

Endocrinology

As of Summer 2023, the Endocrinology Graduate Group has put a hold on our admissions for at least the next two years. We will not be accepting any applications in the near future.

The Endocrinology Graduate Group is a small graduate program that is not currently associated with a department on the UC Berkeley campus and is cross disciplinary in nature. The faculty involved in the group are mainly from the Nutritional Sciences Department, but we also have representatives from other biosciences departments at Berkeley (see our faculty list here (<https://nsl.berkeley.edu/graduate-programs/endo/faculty/>)). Students are directly admitted into a particular faculty lab, and graduate students focus on guided laboratory research projects to obtain their PhD. Outside of the laboratory research, students may engage in the interdisciplinary aspects of the field of endocrinology through seminars and courses in the various bioscience departments across campus (see our course requirements). Our program also has a mandatory Endocrinology Seminar where each of our graduate students present on their research progress every Spring semester. There is ample opportunity for engaging with teaching as well -- many of our graduate students serve as graduate student instructors (GSIs) for the majority, or all of the semesters they are in the program. Recent graduates from our endocrinology program predominantly enter into industry settings after obtaining their PhD, but our program has been on the Berkeley campus for many decades, and over the years, some of our alumni have transitioned into careers in a variety of fields including education, medicine, research in both academic and industry settings, and private business.

Students who plan to obtain higher degrees in Endocrinology at Berkeley will be mainly guided by their faculty mentor, who will supervise their research projects and guide them in their course selection and other aspects of program requirements. Their faculty mentor may provide funding for the lab research projects, and employment as a graduate student researcher (GSR), but funding may also come from the student's teaching positions they obtain on campus. There are also program faculty advisors and a program faculty chair that can be a resource for students who have questions or are having difficulty navigating a particular challenge while in the program. Because the program is small and Endocrinology graduate students are not all located in the same building on campus, we recommend that students endeavor to engage in the departmental activities of their faculty mentor's home department to broaden their community and opportunities on campus.

To advance to candidacy for the Ph.D., students must complete all requirements, including passage of an oral qualifying examination. All details of our program requirements can be viewed on our website. Students may also view our program by-laws and policies on our website.

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Admission to the University

We are a "direct admit" program, there are no lab rotations unless a student leaves their original lab of entry. Students enter our program already paired with a faculty mentor and immediately begin research in that lab. Because of this, it is imperative that interested individuals make a connection with the Endocrinology faculty (<http://endo.berkeley.edu/faculty/>) member they are interested in working with *before* applying.

Students are advised to ask the faculty member if they are recruiting during the year the student is applying -- not all of the Endocrinology faculty may be recruiting new students in a particular year. Please keep in mind that when admitting students, we have a very limited number of students we can take, and PhD applicants are often preferred.

Applying for Graduate Admission

Thank you for considering UC Berkeley for graduate study! UC Berkeley offers more than 120 graduate programs representing the breadth and depth of interdisciplinary scholarship. The Graduate Division hosts a complete list (<https://grad.berkeley.edu/admissions/choosing-your-program/list/>) of graduate academic programs, departments, degrees offered, and application deadlines can be found on the Graduate Division website.

Prospective students must submit an online application to be considered for admission, in addition to any supplemental materials specific to the program for which they are applying. The online application and steps to take to apply can be found on the Graduate Division website (<https://grad.berkeley.edu/admissions/steps-to-apply/>).

Admission Requirements

The minimum graduate admission requirements are:

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A satisfactory scholastic average, usually a minimum grade-point average (GPA) of 3.0 (B) on a 4.0 scale; and
3. Enough undergraduate training to do graduate work in your chosen field.

For a list of requirements to complete your graduate application, please see the Graduate Division's Admissions Requirements page (<https://grad.berkeley.edu/admissions/steps-to-apply/requirements/>). It is also important to check with the program or department of interest, as they may have additional requirements specific to their program of study and degree. Department contact information can be found here (<https://guide.berkeley.edu/archive/2024-25/graduate/degree-programs/>).

Where to apply?

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

Admission to the Program

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) and will include the current deadline to apply to the program. Be sure to allow sufficient time for your letters of recommendation and test scores to arrive by the deadline.

Checklist of Required Documentation and Information

1. **Course Requirements** -- students who are applying to the Endocrinology Graduate Program should have the following courses completed at their undergraduate institutions before beginning our program:
 - a. Chemistry, to include introductory inorganic, quantitative analysis, introductory organic, and introductory biochemistry.

- b. General physics and math through calculus.
- c. General biology.
- d. A survey course in organismal physiology.
- e. A survey course in cellular and molecular biology.

2. Completion of the online 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.

3. Three letters of recommendation. At least two letters must be from faculty familiar with your academic performance. Your recommenders will be able to submit online 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.

4. 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.

5. Test of English as a Foreign Language (TOEFL) for applicants from a country in which the official language is not English. TOEFL exams must be recent (see info about this on the Grad Div website (<https://grad.berkeley.edu/admissions/requirements/>)). Older exams will not be accepted even if your score was reported to Berkeley.

The GRE is not required, but for students that would like to include scores in their application, our Institution Code: 4833; Department Code: 0299.

If you have further questions, please the graduate student services advisor at endo@berkeley.edu.

Unit requirements to complete the PhD program:

96 units (equivalent of at least 8 semesters, full-time).

