

Qualifying Examination (QE) Guidelines

The Qualifying Exam (QE) should take place at or around the end of the spring quarter of the second academic year in graduate school to the end of the summer following that quarter. Extensions or modifications of this plan should be discussed with the faculty advisor and should be approved by the GGIP advisory committee. Students are evaluated both based on their academic performance and the two-part oral QE. The QE is designed to determine the student's eligibility for admission to candidacy for the Ph.D. degree:

The QE is the final step prior to advancement to candidacy. The primary purpose of the QE is to validate that the student is academically qualified to conceptualize a research topic, undertake scholarly research, and successfully produce the dissertation required for a doctoral degree. The QE must evaluate the student's breadth and depth of knowledge in the field and must not focus exclusively on the proposed dissertation research.¹

The Qualifying Examination has two parts:

1. **Research Proposal** (written and oral)
2. **Subject Exam** (three subjects chosen by the student and their mentor)

Research Proposal

The format of this portion of the examination is a combination of a 4-to-5-page research proposal and an oral presentation/defense of a novel research problem. There is an expectation that the student will develop a rationale leading to a logical and testable hypothesis followed by specific objectives that test the hypothesis. The proposal should be formatted as follows:

- (1) **Specific aims.** State briefly the broad, long-term objectives of the work. Then state the specific purposes of the proposed research. One-half page is recommended.
- (2) **Background and significance.** Briefly sketch the background to the proposal. Critically evaluate existing knowledge and identify the gaps that the project is intended to fill. State concisely the importance of the proposed research by relating the specific aims to the broad, long-term objectives. One page is recommended.
- (3) **Preliminary studies** - dissertation research only. Describe the work you have already accomplished that is relevant to the proposal. A maximum of one page is recommended but it could be less. The preliminary data may have been collected by you or a previous member of the lab.
- (4) **Research design and methods.** Outline the experimental design and the procedures to be used to accomplish the specific aims. Include how data will be collected, analyzed, and interpreted. Describe any new methodology and its advantage over existing methodologies. Discuss the potential difficulties and limitations of the proposed procedures along with alternative approaches to achieve the aims. Provide a tentative timeline for completing each aim. Although no specific number of pages is recommended for this section, the total for sections 1-4 should not exceed 5 pages.
- (5) **References.** Each citation must include the names of all authors, the title of the article, the name of the book or journal, volume number, page numbers, and year of publication.

¹ Doctoral Qualifying Examinations, UC Davis Graduate Council Policy GC2005- 02 (rev. 13), [GC2005-02](#)

- (6) Any **figures and figure legends** provided will have to be attached at the end of the document and are not part of the 5 pages listed.

This proposal should be reviewed by the QE committee before the qualifying examination. The proposal should be developed by the student along with mentorship from their major professor, ideally with input from the QE committee members. This portion of the examination is designed to assess the creativity and rationality of research design. The significance, feasibility, and relationship of the proposal with the research literature will be important criteria for evaluation. As it is written, the proposal usually becomes the foundation for the actual thesis project, but its exact relationship with the eventual thesis is not set in stone. The purpose is to defend a hypothesis-driven project in both written and oral form.

Subject Exam

With the help of their mentor(s), the student should choose three subject areas of special focus (e.g. musculoskeletal system, immunology, microbiology, genetics, parasitology, etc.) The purpose of this portion of the exam is to assess the adequacy and depth of the student's core training, rather than specialized scholarship, to facilitate clearly establishing if the candidate possesses sufficient breadth and depth of knowledge in molecular, cellular, and systems biology to pursue independent, doctoral research

Selection of QE Committee

In consultation with their major professor, the student should choose a QE committee whose research interests and expertise complement the proposed research project. *Per* UC Davis Graduate Council policy [GC2005-02](#), an essential characteristic of the QE is:

(II.4) Be broadly structured. Based on the student's **past academic, research, and scholarly record** and **performance on the examination**, the student must broadly demonstrate sufficient competence in the selected disciplinary area, which must go beyond the limited area of scholarship associated with a dissertation topic. Further, the student must demonstrate the capability for integration and utilization of knowledge and skills that are critical for independent and creative research, thereby qualifying them for advancement to the research-intensive phase of doctoral education. ²

