

Infectious Diseases and Immunity

The Graduate Group in Infectious Diseases and Immunity provides an opportunity for the study of the biology of infectious agents, their interaction with human and other hosts, and their relationship with the environment. The PhD program is unique in its emphasis on integrated multidisciplinary training in host-pathogen environmental interactions. Important areas of inquiry include the biology of host-pathogen interactions, molecular and cellular aspects of pathogenesis, the ecology and evolution of disease agents, environmental factors in transmission, intermediate hosts and vectors, the biology of surveillance and epidemiological analysis, vaccine and drug development, and public health practices for disease prevention and control.

The objective of this program is to provide students with research-oriented pursuits that will train them to design and implement independent investigations. The goal is to promote health by the integration of basic research and applied technologies for the development of new approaches for the diagnosis, treatment, prevention, and control of infectious disease in humans.

Students matriculating through this program will acquire expertise in fundamental infectious disease research and thus are well prepared for careers in academia, governmental agencies, and biotechnology. For admission requirements and application process, please visit both the IDI website (<http://idi.berkeley.edu/>) and the Grad Division website (<https://grad.berkeley.edu/admissions/apply/>) for details. Application deadline: December 1st for the following year's fall semester admission.

Minimum Requirements for Admission

The following minimum requirements apply to all graduate programs and will be verified by the Graduate Division:

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A grade point average of B or better (3.0);
3. If the applicant comes from a country or political entity (e.g., Quebec) where English is not the official language, adequate proficiency in English to do graduate work, as evidenced by a TOEFL score of at least 90 on the iBT test, 570 on the paper-and-pencil test, or an IELTS Band score of at least 7 on a 9-point scale (note that individual programs may set higher levels for any of these); and
4. Sufficient undergraduate training to do graduate work in the given field.

Applicants Who Already Hold a Graduate Degree

The Graduate Council views academic degrees not as vocational training certificates, but as evidence of broad training in research methods, independent study, and articulation of learning. Therefore, applicants who already have academic graduate degrees should be able to pursue new subject matter at an advanced level without the need to enroll in a related or similar graduate program.

Programs may consider students for an additional academic master's or professional master's degree only if the additional degree is in a distinctly different field.

Applicants admitted to a doctoral program that requires a master's degree to be earned at Berkeley as a prerequisite (even though the applicant

already has a master's degree from another institution in the same or a closely allied field of study) will be permitted to undertake the second master's degree, despite the overlap in field.

The Graduate Division will admit students for a second doctoral degree only if they meet the following guidelines:

1. Applicants with doctoral degrees may be admitted for an additional doctoral degree only if that degree program is in a general area of knowledge distinctly different from the field in which they earned their original degree. For example, a physics PhD could be admitted to a doctoral degree program in music or history; however, a student with a doctoral degree in mathematics would not be permitted to add a PhD in statistics.
2. Applicants who hold the PhD degree may be admitted to a professional doctorate or professional master's degree program if there is no duplication of training involved.

Applicants may apply only to one single degree program or one concurrent degree program per admission cycle.

Required Documents for Applications

1. **Transcripts:** Applicants may upload *unofficial* transcripts with your application for the departmental initial review. *If the applicant is admitted*, then *official* transcripts of all college-level work will be required. Official transcripts must be in sealed envelopes as issued by the school(s) attended. If you have attended Berkeley, upload your unofficial transcript with your application for the departmental initial review. *If you are admitted*, an official transcript with evidence of degree conferral *will not* be required.
2. **Letters of recommendation:** Applicants may request online letters of recommendation through the online application system. Hard copies of recommendation letters must be sent directly to the program, not the Graduate Division.
3. **Evidence of English language proficiency:** All applicants from countries or political entities in which the official language is not English are required to submit official evidence of English language proficiency. This applies to applicants from Bangladesh, Burma, Nepal, India, Pakistan, Latin America, the Middle East, the People's Republic of China, Taiwan, Japan, Korea, Southeast Asia, most European countries, and Quebec (Canada). However, applicants who, at the time of application, have already completed at least one year of full-time academic course work with grades of B or better at a US university may submit an official transcript from the US university to fulfill this requirement. The following courses will not fulfill this requirement:
 - courses in English as a Second Language,
 - courses conducted in a language other than English,
 - courses that will be completed after the application is submitted, and
 - courses of a non-academic nature.

If applicants have previously been denied admission to Berkeley on the basis of their English language proficiency, they must submit new test scores that meet the current minimum from one of the standardized tests. Official TOEFL score reports must be sent directly from Educational Test Services (ETS). The institution code for Berkeley is 4833. Official IELTS score reports must be mailed directly to our office from the British Council. TOEFL and IELTS score reports are only valid for two years.

Where to Apply

Visit the Berkeley Graduate Division application page (<http://grad.berkeley.edu/admissions/apply/>).

Curriculum

Courses Required

INFECTIOUS DISEASES (2 courses):

PB HLTH 260A	Principles of Infectious Diseases	4
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Choose one of the following:

PB HLTH 260B	Principles of Infectious Diseases	4
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PB HLTH 265	Molecular Parasitology	3
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PB HLTH 262	Molecular and Cellular Basis of Bacterial Pathogenesis	3
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PB HLTH 266B	Zoonotic Diseases	2
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IMMUNOLOGY (1 course): Student should take PH 263 as far as possible and not both PH 263 and MCB 250

PB HLTH 263	Public Health Immunology [3-4] or MCELLBI Advanced Immunology
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EPIDEMIOLOGY AND BIOSTATISTICS (2 courses):

PB HLTH 145	Statistical Analysis of Continuous Outcome Data [4]
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or PB HLTH Introduction to Multivariate Statistics

PB HLTH 253B	Epidemiology and Control of Infectious Diseases [2]
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or PB HLTH 260F Molecular Epidemiology of Infectious Diseases

GRADUATE/UPPER DIVISION ELECTIVES FROM CORE LIST (2-3 courses)

RESEARCH (2 courses):

PB HLTH 293	Doctoral Seminar [1] (IDI Monday Doctoral Seminar every seminar until graduation)
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PB HLTH 293	Doctoral Seminar [2] (IDI Wednesday Doctoral Seminar for pre-QE IDI PhD students, though other IDI PhD students are welcome)
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The above are the minimum coursework requirements for graduation. Students should complete a minimum of 30 units of graduate-level courses (core required courses plus a few additional electives pertaining to the student's research interest) in addition to the Doctoral Seminars to graduate. Electives include but are not limited to: PB HLTH 260F, PB HLTH 262, PB HLTH 266A, MCELLBI 230 and MCELLBI 259J.

PB HLTH 265	Molecular Parasitology	3
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PB HLTH 266B	Zoonotic Diseases	2
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PB HLTH 262	Molecular and Cellular Basis of Bacterial Pathogenesis	3
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For a full list of IDI faculty, please visit the IDI website (<http://idi.berkeley.edu/#faculty>).