

Graduate Group in Integrative Pathobiology (GGIP): Application for the Qualifying Examination (QE)

The QE should take place at or around the end of 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 on the basis of 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 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 4-5 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 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 the means by which 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, title of the article, name of the book or journal, volume number, page numbers and year of publication.
- (6) Any **figures and figure legends** provided will have to be attached at the end of the document and is not part of the 5 pages listed.

This proposal should be reviewed by the QE committee prior to 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 creativity and rationality of research design. The significance, feasibility, and the relationship of the proposal with research literature will be important criteria for evaluation. The proposal, as it is written, 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. general pathology, systemic pathology, immunology, immunopathology, microbiology, virology, genetics, parasitology etc.) The purpose of this portion of the exam is to assess the adequacy and depth of the student's core training - does the candidate possess 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. 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.

QE committee composition must be in accordance with 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 October 1 of the second academic year in graduate school. 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. Once your committee is approved internally, you can approach the committee members to see if they are willing to serve.

- The majority of QE members shall be GGIP faculty. (If you have a four-person committee, three members must be from GGIP).
- 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.
- If at all possible, at least two of the committee members should become members of the student's dissertation committee.
- A QE application must be submitted to and approved by Graduate Studies no later than 30 days prior to the proposed exam date. The application is [online](#).

- A signed QE Major Professor Statement must be submitted to Erin Kent at the time the QE committee is proposed. The statement is at the end of this document.

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 prior to 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, prior to 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 in the research that is to be undertaken.
- Usually, the student is allowed to speak uninterrupted for the first 15 minutes, during which s/he/they can describe the basics of the research proposal.
- In the next hour or so, the QE members are expected to ask any questions they feel like, 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 student should choose a QE committee comprised of faculty members who have an interest in mentoring and who are willing to meet at least once, or preferably, more times with the student prior to the examination. This pre-QE mentorship is in the direct interest of the student and should help guide and improve the proposed research and increase the likelihood of a successful outcome. Such meetings also facilitate the shaping of the subject exam portion of the QE.

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 diplomat on the QE panel. GGIP graduate students should strive to assemble a panel of research experts from the GGIP faculty 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](#), including payment of the \$90 fee and obtain signatures from the academic advisor, major professor, and program coordinator. The candidacy form requires nomination of the 3-member Dissertation Committee. Dissertation Committee composition must be in accordance with 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 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 and Timeline

Participate in the QE prep seminar, hosted by the GGIP SEC, spring quarter of year 1.

Enroll in PMI 290 – QE Prep Course fall quarter of year 2

Consult with major professor regarding QE Committee composition the summer between year 1 and 2. Proposed committee composition should be sent to the GGIP coordinator (eckent@ucdavis.edu) by October 1.

Return signed Major Professor Statement to GGIP coordinator (eckent@ucdavis.edu) by October 1.

Advisory committee, composed of GGIP academic advisors, approves QE members or makes recommended substitutions by December 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 a QE committee is approved internally, the student must ensure the following steps are taken:

1. Contact each committee member to confirm willingness to serve
2. Complete/submit the official Graduate Studies QE form ([GS-319](#)) to eckent@ucdavis.edu. This form MUST be submitted no later than 30 days prior to the proposed exam date.
3. Student should begin scheduling the exam. The Graduate Coordinator can assist in reserving rooms if the exam is to be held on the SVM campus.

8-12 weeks before the exam date

Student should hold an initial meeting with the QE Chair to discuss QE format, expectations, and subject areas. Student should also meet with other QE faculty members to discuss general expectations and which topics s/he will be covering.

5-6 weeks before exam date

Student should send initial proposal to QE Chair for discussion.

3-5 weeks before exam date

Student should send revised proposal to all QE members

2-4 weeks before exam date

As necessary, student should hold follow-up meeting(s) with QE Chair and other committee members.

1 week before the exam date

Student should send friendly reminder to all committee members (date, day, time, and location).

1 night before the exam

Student should send friendly reminder to all committee members (date, day, time, and location).

Major Professor Statement for the QE

Integrative Pathobiology Graduate Group

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

Major Professor Signature

Date

Guidelines for 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 solid understanding of appropriate analytical methods for their area of research.

In the event that 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.

I understand that lack of research results is not a reason to postpone an exam date.