FINAL

COLLEGE OF GRADUATE STUDIES
ADMISSION TO CANDIDACY EXAMINATION GUIDELINES

Purpose of the Exam

To qualify for admission to Candidacy, PhD students must pass a Written proposal and Oral examination administered by their Examination Committee. The objective of the Admission to Candidacy exam ("EXAM") is to determine whether a student understands the principles of their chosen field, can read and comprehend relevant literature, and can construct convincing hypotheses and a cogent experimental plan. All of these are essential to a successful career in science and will be considered in grading the EXAM. After passing the EXAM, the student is certified as a Candidate for the PhD degree.

Timetable: Spring of Year 2*:

Step 1	**Project planning phase**
January	Meeting with Students: "Preparing for EXAM
	Mentored meetings on Dissertation Proposal
	Establish the Examination Committee
Step 2	**On-topic written proposal**
April 1	Submit a one-page proposal (Specific Aims) to the Chairperson
	Chairperson provides student with approval or requests revisions.
Step 3	**Oral exam**
June 1	Submit Final Revised Proposal to all committee members (due by 5 pm)
June 30	Completion of Oral exams.

*Students are encouraged to begin the process early and may chose to do their qualifying exam prior to the indicated dates to avoid any potential conflicts in scheduling. Questions regarding extensions due to extenuating circumstances should be directed to the Graduate Coordinator.

OUTCOMES

PASS: Students Admitted to Candidacy

CONDITIONAL PASS: Students must complete all committee requirements and receive the committee's approval by Sept 30 th of their 3rd year.

FAIL: Students must complete all components of the re-examination and receive a PASS from the committee by Sept 30 of the 3rd year (i.e., within 3 months of the initial deadline).

General Comments:

Examination committee members: A student will select an examination committee **("committee")** that may also serve as the student's dissertation committee. However, changes to this committee may be made by the student following completion of the EXAM. The committee will consist of a minimum of 3 graduate faculty in the student's program, and two external members outside of the program of study or Track, one of whom is from a pool of faculty approved by CGS to ensure fairness and equity in the qualifying examination process.

The choice of this CGS faculty member will be by the mentor to ensure appropriate scientific balance and diversity of scientific expertise. This faculty member is also charged with ensuring that all students are treated fairly and equitably across the different exams. Committee membership should receive final approval by the student's Graduate Coordinator.

Chairperson: The student will choose a faculty member other than their mentor (or co-mentor) to serve as the chairperson of the committee. The principal responsibility of the chairperson of the committee is to create conditions under which the student being examined is able to display his/her best abilities. In addition to presiding over the oral examination itself, the chairperson acts throughout the examination process as the student's primary contact person with the examination committee. He or she should be available to the student to give advice and guidance.

General tips for proposal:

1. Students are permitted to discuss their proposal with members of their committee and their mentor. However, the mentor (and co-mentor if one is appointed) are not to provide detailed feedback on the topical content of the written proposal. Mentors may provide recommended readings and edits to the structure of the written document.
2. Talk to other students that have completed the process and look at examples of successful proposals. We suggest that you have at least one mock oral exam with other students and postdocs (no faculty).
3. Students should take ownership of their graduate training by utilizing all resources available and making a strong effort to learn from the qualifying exam process. Many important skills are incorporated in the qualifying exams.
4. Students should read and be familiar with the literature they cite in the written proposal and oral examination and be prepared to answer questions regarding cited studies.
5. Students should be able to relate their didactic coursework from the 1st year to the work in their proposal and be prepared to answer questions related to the 1st year curriculum.

Details of the EXAM Process:

The EXAM consists of a written research proposal developed by the student and a closed door, oral defense of the proposal in front of their committee. The topic of the student's proposal may focus on the work in the student's research laboratory but must be of the student's own intellectual effort. However, if the student has submitted a proposal for external funding prior to initiating their qualifying proposal, they must chose a topic distinct from the previously submitted proposal. Questions regarding the suitability of a prior submitted proposal should be directed to the Graduate Coordinator and Committee Chairperson.

Initially, a 1-page Specific Aims of the chosen topic is submitted to the Committee for approval. The Specific Aims page should briefly and clearly articulate the proposed research topic and its importance to medical research, any hypotheses to be tested, potential specific aims, and techniques you would use to test your hypotheses. This 1-page document is very important, and by the time you submit it, you should be well versed in the background of that field so that you have a clear idea about the experiments you plan to propose and their feasibility.

Students will write an NIH NRSA-style research proposal. Directions for the NIH NRSA format can be found at the following: https://researchtraining.nih.gov/programs/fellowships/F31. The proposal will consist of the 1 page Specific Aims + 6 pages Research Strategy, single-spaced, with 0.5 in margins on all sides, and 11 pt font (Arial, Helvetica, Palatino Linotype, or Georgia). The 6 page Research Strategy should consist of a **Background** section (1-2 pages) that provides the necessary context for the proposed studies, a section on **Innovation**, followed by the **Specific Aims** detailing the questions to be addressed and the methodologies to be

used. In addition, it is critical to discuss anticipated results, potential pitfalls and alternative approaches.

The Specific Aims page must be submitted to the Committee no later than 5 pm on April 1. The Chair will then accept the aims "as is" or provide recommendations for revising and resubmitting. If the aims are deemed unsatisfactory, the student must revise or resubmit it within one week. For these students, all future deadlines will remain unchanged.

