

**Baylor College of Medicine
Graduate School of Biomedical Sciences**

**Qualifying Exam
Procedures and Rules**

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GRADUATE
SCHOOL
OF BIOMEDICAL SCIENCES

A: INTRODUCTION

The process of preparing for a Qualifying Exam provides students with an opportunity to synthesize their general and discipline-specific knowledge, and to apply creative thinking to generate an original research proposal.

1. The purpose of the Qualifying Exam taken by BCM graduate students is:
 - a. To examine the student's general and discipline-specific knowledge.
 - b. To test the student's ability to identify, articulate, orally present and defend an original and creative research project.
 - c. To examine the student's ability to formulate hypotheses based on an understanding of the published literature and to test those hypotheses with a clear and feasible research plan.
 - d. To test the student's ability to write a fellowship-style proposal on the topic in the field of their thesis research.
2. The Qualifying Exam should prepare the student to submit their own fellowship application, but does not require that they do so.
3. Passing the Qualifying Exam is a requirement for admission to Candidacy for the Ph.D.
4. Passing the Qualifying Exam is not a requirement for a terminal MS degree. Students can be considered for a MS degree if they do not pass the Qualifying Exam, provided they satisfy all requirements for that degree (e.g. course work and generation of a research product).

B: TIMING OF THE QUALIFYING EXAM

1. The Qualifying Exam should be scheduled in Terms 1-5 of the student's second year, taking place before the end of the second year. Exceptions must be approved by the GSBS Dean.
2. With the permission of the student's program, the Qualifying Exam may serve as the student's Year 2 Spring Committee meeting. If the Qualifying Exam does not serve as the Year 2 Spring Thesis Advisory Committee (TAC) meeting, the student with the input of their program, may schedule this TAC meeting prior to or after their Qualifying Exam.
3. Each graduate program will offer a class to prepare their students to take their Qualifying Exam. The precise timing, format and content of the class is left to each graduate program, but should include discussion sessions where each student receives feedback from faculty on the formulation of the Specific Aims for their Qualifying Exam proposal. (See [Appendix A](#) for courses)
4. Second year students will meet with their graduate program leadership and/or faculty members in charge of their program's Qualifying Exams early in year 2, prior to the students starting to formulate their Specific Aims. The purpose of this meeting is to make students aware of the rules and guidelines for the Qualifying Exam, and to review the criteria that will be used to assess student performance on the exam.

C: FORMAT OF THE QUALIFYING EXAM

1. The first component of the Qualifying Exam is a written proposal structured as the Specific Aims and Research Plan of an NIH F31 NRSA fellowship: one page of Specific Aims and a six-page research plan inclusive of figures. References, biosketches and certifications are not included in the page limits. The proposal should follow the NIH requirements for formatting.

The written proposal should also include the student's NIH-style biosketch and a statement by the student indicating their contributions to the design and preliminary data of the proposal ([Appendix B](#)). The student should also indicate the names and contribution of individuals assisting the student with the preparation of the proposal. A Qualifying Exam Certification must accompany the submission (see Section D below).

2. The second component of the Qualifying Exam will be a 25-30 minute oral presentation by the student.
3. The third component of the Qualifying Exam will be a 60-90 minute period of oral questions from the exam committee to test the student's general scientific knowledge and discipline-specific knowledge pertaining to their proposal.

D: PREPARATION FOR THE QUALIFYING EXAM

A student's mentor is expected to assist the student in preparing for their Qualifying Exam, respecting the rules below. Each proposal submission must be accompanied by a Qualifying Exam Certification ([Appendix C](#), part I) attesting that the student and mentor abided by the following guidelines.

1. The Specific Aims of a Qualifying Exam proposal must be initially formulated by the student. The mentor and other faculty, students and postdocs may discuss the proposal's aims and experimental design with the student. However, the student must be the sole author of the proposal. The student may discuss the written document and receive feedback, but the editing, correction and/or revision of the proposal must be done by the student alone.
2. The student may not submit a Qualifying Exam proposal that has already been submitted as an external fellowship or grant application by the student or anyone else.
3. Students are encouraged, but not required, to include preliminary data in their proposal. They may include preliminary data from other members of their lab, but this must be acknowledged in both the written proposal (via the Contributions Statement; [Appendix B](#)) and the oral presentation.
4. The members of the Examination Committee play no part in the preparation or practicing of the student's oral presentation. The student must be the sole author of their presentation slides. They may practice their planned presentation and receive feedback from other students, postdocs, the mentor or other faculty. However, the editing, correction and/or revision of the slides must be done by the student alone.

