

Infectious Diseases and Immunity PhD Program Qualifying Exam (QE)

Description, Rules and Student Guide

Fall 2015

Eligibility

Student should take the qualifying examination (QE) no later than the second year (4th semester) of graduate study, and only after all course requirements have been completed with a minimum grade-point average of at least 3.0 (4-point scale), excluding lower-division courses, seminars and research.

Purpose

The qualifying exam (QE) is a combination of two written research proposals, oral defense of the proposals and oral exam of general knowledge and in the subject area fields before a faculty committee. The purpose is to assess the student's knowledge of his or her field and intellectual readiness to undertake their dissertation research. This includes general background knowledge in core biological disciplines including infectious diseases, critical reasoning, clarity of thinking, and verbal and written presentation skills.

The QE is specifically designed to ensure that (1) within their immediate dissertation area, students have in depth knowledge of the fields, can design effective experiments and interpret the data and results; can propose research in a written grant format; and can reason scientifically at a high level and defend their ideas orally with clarity, and, (2) within closely related research areas that are complementary to their dissertation area, students have a strong knowledge of important concepts and methodology.

Typical QE Format

Part I: Proposals

The student will develop two proposals that are conceptually and experimentally independent. Each will have a respective Title, Abstract, Specific Aims, Background & Significance, Innovation, Experimental Plan, and References. Suggested format: 10-12 pages (excluding References), double spaced, 12-point font.

The overall research questions and approach for the Proposals should be planned in consultation with the QE Chair. Students are encouraged to consult with knowledgeable faculty for general information, literature suggestions, and advice. However, the specifics of project design and analysis, literature review, interpretation and writing must be solely the work of the student. The Proposals must be sent to the committee at least a week prior to the QE and defended orally during the exam.

Part II: Related Research Areas

The student will identify, in consultation with committee members prior to the exam, a list of three research areas that are distinct from, but related or complementary to, the dissertation research topics per listed in the QE application. These areas will be examined orally. During preparation for the exam,

faculty may suggest a few papers to begin the student's reading in these areas. It is the student's responsibility to read intensively in these areas and be prepared to demonstrate substantial knowledge of concepts and methods.

Part III: Foundations Questions in Infectious Diseases and Immunity

To test broad and specific knowledge in infectious diseases, students may be asked to answer general knowledge questions that are covered during normal coursework.

Timetable for Preparation for the Examination

Phase I (before February 1, during the second year of study)

- The Student must contact, in person, the Head Graduate Advisor.
- The student should submit to the adviser an outline for the research areas and proposition.
- Based on the areas of the research, the student, after consulting with the Head Graduate Advisor, proposes a Chair, and the student will work with the Chair to identify two inside members, and one outside faculty member to serve at the Qualifying Exam Committee. The QE Committee membership should be reviewed by the IDV office and approved by the Head Graduate Advisor.
- Once the student received the approval from the Head Graduate Advisor and consent of the QE members on their consent and availability to search in the QE Committee, the student completes the Application for Qualifying Examination form (http://www.grad.berkeley.edu/degrees/pdf/qe_application.pdf) listing the three areas for examination. The form must be brought to the Graduate Affairs Office and with a copy to IDV Office at least **4 weeks before** the actual date of the examination for the timely processing and obtained the approval from the Graduate Division. No student can take the QE without the Graduate Division approval.

Phase II (before March 1, during the second year of study)

- The student must meet with the QE Committee Chair and each committee members to present **detailed outlines** for his/her written research proposals and get feedback.
- Once the QE Committee approves the research propositions topics and outlines, the student submits the completed Proposals for the full QE Committee members to evaluate.

Phase III (before the end of Spring Semester, during the second year of study)

- Once the Proposals have been submitted and received approval from the full QE Committee, the student must schedule an exam date, book the room and inform the QE Committee members and IDV office of the exam date, time and location. IDV Office will prepare the Report and student file for the QE Chair a few days prior to the scheduled exam date.

A typical QE lasts approximately three hours. The Chair will make sure all QE Committee members sign off on the QE Report Form and return to IDV Office directly for onward submission to the Grad Division.

Exam Outcome

In case of a passing exam, the student must apply for Advancement to Candidacy (with check payment) to the Graduate Division in the same semester passed the QE exam or the latest by the following semester per Graduate Division policy. A copy of the Advancement to Candidacy must be provided to IDV Office for record.

In case of a failed exam, the student must re-take the exam before the end of the following semester if the original qualifying examination committee recommends re-examination.

Examples of Subject Areas examined in past IDI QE Examination

- Immunology*
- Immunity
- Pathogenesis
- Microbiology
- Cell Biology*
- Intracellular pathogens
- Virology*
 - Molecular Virology
 - Animal Virology

- Viral Pathogenesis
- Host-pathogen Interaction
- Vector Biology
- Arbovirus Biology & Transmission
- Virus-Host Interactions
- Computational Biology
- Infectious Diseases*
- RNA metabolism
- Bacteriology
 - Bacterial Genetics
 - Bacterial Physiology (related to growth and dormancy)
 - Bacterial pathogenesis*
- Epidemiology
 - Molecular Epidemiology
- Biochemistry*
 - Protease Biochemistry

Note: * Indicates subject areas that are frequently examined in the past IDI QE