC may meet more frequently on the recommendation of his/her mentor and/or Committee.

E. Expectations and Responsibilities of the DAC:

The purpose of a DAC committee is to provide expertise/guidance to the graduate student regarding their dissertation research and to identify any problems or obstacles that arise.

1. As members of a student's DAC, faculty are expected to attend all meetings and be available to the student for further discussions.

2. A first time committee member should schedule a time to meet with the DGE to discuss the expectations and responsibilities of DAC faculty.

3. Committee members are expected to review materials from the student in a timely manner and provide constructive feedback.

At the final DAC meeting prior to a student's dissertation defense, it is expected that the student will receive unanimous approval from the committee that no additional experiments are necessary and that the student is ready to complete their dissertation. If there is not unanimous consent, further meetings may be necessary and the MMG GEC may be called to mediate the discussions. There may not be additional committee members added after this final meeting and decision to move forward.

V. MMG PREPARATION AND SUBMISSION OF DISSERTATION

A. The student will register for dissertation credit during the term(s) dedicated to writing the document and defending the dissertation. The hours for which the student registers should be decided in consultation with the mentor.

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

C. In addition, the Department of Molecular and Medical Genetics requires the following actions in order for the student to present his/her dissertation:

1. Prior to submission to the student's DAC, the dissertation must be reviewed thoroughly by the student's mentor. At **least seven weeks prior** to the intended defense date, the student shall submit to the Graduate Student Coordinator (GSC), in person, as many copies of his/her dissertation in final form as necessary (one copy per Dissertation Advisory Committee Member). At this point the dissertation must be a near-final version, for which only minor revisions will be necessary. All illustrations and legends need to be enclosed at this time. It is in the student's best interest to submit a well-thought out, prepared dissertation in order to prevent further time delays. The student or GSC will then submit a copy of the dissertation to each of the graduate student's Dissertation Advisory Committee Members with an MMG Dissertation Approval form attached.

2. The Dissertation Advisory Committee Members shall have up to **two weeks** to review the dissertation and return it to the student with his/her comments and guidelines for revision. Revision is expected for the written part of dissertation only, requiring no further experiments (See above IV-E). The Dissertation Advisory Committee members must sign off on the MMG Dissertation Approval form following the two-week review if they consider that the dissertation is in final form. All members of the Dissertation Advisory Committee must sign the Dissertation Approval Form. It is the responsibility of the student to insure that each committee member has signed the form and that all forms are returned to the GSC. All Dissertation Advisory Committee Members must be in unanimous agreement that the dissertation is at least satisfactory.

3. Once all Dissertation Approval Forms have been submitted, the GSC will advise the MMG Director of Graduate Education (DGE) that the dissertation is in essentially final form and that the student's body of work clearly indicates that the student is ready to proceed to the next step, namely the seminar and defense.

4. At this time, the student will submit to the GSC the Graduate Studies Program "Request for Oral Examination" form that lists the members of the Dissertation Examination Committee, which may include some or all of the Dissertation Advisory Committee members, noting the Dissertation Examination Chairperson in the area provided on the Dissertation Approval Form. The Chairperson must be a Graduate Faculty member but cannot be a member (or a joint appointee) of the Department of Molecular and Medical Genetics nor can the Chairperson be the student's mentor. In addition, the SOM requires appointment of an examination committee member **NOT** a member of the Dissertation Advisory Committee and who cannot be assigned as the Committee chair.

5. The GSC will complete the Request for Oral Dissertation Examination Form and submit it to the DGE for signature. The GSC will then forward it on to the Graduate Studies office. **The submission of this form to the Graduate Studies office must be at least four weeks prior to the date of the exam.** It is recommended that at this time, the student submit a copy of his/her revised and approved dissertation to the GSC for distribution to the Dissertation Examination Committee**. The student must submit his/her approved dissertation no later than two weeks before the examination in order for the exam to take place as scheduled**. The GSC will record the date of submission and make sure that the student is in compliance with these guidelines. If the student is not in compliance with these guidelines, the GSC will notify the DGE. The DGE will then determine the proper course of action with the possibility of postponing the exam until the Committee has had at least two weeks to review the dissertation (dependent upon the Committee Members availability).