(III) While the form and content of QEs differ across programs, Graduate Council emphasizes that the composition of a QE committee must prioritize membership that can evaluate the academic readiness of the student to conceptualize a research topic, undertake scholarly research, and successfully produce the dissertation required to earn a doctoral degree at UC Davis. QE committee members must be able to assess both breadth and depth of knowledge during the examination. Care should be exercised by programs and students when constituting QE committees to minimize conflicts of interest and promote equitable evaluation. ³

The QE committee is comprised of a minimum of 4 faculty members, though a 5th member can also be included if deemed necessary. The student (and their major professor) will choose 8 possible faculty in the following categories – 2 who can be chosen as Chair, and 2 each in each of the three subjects chosen by the student and the mentor.

² Doctoral Qualifying Examinations, UC Davis Graduate Council Policy GC2005- 02 (rev. 13), [GC2005-02](#)

³ Doctoral Qualifying Examinations, UC Davis Graduate Council Policy GC2005- 02 (rev. 13), [GC2005-02](#)

QE committee composition must follow Graduate Council policies [GC2005-02](#) and [GC1998-01](#), and GGIP [degree requirements](#).

Category	Faculty suggested by student	Final selection
Chair		
Subject 1(name subject)		
Subject 2 (name subject)		
Subject 3 (name subject)		

The above names will be sent to the GGIP coordinator by November 1 of the second academic year in graduate school; students will be notified by early January of the second academic year of their QE committee. The GGIP coordinator will forward the names to the advisory committee who will finalize the names of the QE members.

While every effort will be made to accommodate the request of the students, the advisory committee will reserve the right to substitute the names of the proposed committee members, especially if they are being proposed by multiple students. Care will be taken to ensure that unless dire circumstances are presented, no GGIP faculty should have to serve on more than one committee per year.

Students should *not* approach the faculty members they are proposing as committee members before submission to the advisory committee; once a QE committee is formed, students should approach the approved faculty members to begin QE preparation.

- At least 3 QE members shall be GGIP faculty.
- The Chair of the QE Committee shall be a member of GGIP.
- If the student is a member of a Designated Emphasis ([DE](#)), a DE member must also be included on the committee.
- One member *may* be a non-Senate faculty, a faculty member from a different university, or a scholar from outside academia. However, there are restrictions on eligibility as well as additional paperwork required for such outside members. Students should contact the graduate program coordinator to discuss details and determine eligibility.
- A QE application must be submitted to and approved by Graduate Studies no later than four weeks before the proposed exam date. The application will be submitted online using [GradSphere](#).
- A signed QE Major Professor Statement must be submitted to the Graduate Coordinator at the time the QE committee is proposed. The statement is at the end of this document.
- The earliest possible date for the QE is the beginning of Spring quarter of the candidate's second academic year.

The QE chairperson is charged with overseeing all aspects of the QE and should take an active role in helping to prepare the candidate for the exam. The student and chair should come to an early agreement on the structure of the QE: how much time will be allotted for the candidate's

initial presentation of their research plan? Will the Research and Subject portions of the QE be separated or intermixed? These decisions should be communicated to the QE committee by the Chair before the start of the exam.

Ideally, the QE exam should adhere to the following format:

- The student reserves the right to write on the board, before the start of the exam, the title of the proposal, the central hypothesis, the aims, and any basic schematic that would help in the understanding of the research that is to be undertaken.
- Usually, the student is allowed to speak uninterrupted for the first 15 minutes, during which s/he can describe the basics of the research proposal.
- In the next hour or so, the QE members are expected to ask any questions related to the research project.
- It is recommended that the student be given a break followed by additional questions in the three subject areas.
- Exams are approximately 2-3 hours in length.
- The earliest possible date for the QE is the beginning of Spring quarter of the candidate's second academic year.

The QE committee is comprised of faculty members who have an interest in mentoring and should be willing to meet at least once, or preferably, more times with the student prior to the examination.