E: THE QUALIFYING EXAM COMMITTEE

1. The Examination Committee shall consist of a Qualifying Examination Chair, two members of the TAC and two members of the program's faculty. If the TAC has not been appointed prior to the examination, the QE Chair(s) shall select two program members with expertise in the field of the proposal in place of the TAC members. All members of the Qualifying Examination Committee are voting members. The student's Major Advisor must attend the examination, but serves solely as a silent observer.
2. The Program Executive Committee of each graduate program selects up to 4 individuals to serve as the chairs of all QEs conducted by the program in a given year. The Chairs can be Reporting Committee members or other senior members of the program's faculty. The Qualifying Examination Chairs shall recommend the examination date and select the 4 remaining members of the Examination Committee. Once an exam date and Examination Committee has been determined, the student must submit a [Qualifying Examination Date](#) form to GSBS.
3. The Qualifying Examination Chairs for each graduate program shall meet with program leadership or a designated exam coordinator each year, prior to the first exam for that graduate program. The purpose of the meeting is to remind all Chairs of the exam format and guidelines, to discuss the criteria that will be used to assess student performance on the examination, and to review the criteria for grading the exam (Pass / Incomplete / Fail) to ensure consistency across all Qualifying Exams.

F: CONDUCT OF THE QUALIFYING EXAM

1. The Qualifying Exam proposal must be submitted to the Chair of the Examination Committee two weeks before the scheduled exam. Proposals submitted on or before the due date will be reviewed by the Chair, and those that are complete and meet format requirements will be certified by the Chair (see [Appendix C](#), part II) to proceed to the oral exam.

Failure to submit the proposal by the due date will result in a grade of Fail for the Qualifying Exam, unless the Chair grants an extension of the due date based on a justified request submitted by the student prior to the deadline. Proposal submissions that are grossly incomplete also will result in a grade of Fail for the Qualifying Exam. Proposals with minor omissions or formatting deficiencies will have a one-time only period of 24 hr to make corrections before resubmitting the proposal to the Chair. At that time, the Chair will determine whether the proposal can be certified to proceed to the oral examination.

2. Prior to the exam, each member of the Examination Committee, including the Chair will write a critique of the written proposal using the [GSBS evaluation categories](#) for the written proposal:
 - a. Ability to critically evaluate research literature
 - b. Rationale and Research Question
 - c. Imagination and Originality of Thought
 - d. Research Design and Methods
 - e. Rigor & Reproducibility
 - f. Writing Skills

Each member will score each category from 1 - 4 (1=unacceptable, 2=acceptable, 3= very good, 4=outstanding). The written critiques and scores must be sent to the Examination Chair no later than the day before the exam.

3. The exam cannot begin until all members of the Examination Committee and the student's mentor are present. Failure to have all members present will result in a postponement of the exam.
4. Prior to the start of the exam, the Chair will ask the student and mentor to leave the room. In executive session, the Committee will determine whether the proposal is acceptable for examination. If the proposal is acceptable, the Examination Chair will instruct the committee on the conduct of the examination and the possible outcomes to consider.

If the proposal is deemed unacceptable, the Examination Committee must determine whether the student will be awarded a grade of Incomplete or Fail, based on the severity and extent of deficiencies of the written proposal. The Committee will provide the student with written feedback, outlining strengths and weaknesses of the proposal, and in the case of a Fail grade make a recommendation on whether the student should be allowed a second opportunity to take the qualifying exam. If permitted, the Committee will set a deadline for the submission of a revised proposal, taking into account [GSBS Policy](#) (Section 9.8.1) which permits up to 6 months before a second exam due to a grade of Fail.

5. If the exam is to proceed, the student and mentor will be asked to reenter the room and the student will give a 25-30 minute presentation of their proposal. During this time, the committee should limit their questions to those that are necessary for clarification.
6. After the oral presentation, the committee members will ask questions for 60-90 minutes about the proposal, the discipline relevant to the student's research and also examine the student's basic scientific knowledge. The Examination Committee Chair will coordinate the process to allow all committee members to examine the student.
7. The student's mentor will be a silent observer during the exam. The mentor may provide clarification during the exam only if invited to do so by the Chair of the Examination Committee.

G: RESULTS OF THE QUALIFYING EXAM

1. After the oral exam has ended, the committee will ask the student and mentor to step out of the room to discuss the student's performance. They will evaluate the student's performance based on the rubrics provided within the GSBS [Qualifying Examination Result](#) form.
2. The possible outcomes of the exam are Pass, Fail or Incomplete. This will be decided by a simple majority of the Examination Committee, determining first if the exam resulted in a grade of Fail, and if not, a second determination of whether the grade should be a Pass or Incomplete. In the case of a Pass, the Qualifying Examination Result form must be submitted to GSBS within 24 hr of the exam.

