

## PMCB QUALIFYING EXAMINATION (end of year 2)

**Eligibility:** To be eligible to take the PMCB Qualifying Examination (QE), students must have successfully completed all coursework required in the first two years of the PMCB curriculum, and they must have received a passing grade on the PMCB Comprehensive Examination. Students may not take the qualifying examination if they are on academic probation or if an incomplete grade remains on their transcript.

**Format:** The QE consists of a written and oral component. The candidate must pass both the written and oral portions of the examination in order to pass. The written component will resemble a NIH-style NRSA grant proposal on any topic chosen by the student, including the student's proposed thesis research. The oral component will consist of a 20-30 minute presentation by the student on the topic of the written proposal. Members of the student's Qualifying Exam Committee (QEC) will ask the student a series of questions on the proposal and related scientific areas.

**Timeline and description** – Specific dates for the exam will vary slightly from year to year, but the following are general guidelines for stages of the QE; earlier completion is encouraged. Extension of these deadlines for any reason will only be considered by written request to the student's QEC (or PMCB Director if the QEC has not been formed). Students may request permission to take the QE earlier than the schedule below. 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. A timeline *similar* to that below should be adhered to in the case of early exams.

**July 15** - Students submit a two-page, single-spaced prospectus to their department and the PMCB office ([pmcb@ohsu.edu](mailto:pmcb@ohsu.edu)) that defines the topic for their QE proposal, describes potential questions to be addressed 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. Department program directors will oversee selection of the student's QEC. Students may suggest names three faculty members to be part of their QEC (although there is no obligation on the part of the department to choose the suggested individuals for the panel).

**July 22** – 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.

**July 29**– The QEC notifies the student in writing of acceptance or of any weaknesses or specific suggestions for improvement to their proposal.

**August 5** – Student schedules a date for the oral examination in consultation with his/her QEC.

**at least one week prior to Oral Exam** – Student submits final written proposal to the QEC and their thesis advisor.

**at the Oral Exam** – Student submits a letter to the QEC from their thesis advisor, describing their role during preparation of the proposal (see "Role of Thesis Advisor and Other Faculty" below).

**at least ten days before the beginning of Fall term** – Oral examinations completed.

If scheduling difficulties exist and the exam cannot be completed by the time grades are due (one week after the end of the term) the student will receive an incomplete "I" grade. Incomplete grades remaining on the student's record after one subsequent term will convert to a no pass "NP".

**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.

**Role of Thesis Advisor and Other Faculty:** To facilitate an objective examination, the student's mentor is not permitted to edit or comment on the written proposal. Neither is the mentor, 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 Oral Examination:** 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 the Oral Examination:** 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.

**Outcomes:** The outcome will be decided by majority vote of the QEC and be recorded on the [PMCB Qualifying Examination form](#). The form shall be signed by all voting members of the examination panel and returned promptly to the PMCB office. PMCB will inform students of the outcome immediately after the results are received. Possible outcomes include:

**Pass** –The student passes both the written and oral examination. In certain circumstances, the QEC may identify specific areas of weakness that the student needs to address during subsequent thesis work. This information will be communicated in writing to the student, thesis advisor, and PMCB by the chair of the examination panel.

**Conditional Pass** – A conditional pass may be given for either the written or oral components of the examination if significant deficits are identified. In this case, the student will be provided with specific requirements that must be met within a prescribed time frame. A variety of requirements may be assigned at the discretion of the QEC to correct a perceived deficit, including (but not limited to) additional coursework; revision of some or the entire written proposal; assignment of additional directed reading; preparation of a written review of a particular topic; or presentations in journal club formats. In the case of assigned additional coursework, the student must complete the assigned course(s) with a grade of “B” or better. Within one week of the oral examination, the chair of the QEC will prepare a written statement to the student describing the conditions required to remove the conditional pass. The chair of the student’s QEC will be responsible for notifying the student, the student’s thesis advisor, and the PMCB office when the student has successfully completed the requirements of the conditional pass. Failure on the part of the student to complete the requirements within the prescribed time frame will be considered unsatisfactory progress, and the student may be subject to dismissal from the PMCB.

**Fail** – If the student fails either portion of the examination, the student fails the Qualifying Examination. Within one week of the examination, the chair of the Examination Panel will provide a written statement to the student, the thesis advisor and the PMCB office, describing the deficiencies that led to failing the qualifying examination. The student may petition the QEC to take the qualifying examination (written and oral) again within the subsequent three months, or alternatively may resign from the graduate program. The QEC may also elect to offer the student the option to complete a Master’s Degree, rather than re-taking the Qualifying Examination. In such a case, students will be obligated to complete all the requirements for the Master’s Degree of their home department. The QEC will counsel the student with respect to the most prudent course of action. If the student decides to re-take the Qualifying Examination, then he/she must submit a revised or new proposal to the QEC as summarized above; and will have five weeks to complete the full proposal.

**Timeline for re-examination:** The re-examination procedure must be completed within three months of the original examination, but no later than the end of Fall term of that year.

**Outcome for re-examination:** Students will be assigned a “pass,” “conditional pass,” or “fail” by the same criteria as summarized above. Failure to pass the QE after two attempts will automatically result in dismissal from the graduate program.

**Qualifying Examination Committee involved in the administration of PMCB Qualifying Examinations (QEC - 5 members):** This committee is responsible for administering a specific qualifying examination. For each student, the Department Program Director will appoint an examination panel of five faculty members and assign one panel member to serve as chair. PMCB recommends that three of the panel members have primary appointments in the department. Each of

the five members of the QEC will participate in the examination process and vote on the outcome. In addition, a non-voting member representing PMCB may attend all deliberations and meetings of each QEC. The student's advisor/mentor may NOT be appointed to the panel. The advisor/mentor may attend the qualifying examination as a non-voting, silent observer. The advisor/mentor may NOT attend sessions when the panel privately discusses the student's performance, except at the unanimous invitation of the panel. The QEC will be responsible for evaluating the written and oral components of the examination, for determining the outcome, and for identifying any requirements that a student must complete in the case of a conditional pass. Each student will have their own QEC, though PMCB faculty may serve on multiple panels. All students should refer to individual department QE guidelines as well to ensure compliance.

**Advancement to Candidacy:** Upon successful completion of the qualifying examination, students will become eligible for recommendation for advancement to candidacy. The PMCB Director will sign the Qualifying Examination form indicating successful completion of all PMCB requirements and forward the form to the relevant department. The department chair or graduate program director will have responsibility for recommending students for advancement to Ph.D. candidacy when all of the department's academic requirements have been fulfilled.