Pathology Requirement for GGIP Qualifying Exam

Pathology is a unifying research focus within the Graduate Group in Integrative Pathobiology (GGIP). As such, there is an expectation that the IP QE will include a pathology component. "Pathology" in the context of the QE should not be limited to "General Pathology" but should reflect the graduate student's individual research project. Although pathology should be addressed during the examination, there is **no requirement** for including an American College of Veterinary Pathology diplomate on the QE panel. The GGIP advisors strive to assemble a panel of research experts from the GGIP faculty that are most able to explore and provide constructive criticism on the student's individual proposal.

Advancement to Candidacy

Candidacy is achieved after successful completion of the Qualifying Exam *but is not automatic*. The student must complete the Candidacy – Plan B form via [GradSphere](#). The candidacy form requires the nomination of the 3-member Dissertation Committee. Dissertation Committee composition must follow Grad Council policy [GC-1998-01](#) and GGIP's [degree requirements](#). Students are encouraged to submit the Candidacy form as soon as possible after successful completion of the Qualifying Exam and no later than the spring quarter of the 3rd year. Students are eligible for the next step in the GGIP compensation plan once they achieve this milestone.

Student QE Preparation & Timeline

Spring Quarter of Year 1

- ☐ Attend the QE Information Session.

Fall Quarter of Year 2

- ☐ Enroll in PMI 290 – QE Prep Course.
- ☐ Consult with your major professor regarding QE Committee composition.
- ☐ Send the proposed committee composition to the Graduate Coordinator by **November 1**.
- ☐ Return the signed Major Professor Statement to the Graduate Coordinator by **November 1**.

January 1st of Year 2

- ☐ The advisory committee, composed of GGIP academic advisors, approves QE members or makes recommended substitutions *by* January 1.
- ☐ The Graduate Coordinator will provide the GGIP QE exam guidelines to each student's committee, along with the time frame for which the exam should be scheduled.

After QE Committee is Approved Internally

- ☐ Contact each committee member to confirm their willingness to serve.
- ☐ Schedule the exam (the Graduate Coordinator can assist in reserving rooms)
- ☐ Complete the official Graduate Studies **QE Application** (via [GradSphere](#))

The Office of Graduate Studies requires all applications be submitted **at least 30 days before the proposed exam date.**

Student “To-Dos” Leading Up to QE

8-12 weeks Before the Exam	<input type="checkbox"/> Hold an initial meeting with your QE Chair to discuss QE format, expectations, and subject areas.
	<input type="checkbox"/> Meet with other QE faculty members to discuss general expectations and which topics they will be covering.
	<input type="checkbox"/> Set up a Practice QE .
5-6 weeks Before the Exam	<input type="checkbox"/> Send an initial proposal to QE Chair for discussion. <input type="checkbox"/> Submit your QE Application via GradSphere 30 days prior
3-5 weeks Before the Exam	<input type="checkbox"/> Send a revised proposal to all QE members.
2-4 weeks Before the Exam	<input type="checkbox"/> As necessary, hold follow-up meetings with QE Chair and other committee members.
1 week Before the Exam	<input type="checkbox"/> Send a friendly reminder to all committee members (date, day, time, and location).
1 night Before the Exam	<input type="checkbox"/> Send a friendly reminder to all committee members (date, day, time, and location).

Major Professor Guidelines for Student's QE Preparedness:

1. Coursework completed with minimum required scholarship.
 2. Development of the project hypothesis (hypotheses), specific aims, and experimental approach, including analytic methods.
 3. Successful practice of oral presentation and defense of ideas to an audience of other scientists (faculty and peers).
 4. Adequate exploration of alternative methods and a solid understanding of appropriate analytical methods for their area of research.
 5. If the student is not prepared to take the exam on the proposed date, I will make sure that the student (or myself) contacts the graduate program coordinator and the QE Chair.
 6. I understand that a lack of research results is not a reason to postpone an exam date.
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**Major Professor Statement for the QE
Graduate Group in Integrative Pathobiology**

I acknowledge that my graduate student, _____, will be adequately prepared to take the Qualifying Exam (QE) in Integrative Pathobiology within 3 months of their proposed exam date. This student will be given appropriate mentoring and the opportunity to develop their aims and has or will be allowed to practice his/her presentation and study for the general knowledge portion of the exam.

Major Professor Signature _____ **Date** _____