Criteria for acceptable Specific Aims

1. Content - The proposal may involve some aspect of the research work being performed in the student's laboratory. However, if the student has previously submitted a proposal for funding to either an extramural or internal source, the EXAM proposal may not overlap in content with the prior submission, i.e. the specific aims must be different. Questions regarding suitability should be directed to the Graduate Coordinator and Committee Chairperson.
2. Hypothesis Testing - The proposal should test a hypothesis as an integral feature of its structure.
3. Detail - The Specific Aims page should contain sufficient detail about background studies and methods for the committee to make an informed decision on whether the topic is appropriate for this exam process.

The Final Written Proposal is due to all committee members no later than 5 pm on June 1. This Final Proposal should represent a polished and well thought out proposal. It DOES NOT constitute a "rough draft.

Note: If a student does not adhere to the submission deadlines without an acceptable excuse (e.g. major illness), s/he will likely fail the EXAM. His/her case will be discussed by the Graduate Coordinator and Program faculty and may be given a second and final chance for examination on a case-by-case basis.

Literature Cited (does not count toward proposal length)

List all literature references. Each reference must include the title, names of all authors, book or journal, volume number, page numbers, and year of publication. *The references should be limited to highly relevant literature*. While there is not a page limitation for this section, it is important to be concise and to select only those references pertinent to the proposed research.

Writing the proposal

- Students are expected to interact with the chairperson of their committee while preparing the proposal so that deficiencies can be identified and corrected early in the process. The chairperson may provide advice on mechanical aspects of preparing the proposal, *e.g.* what constitutes adequate referencing, and draw the students' attention to areas of the proposal that are weak and require more work. It is acceptable for them to provide some directions for consideration as well as editorial input, but the chairperson should not write any portion of the proposal. The chairperson's role is similar to that played for a faculty colleague who wishes to get input on preliminary drafts of a grant application he/she is writing.
- The written proposal is intended to be a vehicle for students to display their capabilities to their best advantage and for the process to be a positive learning experience. Interactions between students and faculty to foster these aims are therefore encouraged. Any specific suggestions provided by others should, of course, be explicitly acknowledged in written and oral presentations. Such acknowledgment does not detract at all from the student's own intellectual effort in compiling the proposal, but represents a professional courtesy to those who have helped along the way.

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Plagiarism

Plagiarism is defined as the practice of taking someone else's work or ideas and passing them off as one's own. It is strictly forbidden, and individuals that plagiarize work will be given a failure for the EXAM. It is critical that the proposal be written in the student's own words (cutting and pasting from a review, scientific article, or mentor's grants is unacceptable). This is true for all aspects of the proposal, including figures, figure legends and methods descriptions.

The Oral Examination

Students will defend their written proposal in a closed door exam with the members of their exam committee. Oral examination dates/times will be set prior to June 30 of the student's 2nd year. It is anticipated that the oral examination process will last at least 1.5-2 hrs. Students should reserve a room for the exam for at least 2.5 hrs. All of the committee members must be present (electronic participation is allowed). During the oral examination, the student is asked to make a short 20-30-minute uninterrupted presentation summarizing the research project as a launching point for the question/answer period that follows. Questions may broadly cover aspects of the proposal and research design, but primarily will be oriented towards the proposal. After this phase of the examination, the committee will adjourn to discuss the candidate's performance. The determination for pass/fail for the EXAM is dependent upon the student's written and oral presentations and responses to questions posed by the committee. These questions normally focus on:

- the theoretical basis of the experimental techniques selected,
- the appropriateness of the experimental methods to the specific aims of the project,
- the limitations of the experimental methods.
- the exact nature of the results that are to be expected (this does not mean only the results that will support the hypothesis),
- the interpretation of these results (including a critical assessment of ambiguities that may arise),
- alternatives should the primary experimental approach fail.
- In addition, questions about subjects covered in course work especially relating to, but no limited to, the proposed work are appropriate.

The written proposal and oral exam will be graded according to the attached rubrics. The overall score of the qualifying examination will encompass both the written and oral portions.

Possible outcomes of the initial EXAM

1. PASS. The student has met the expectations of the Committee.
2. CONDITIONAL PASS. If a student has significant deficits in the written proposal and/or the oral defense, the committee may ask that the student re-write portions of the proposal or address, in writing, responses to specific question(s) that the student failed to demonstrate understanding during the oral exam. Additionally, the committee may or may not require an additional oral defense by the student to ensure satisfactory mastering of the material by the student.
3. FAIL. In the event a student fails the proposal defense, s/he will be given an opportunity to reschedule the exam. The proposal defense may be taken a maximum of two times. Two failures result in automatic termination of enrollment in the PhD program. The student may be eligible for a M.S. with proper completion of a thesis.

Possible outcomes of a Re-exam

1. Pass.
2. Fail. The Committee has decided that the student does not have the potential to complete the Ph.D. program. Please indicate why the student failed the examination.

We wish all candidates the very best of luck in their examination.

After the Oral Examination

After informing the student of the outcome of the EXAM, the committee is asked to fill out the required forms and the student submit one copy to the Graduate Coordinator for the student's program and one copy to the College of Graduate Studies (Dodie Weise). A copy of the rubrics summarizing the examination process should also be submitted to the College of Graduate Studies (Dodie Weise). The rubrics from all committee members is not required, only an overall summary submitted by the Chairperson.