The written critiques of the proposal will be emailed to the student and mentor by the Exam Chair within 48 hr of the conclusion of the exam.

3. An Incomplete is used when the Examination Committee determines that the student's proposal, background knowledge or oral exam performance is inadequate in defined areas and that additional requirements must be completed to remedy the deficiency. Within 48 hr of the exam, the Chair will provide to the student, mentor and program director the written critiques of the Examination Committee members as well as a summary of the oral exam. Requirements for satisfying the Incomplete must be specified in writing and attached to the Qualifying Examination Result form, including a date by which the additional requirements must be completed. Such additional requirement may include, but are not limited to, re-writing parts of the proposal, writing an essay on a specified subject, taking a course, and/or additional oral examination. After the requirements stipulated by the Examination Committee have been satisfied, the student will receive a Pass. If the requirements to remediate an incomplete are not completed satisfactorily, the student will receive a Fail. There is no option for a second grade of Incomplete.
4. A Fail is awarded if the student's performance on the Qualifying Exam is unsatisfactory, either at the initial examination or when an incomplete is resolved with a grade of Fail. Within 48 hr of receiving the grade of Fail, the Examination Chair will provide to the student, mentor and program director the written critiques of the Committee members as well as a summary of the oral exam. The rationale for the Fail grade, suggestions for improvements and a recommendation for whether a second qualifying exam will be permitted must be specified in writing and attached to the Qualifying Examination Result form. If permitted to attempt a second qualifying exam, the student will have up to 6 months before the next examination.

Failure of the Qualifying Exam is reported to the Promotions Committee and the student will be placed on Academic Probation. A student who fails their initial Qualifying Exam may be recommended for dismissal to the Dean by the student's graduate program and/or the Promotions Committee. A second Qualifying Exam may be taken only if recommended by the student's Program, per GSBS Policy, Section 9.8.1. Any student who fails two qualifying exams will be recommended for dismissal to the Dean.

Appendix A

Grant Writing/QE Preparation Courses

| Program | Course Title | Catalog # | Year, Term |
|---------|--|--------------------------|----------------|
| CCB | NRSA Grant Writing & Project Development | TBD | Year 2, T1 & 2 |
| CPSB | Thinking Like a Scientist – 3 Thinking Like a Scientist - 4 | GS-CP-6203 GS-CP-6204 | Year 1, T3 & 4 |
| DDMT | Effectively Writing and Reviewing Proposals | GS-DD-5101 | Year 2, T2 |
| GG | Fundamentals of Effective Grant Writing | GS-IY-6303 | Year 1, T4 |
| IY | Fundamentals of Effective Grant Writing | GS-IY-6303 | Year 1, T4 |
| NE | Preparing for Your Neuroscience Qualifying Exam | GS-NE-5101 | Year 2, T2 |
| QCB | QCB Research Design | GS-QC-5301 | Year 1, T4 |

Appendix B

Contributions Statement

The student should document their contributions to the design and preliminary data of the QE proposal. In addition, the names and contributions of individuals assisting the student with the preparation of the proposal. See examples in the table below.

| Contributor | Nature of Contribution |
|-------------------------------------|--|
| Student name | Conceived and wrote Aim 1 |
| Charlie Brown (graduate student) | Provided Figure 2 as preliminary data. Read draft proposal and provided critique. |
| Fred Flintstone (mentor) | Discussed Aim 1 after student wrote the aim; Discussed Aims 2 & 3 with student before the research plan was written. |
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Appendix C

Qualifying Exam Certification

Part I

Student and Mentor certify that:

- The student formulated the initial Specific Aims for this proposal.
- This proposal has not been submitted as a fellowship or grant application, either by the student or anyone else.
- The student is the sole author of this proposal
- The proposal is formatted according to NIH rules
- The proposal contains Specific Aims (1 page), a Research Plan (6 pages), References (pages as needed) and an NIH-style Biosketch (5 pages).
- The student has attached a Contributions Statement indicating their contributions to the design and preliminary data of the proposal. They have included the names and contribution of individuals assisting them with the preparation of the proposal
- The student has acknowledged the source of any preliminary data in the proposal that was not generated by them.

Exam Date: _____

Date Proposal Submitted: _____

Student Name (Print and sign)

(Date)

Mentor Name (Print and sign)

(Date)

Part II

QE Proposal Receipt & Approval to Proceed with Oral Examination

Exam Committee Chair certifies that:

- The complete Exam Proposal has been received by the Exam Committee at least 2 weeks before the date of the Exam.
- The proposal is complete and meets the required format guidelines for the Qualifying Exam.

Exam Chair Name (Print and sign)

(Date)

Return Completed Form to Graduate Program Administrator