

Endocrinology

The Graduate Group in Endocrinology offers a Master of Arts (MA) and a Doctor of Philosophy degree (PhD) in Endocrinology.

The main goal of our program is to engage students in the interdisciplinary aspects of the field of Endocrinology through seminars, courses and our diverse faculty research perspectives that range from structural, molecular and cellular endocrinology through organismal and comparative endocrinology to chemical ecology. Graduates from our Endocrinology program have transitioned into careers in a variety of fields including education, research in both academic and industry settings, government regulation, and private business.

Admission to the University

Uniform minimum requirements for admission

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

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A minimum 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 570 on the paper-and-pencil test, 230 on the computer-based test, 90 on the iBT test, or an IELTS Band score of at least 7 (note that individual programs may set higher levels for any of these); and
4. Enough undergraduate training to do graduate work in the given field.

Applicants who already hold a graduate degree

The Graduate Council views academic degrees as evidence of broad research training, not as vocational training certificates; therefore, applicants who already have academic graduate degrees should be able to take up new subject matter on a serious level without undertaking a graduate program, unless the fields are completely dissimilar.

Programs may consider students for an additional academic master's or professional master's degree 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 only apply to one single degree program or one concurrent degree program per admission cycle.

Any applicant who was previously registered at Berkeley as a graduate student, no matter how briefly, must apply for readmission, not admission, even if the new application is to a different program.

Required documents for admissions applications

1. **Transcripts:** Upload unofficial transcripts with the application for the departmental initial review. Official transcripts of all college-level work will be required **if admitted**. Official transcripts must be in sealed envelopes as issued by the school(s) you have attended. Request a current transcript from every post-secondary school that you have attended, including community colleges, summer sessions, and extension programs. If you have attended Berkeley, upload unofficial transcript with the application for the departmental initial review. Official transcript with evidence of degree conferral **will not** be required if admitted.
2. **Letters of recommendation:** Applicants can 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 in which the official language is not English are required to submit official evidence of English language proficiency. This requirement 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, and most European countries. 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 U.S. university may submit an official transcript from the U.S. university to fulfill this requirement. The following courses will not fulfill this requirement: 1) courses in English as a Second Language, 2) courses conducted in a language other than English, 3) courses that will be completed after the application is submitted, and 4) 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.

Admission to the Program

Admission Deadline: January 10, 2015 (for Fall 2015 admission)

The online Graduate Application for Admission, Fellowship and Financial Aid will be available in early September on the Graduate Division's website (http://www.grad.berkeley.edu/admissions/grad_app.shtml). Be sure to allow sufficient time for your letters of recommendation and test scores to arrive by the deadline.

The following is a checklist of required documentation and information:

1. **Completion of the on-line Graduate Application for Admission, Fellowship and Financial Aid:** Read the instructions carefully and complete all pages relevant to you. Be sure to include:

- A current email address: This is the primary means of communication.
 - List faculty members you have contacted or whose research you are interested in: We strongly recommend that you initiate correspondence with faculty members whose research is of interest to you. Please refer to the Endocrinology faculty list for descriptions of faculty research interests.
 - Grade Point Average (GPA) after the first two years (international applicants do not need to calculate GPA)
 - Statement of purpose and personal history statement: Take particular care in writing your statement of purpose. It is used to evaluate your preparation and aptitude for graduate study in our department.
2. **Three letters of recommendation:** At least two letters must be from faculty familiar with your academic performance. Your recommenders will be able to submit on-line letters of recommendations. See the Graduate Division (<http://www.grad.berkeley.edu/prospective/index.shtml>) website for detailed instructions and information. We will also accept letters directly from a letter service.
 3. **Transcripts from each college and graduate institution you have attended:** You can upload unofficial transcripts for review purposes. Official transcripts will be required if admitted.
 4. **GRE scores:** Or another appropriate exam (i.e., MCAT). The subject GRE test is not required. Institution code: 4833; Department Code: 0299
 5. **Test of English as a Foreign Language (TOEFL)** for applicants from a country in which the official language is not English. Tests taken before June 2012 will not be accepted even if your score was reported to Berkeley.

For questions for inquiries contact the Graduate Student Affairs Officer.

Normative Time Requirements

Total Normative Time is 5 years

Curriculum

The following minimum requirements give the background prerequisite to candidates for the PhD degree in the field of Endocrinology.

- Completion of the requirements listed above for the MA candidates.
- Further course work selected in consultation with the major professor and graduate advisor to allow emphasis in the area(s) of the student's research interest, such as biochemistry, cell biology, immunology, molecular biology, morphology, physiology, psychobiology, tumor biology, etc.
- Two additional graduate level seminars, including advanced topics in endocrinology (INTEGBI 203 Course Not Available or IDS 203 Course Not Available) and one other seminar in endocrinology.
- The seminar will be selected after consultation with the research advisor.
- It is recommended that students enroll in the teaching colloquium INTEGBI 303 Course Not Available.
- Serve as a graduate student instructor in one or more appropriate courses. Enforcement of this requirement will depend on the availability of funding.
- Dissertation.

- Students are encouraged to give oral presentations on their research at least twice during their tenure at Berkeley in INTEGBI 248 Comparative Physiology and Endocrinology Seminar or in other appropriate courses.

In addition, the student must pass an oral qualifying examination for PhD degree candidacy. This exam should be taken by the end of the fourth semester in residence. For the exam, students will be held responsible for subjects the graduate advisor and mentor designate from the list of approved topics.

The purpose of the oral exam is to test the student's understanding of general principles in broad areas, rather than detailed knowledge of narrow fields. However, the examining committee may choose to evaluate the student's abilities to understand and solve problems or questions related to their chosen area of research. This decision will depend to some degree on the student's training and experience. When the oral exam does cover a research topic, not more than 45 minutes of the three hour exam period should be devoted to that area.

All students are required to defend the following two areas on the oral exam:

- Organismal endocrinology (either mammalian or comparative).
- Molecular and cellular endocrinology.

Two of the following list of 12 subject areas of plant and or animal biology must also be defended:

1. Anatomy
2. Biochemistry
3. Cell Biology
4. Developmental Biology
5. Ethology
6. Evolutionary Biology
7. Genetics
8. Immunology
9. Molecular Biology
10. Neurobiology
11. Physiology
12. Tumor Biology

Some other topics may also be acceptable, but approval by a majority of the guidance committee is required in such cases.

Narrow fields, such as pituitary anatomy and physiology, osmoregulation, membrane biology or regulation of gene expression are not acceptable.

Although there is no specific foreign language required of candidates, students are encouraged to be familiar and conversant with the foreign language literature in the field or fields relevant to their research interest. The mentor may require the student to take an appropriate reading examination in the foreign literature, or to examine the student in this literature as part of the PhD oral examination.

Curriculum

Master's Degree

In addition to the general requirements set forth in the Announcement of the Graduate Division for the Master's degree under Plan 1, the following

minimum requirements should be met before the student begins the masters program in Endocrinology:

- Chemistry, to include introductory inorganic, quantitative analysis, introductory organic, and introductory biochemistry.
- General physics and math through calculus.
- General biology.
- A survey course in organismal physiology.
- A survey course in cellular and molecular biology.

Students who are deficient in any of these courses will be required to take them before completion of the MA program.

The following courses are required of all MA Candidates:

- Courses in molecular and organismal endocrinology.
- One seminar course requiring student presentations (e.g. INTEGBI 248 Comparative Physiology and Endocrinology Seminar, or INTEGBI 203 Course Not Available).
- Enroll in INTEGBI 248 Comparative Physiology and Endocrinology Seminar during each semester offered.

A course in statistics is recommended.