

Graduate Group in Epidemiology

Qualifying Exam (QE): Tips for Success

The Goals of this Document

Serve as an additional resource to support the preparation of students, QE chairs, and members for the examination process in the Graduate Group of Epidemiology (GGE) by providing guidance and example templates. Official and more in-depth information on the topics outlined can be found in the resources that are provided in this document.

Purpose of a Qualifying Exam (QE)

One of the primary purposes of the exam is for the Ph.D. student to demonstrate that he or she is prepared to advance to candidacy, undertake independent research, and begin the dissertation. The QE Exam Committee members are tasked with providing a decision to the Graduate College about whether the student should be advanced to candidacy, taking account of the student's preparation and potential for doctoral study, which includes:

1. Academic preparation in the field, and sufficient understanding of the areas related to dissertation research.
2. Ability to synthesize and apply relevant GGE course material to dissertation research.
3. Knowledge and understanding of the literature in the field, and the ability to evaluate and integrate those concepts.
4. Knowledge and understanding of relevant research methods and applications.
5. The viability and originality of the research proposal, and the student's understanding of the proposal.

The QE Committee is not asked to make a formal determination of the significance and originality of the proposed research. However, many students find it beneficial to get feedback from committee members on the proposed research, including advice about the appropriate scope for the project and ways to improve the feasibility and/or the impact of the research. The QE is a critical foundational step that will help ensure the student is prepared to continue to pursue the formal research phase of the Ph.D. program.

Knowledge and Skills to be Assessed

A full and extensive knowledge expectation for knowledge for the QE exam is outlined in the GGE guidelines under the section “Study Topics for Ph.D. Prequalifying Written Examination”. Although these are under “prequalifying”, the QE evaluates the student’s ability to integrate and utilize the knowledge and skills critical for independent and creative research and analysis, and the QE exam can be viewed as a practical demonstration of knowledge use in research. Furthermore, the QE in the GGE program has specific core subjects that will be evaluated, which include:

1. Basic epidemiology
2. Advanced epidemiology, particularly as it relates to the proposed thesis research
3. Basic understanding of statistical concepts in general and as related to the research proposal
4. A field of the specialized topic selected by the student, that pertained to their research proposal
5. Specialized subject matter knowledge about a proposed research topic that may contain elements related to the subject matter, such as specifics of a disease etiology as necessary

The QE will evaluate if the student is capable of critical and independent thinking, and the student’s ability to utilize knowledge learned in scenarios that go beyond the research proposal, and this includes the expectations that may include the next steps for the proposed project, or how to address pitfalls or limitations of the current project (e.g., if unlimited funding or time was available, how would various limitations be addressed).

With this information in mind, the content of examination questions or material used by an individual committee member to assess student abilities is determined by the individual member. Academic freedom dictates that the content of questions or examination material of individual faculty members is not subject to debate by the QE committee.

Preparing for the QE

The GGE Guideline has information on the basic requisites, eligibility, timeline, and expectations for preparing for the QE exam, and students should carefully read and be aware of them upon starting the Ph.D. program. Shortly, students must pass the prequalifying written exam before taking the QE, which is typically taken by the ninth quarter of the student’s enrollment. Students should pass the qualifying examination and file for advancement to candidacy within 2 quarters of becoming eligible to take the examination, within 2 years of entering the program for

students with a prior related degree, and within 3 years of entering the program for students without a prior related degree.

Once each quarter, the graduate advisors will nominate qualifying committees for those students who will become eligible to take the QE by the end of that quarter. The date of the examination will be determined by the student and the committee chair. It is **the responsibility of the student** to arrange the date and time of the examination with all committee members. The examination should be scheduled **at least 3 months** from the time committee nominations are submitted to Graduate Studies. Note that some faculty are on 9-month appointments and may not be available during the summer. Therefore, a recommendation is that the student meets with the QE chair within two weeks from the appointment and that the QE exam be scheduled as soon as possible after this meeting.