VI. FINAL STEPS FOLLOWING THE DISSERTATION DEFENSE

A. OHSU awards diplomas each term, based on the completion of final paperwork and dissertation binding. The following requirements must be completed within one month following the completion of the Dissertation Presentation and Defense:

1. **Corrections to Dissertation**. If necessary following the dissertation seminar, make any minor 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.
    a. All required corrections must be completed and approved by the Examination Committee within 1 week after the oral exam.
    b. Failure to submit an approved dissertation within this time limit will void the oral exam, and the oral examination would have to be retaken.
    c. The ORIGINAL of the signed *CERTIFICATE OF APPROVAL* page must be taken to the OHSU Library with the read to bind dissertation.

2. **Dissertation Binding**. At least three copies of the dissertation must be bound: one copy is deposited in the OHSU Library, one copy is for the Program, and one copy is for the student's mentor. The OHSU Library arranges for binding of the copy deposited in the Library.

3. **Application for Degree**. The Office of the Registrar requires that the *APPLICATION FOR DEGREE* form be completed and turned in to the Registrar's Office one term prior to completing degree requirements.

4. **Exit Photograph.** The School of Medicine Exit Photo consists of one (1) digital image from OHSU Photography.

5. **Exit Contact Information Form**. Complete and send this required form to the Graduate Studies Office.

B. Students must complete all requirements before May 20th in order to participate in the graduation ceremonies in June of the same year.

VII. MISCELLANEOUS

A. **Travel Awards**

The Department of Molecular and Medical Genetics will help cover the cost of up to two conferences over the course of an MMG graduate student's training. Only one of these two trips may be taken each academic year. Travel awards will be limited to $1500 per (is this enough?) trip and be contingent upon the student passing the Qualifying exam and submission of a Tartar grant application. Travel awards are intended for students in good academic standing through their 6th year of training.

An application must be submitted the Departmental Director of Graduate Education and should include: a description of the conference, the location, date, and estimated cost. A 300 word abstract on why the trip is relevant to the student's research should also be attached. The intent of the award is for the student to gain exposure at a scientific conference by presenting a poster or platform presentation.

B. Grievances

The procedure for handling grievances is outlined in the OHSU Graduate Studies Handbook.

C. Extracurricular Employment

The Department of Molecular and Medical Genetics considers enrollment as a graduate student in the Ph.D. program to represent full time employment. Students are strongly discouraged from seeking outside employment. Any student wishing to pursue outside employment must submit a written request to the TAC advisor and/or mentor, the Director of Graduate Education and the Chairman of MMG. The student must receive written authorization from the above individuals prior to accepting employment.

D. Sick Leave and Vacations

Graduate students with stipend support who are enrolled in Ph.D. programs in the School of Medicine may take up to 15 days of sick leave with pay per academic year (July 1– June 30). Sick leave accrues at the rate of 1.25 sick days/month. Additional sick leave or other "leave of absence" must be without pay. Extended leaves of absence must follow a formal petition and/or filing process through the MMG department and the SOM Associate Dean of Graduate Education office.

Students and mentors are expected to be both reasonable and flexible in making decisions about the student's commitment of time to course and laboratory work as well as to other training-related activities. Graduate students who receive stipend support will not accrue paid vacation leave. Students are entitled to the normal holidays in the academic calendar. The time between academic quarters is to be used as an active part of the student's training. The student should request vacation time in writing to his/her mentor at least two weeks in advance.

For additional information see the **School of Medicine Graduate Student Vacation and Sick Leave Policy.**

E. **Masters Degree**

The OHSU Department of Molecular and Medical Genetics does not routinely offer a masters degree. Under special circumstances, a graduate student may petition the Graduate Education Committee in writing to allow the student to complete a terminal masters degree. Approval of this request by the Graduate Education Committee must be unanimous.

In the rare case where a masters degree is offered, the student is required to pass a candidacy examination, following the same procedures as outlined for a doctoral candidacy examination. The same rigorous standards apply to student performance in a master's candidacy examination as in a doctoral candidacy examination. Students failing a candidacy examination will not be candidates for a masters degree. A written dissertation is required to earn a masters degree. In addition, a masters dissertation defense examination must take place, with the same requirements as for the doctoral dissertation, except the number of credit hours required (45 vs.135 credit hours). A dissertation advisory committee is required, the composition of which is in keeping with section IV of these guidelines.

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