The student is responsible for meeting with each nominated QE committee member at least twice before the scheduled examination. The aim of these meetings is for the student to understand the committee member's expectations for performance on the QE, identify relevant material and approaches for preparation, and familiarize the faculty with the student's proposed research. A suggestion is that the student provides a short if not the full outline of the research proposal to a QE committee member before these meetings and use the meeting as an opportunity to receive targeted feedback on the proposal, which can then be adjusted before delivering a final pre-QE draft of the proposal to the QE committee members. Meetings with QE committee members can also be used by the student to help prepare for the QE on specific relevant areas. In coordination with the chair of the QE committee, the student is responsible for providing each QE committee member with a written project proposal **at least one week** before the scheduled examination. As already mentioned, it is suggested here that student outline and provide this document **at least one month** before to QE committee members, and request for any feedback on areas that could be addressed before submission of the final document.

The student is responsible for contacting each member of the QE committee to determine dates and times available for the QE and must notify each QE committee member of the final date, time, and location of the QE. The student is responsible for reserving a room for the QE for at least **4 hours** for the date and time; the typical time for the examination process is at least 3 hours. As for reminders, it is strongly suggested that the student send a reminder to all members of the QE committee one week before and again one day before the QE, with information on the date, time, and location of the QE.

The student is required to present a research seminar describing the proposed dissertation research topic prior to the QE. The student is responsible for scheduling, in conjunction with the QE committee members, the required GGE seminar on her/his proposed research, which must occur before the QE. The seminar **must be attended by all QE members** and must be

advertised at least two weeks prior to the seminar by e-mail to the entire GGE. It is suggested that the seminar be recorded, and access offered to the QE members following the seminar.

QE Chair and Examination Committee Members

The primary responsibilities of the Chair of the QE are to facilitate the workflow of the committee and to ensure that the examination is conducted fairly. It is the responsibility of all members of the QE committee to provide an examination that addresses both breadth and depth of knowledge to the extent that is necessary for QE members to make a determination of the student's preparation for undertaking doctoral research as a doctoral candidate. The Examination Committee shall consist of 5-6 members, including the Chair. The members will be assigned an area of expertise they will focus on during the examination before the examination.

QE Timeline

Begin the QE application process at least 6 months before the desired date for the QE proposal presentation. Shortly after the QE committee receives the notification of its nomination, the QE committee chair, in consultation with the graduate advisor and the QE committee, should determine if the examination should proceed, as judged by a review of the student's transcripts, to verify that all requirements have been met, to assess performance in required core and elective courses and in the research proposal seminar, and to assess preparation for her/his Area of Interest and specialized topic. Copies of the student's transcripts and the approved course plan, which indicates all the courses taken to fulfill the Area of Interest and specialized topic, will be provided at the time of notification of nomination by the graduate advisor. If upon appointment, the QE committee Chair has not received it, a suggestion is that the Chair contact the graduate advisor as soon as possible for the transcript, and to forward the transcript to the rest of the QE exam members for feedback, providing a deadline for answers by members, given that this is a critical time-sensitive step for the QE process.

Although the guidance committee, major professor, graduate advisor, and committee of graduate advisors all are responsible for assessing whether the student is prepared to take the QE, the QE committee assumes the final responsibility in determining whether the examination should proceed. The committee, or a committee member communicating through the chair, however, may determine at any time **before the scheduled QE** that the student is not prepared to take the QE and that the QE should not proceed as scheduled.

If it is determined that the QE should proceed, the QE committee will determine, by majority vote, the specific format of the exam. The format should consider whether, in addition to

the oral component, the examination will include a written component from one or more committee members, the specific format for any written component, and whether or not the student should present an overview of the proposed research, the duration of any such presentation, the format for oral questioning, and scheduled breaks in the examination. A suggestion is that the chair send the QE committee members a proposed outline for the QE exam (an example is presented under “QE format” in this document), and give QE committee members a deadline to answer to the proposed format.

Students should be **given at least 2 months to complete any official written component** of the QE, which should be handed back to the QE committee at least 2 weeks before the scheduled date of the QE. Written questions may also be given for **retakes of certain portions of the exam** on which the student’s performance was not adequate (any written component is considered part of this administration of the QE). The QE committee is responsible for ensuring that the anticipated effort to be put forth by the student in completing the examination is fair and reasonable.

All members of the QE committee must meet formally as a group with the student to administer the QE, clarify any written responses to questions administered before the scheduled QE, and assess the student’s overall performance on the examination. **All committee members are required to attend** (as required by the Academic Senate) and should actively participate during the entire scheduled QE of the student. **The QE should not be allowed to proceed if all members will not or cannot be present during the entire scheduled examination.** With this in mind, the exam cannot start until any late-arriving QE committee member is present and should stop or be paused for a break if a member must leave, even for a short time, for any reason.

QE Format

As outlined in the UC Davis graduate council policy, the QE exam must be an interactive group activity with a flexible and broad structure. Below is an example template of a brief 9 steps QE exam structure:

1. Ph.D. student will introduce his or her self and explain briefly their professional experience and goals (~2 min)

2. Ph.D. student will step out of the room to allow committee members to review the student’s transcript and to discuss the order of questioning (~ 5 to 10 min). The QE Chair will be responsible for reminding examination members that the examination must conform to the approved format and general norms of the program and that the examination addresses both breadth and depth of knowledge. The QE committee members will determine and agree upon a format for the ordering and number of rounds of questioning, which will be presented by the QE Chair to the student after the study is recalled back to the room.

3. **Ph.D. student** will give a 10-15 min short summary of their research proposed using slides and/or whiteboard.

4. Except for questions seeking to clarify the short summary presentation, interruptions from examiners will be asked to only occur after 10 to 15 min into that presentation.

5. The agreed-upon format for questioning by the QE committee will be followed (e.g., a round of questions where QE members will be given ~25-35 minutes, or brief rounds of 10 minutes by each member, or questions separated by chapter or any other preferred structure).

6. Typically, there is a 5 to 10-minute break at some time during the first round of questions

7. A second round of questions may serve to address any final points by QE members (~15-25 minutes total)

8. After questioning is completed, the **Ph.D. student** will step out of the room and the committee will deliberate.

9. The **Ph.D. student** will be invited back to the room once the deliberation is complete, and the QE Chair will inform the student of the result at the conclusion of the exam and file the committee report with Graduate Studies within 72 hours.

Advice About the QE

It commonly happens in the process of examiners assessing a student's knowledge about a particular concept or field that a question is posed that the student is not able to address with confidence. This occurs even in exams when students are performing well, as an examiner may have already established that the student is satisfactorily prepared with respect to a particular concept but the examiner may be interested in assessing the limits of the student's knowledge. So, keep that in mind: it's not necessarily the case that you're doing poorly on the exam, even if you feel that some of your responses could have been stronger!

It's not uncommon for a student in a QE to be asked a question to which he or she may not know the answer. If this happens to you, that's ok! Answer any parts of the question that you do know. For other parts, do the best you can. That may include comparing the question to something that you do know (e.g. "I don't know what the risk factors are in males, but in females some common risk factors are ..."), or explaining how you would answer the question (e.g. "Well, to find that out I would need to measure outcome X and exposure Y, and I'd want to collect data on factors A, B, and C which could be confounders"), or explaining the considerations that make the question difficult to answer (e.g. the reasons why it's difficult to pick the best method to use given that there are competing alternatives where each has compelling strengths and weaknesses).

When you're asked a question, you do not need to answer right away. It's ok to take some time to think before you speak. Just let the examiners know (e.g., "Let me take a moment to pull my thoughts together").

Make sure you understand the question. It's ok to ask an examiner to repeat the question, for the examinee to confirm his or her understanding of the question (e.g., "I think you're asking me how this disease is typically treated – is that correct?"), or for the examinee to ask the examiner to re-phrase the question.

Sometimes, using a whiteboard or writing things down can help organize your thoughts and/or help you better present information to your examiners. It can also help you slow down and process information.

An oral examination is a very different experience than most of the examinations you have experienced during your education. Doing practice/mock oral exams is highly recommended to get comfortable with the process. Ideally, find people in your graduate group/program who have already been through the oral exam, and ask them to administer the practice/mock exam. Practice using a whiteboard for some of your responses.

ADDITIONAL RESOURCES

1. UC Davis Graduate Council Policy GC2005 – 02 (rev. 07) Doctoral Qualifying Examinations - https://agchem.ucdavis.edu/wp-content/uploads/sites/415/2018/02/gc2005-02_rev_07_QE_Policy.pdf

2. UC Davis Graduate Studies: Acing Your Qualifying Examination - <https://gradstudies.sf.ucdavis.edu/acing-your-qualifying-examination>

3. UC Davis Graduate Group in Epidemiology Guidelines
https://www.epi.ucdavis.edu/sites/g/files/dgvnsk5081/files/inline-files/Epidemiology%20Degree%20Requirements_May%2023%202022.pdf