All required courses:

- Comparative Physiology and Endocrinology Seminar (<http://guide.berkeley.edu/courses/integbi/>) (1 unit) - this course has previously been listed as IB 248, but may soon be listed as NUSCTX 248. Endocrinology graduate student research presentation seminar. Must be taken in the Spring of each year enrolled.
- An upper division undergraduate course in organismal endocrinology, such as IB 137: Human Endocrinology (<http://guide.berkeley.edu/courses/integbi/>) (4 units) - Course will address the role of hormones in physiology with a focus on humans. Regulation of hormone secretion and mechanisms of hormone action will be discussed. Physiological processes to be addressed include reproduction, metabolism, water balance, growth, fetal development. Experimental and clinical aspects will be addressed. (The student's Endocrinology

faculty mentor will help provide guidance on other possible courses that can fulfill this requirement.)

- An upper division undergraduate course in cellular and molecular endocrinology such as MCB 135A: Topics in Cell and Developmental Biology: Molecular Endocrinology (<http://guide.berkeley.edu/courses/mcellbi/>) (3 units) - Molecular mechanisms by which hormones elicit specific responses and regulate gene expression; hormone-receptor interaction; synthesis, transport and targeting of hormones, growth factors and receptors. (The student's Endocrinology faculty mentor will help provide guidance on other possible courses that can fulfill this requirement.)

All elective requirements:

- There are no elective requirements for this Ph.D. as it is a direct admit, research-focused program, students will enroll most semesters in research lab units with their faculty mentors. The particular course number for the research units will depend on the home department of the faculty member.
- Further course work can be taken, with the permission of the student's Endocrinology faculty mentor, 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. -- but it is not required for the degree and most students focus on their research units in the lab.

Normative Time Requirements

Total normative time is 5 years to PhD, but some international students may choose to finish in 4 years (or else they may need to cover additional expenses of out of state tuition and fees to continue). Our average years to degree are 10 Fall/Spring semesters + 1 summer for PhD and 4 Fall/Spring semesters + 1 summer for MA.

Curriculum & Program Requirements

Beyond our required courses listed above, the Endocrinology Graduate Group is not associated with a particular department, and therefore our program does not generate its own curriculum. We rely on our faculty to create engaging courses in their home departments that we can recommend to our students. There are undergraduate courses and graduate seminars that we recommend students consider depending on their graduate activities, research interests and their faculty mentor's advising. See our website for our other recommended courses (<https://endo.berkeley.edu/requirements/>).

Main requirements for PhD:

- Survey course in organismal endocrinology (upper division undergraduate course)
- Survey course in cellular and molecular endocrinology (upper division undergraduate course)
- Endocrinology Graduate Presentation Seminar - every Spring semester that the student is enrolled
- 12 units per semester enrolled in the faculty mentor's research units course
- Present a 5 page dissertation prospectus and pass the oral qualifying exam at the end of the second year in the program
- Advance to candidacy, and once advanced, for each year enrolled, hold a Doctoral Candidacy Review (<https://grad.berkeley.edu/>)

doctoral/doctoral-advancing-to-candidacy/doctoral-candidacy-review/) with dissertation committee (and submit the DCR form via CalCentral)

- File a PhD dissertation that is at least 3 chapters of original research

See our website for more information (<https://endo.berkeley.edu/requirements/>).

Before Applying

Students who are applying to the Endocrinology PhD program should have the following courses completed at their undergraduate institutions before beginning the PhD 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.

The Endocrinology Graduate Group awards an MA degree, not an MS degree. Please see our admissions information (<https://guide.berkeley.edu/archive/2024-25/graduate/degree-programs/endocrinology/#admissionstext>). Endocrinology directly admits students into research labs. We recommend applicants connect with an Endocrinology faculty (<http://endo.berkeley.edu/faculty/>) member to see if they are considering master's degree applicants *before* applying. The program has limited admission spots and tends to prefer PhD applicants.

Unit requirements to complete the program:

48 units (equivalent of at least 4 semesters, full-time).

All required courses:

- Comparative Physiology and Endocrinology Seminar (<http://guide.berkeley.edu/courses/integbi/>) (1 unit) - this course has previously been listed as IB 248, but may soon be listed as NUSCTX 248. Endocrinology graduate student research presentation seminar. Must be taken in the Spring of each year enrolled.
- An upper division undergraduate course in organismal endocrinology, such as IB 137: Human Endocrinology (<http://guide.berkeley.edu/courses/integbi/>) (4 units) - Course will address the role of hormones in physiology with a focus on humans. Regulation of hormone secretion and mechanisms of hormone action will be discussed. Physiological processes to be addressed include reproduction, metabolism, water balance, growth, fetal development. Experimental and clinical aspects will be addressed. (The student's Endocrinology faculty mentor will help provide guidance on other possible courses that can fulfill this requirement.)
- An upper division undergraduate course in cellular and molecular endocrinology such as MCB 135A: Topics in Cell and Developmental Biology: Molecular Endocrinology (<http://guide.berkeley.edu/courses/mcellbi/>) (3 units) - Molecular mechanisms by which hormones elicit specific responses and regulate gene expression; hormone-receptor interaction; synthesis, transport and targeting of hormones, growth factors and receptors. (The student's Endocrinology faculty mentor will help provide guidance on other possible courses that can fulfill this requirement.)

All elective requirements:

- There are no elective requirements for this MA as it is a direct admit, research-focused program, students will enroll most semesters in research lab units with their faculty mentors. The particular course number for the research units will depend on the home department of the faculty member.
- Further course work can be taken, with the permission of the student's Endocrinology faculty mentor, 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. -- but it is not required for the degree and most students focus on their research units in the lab.

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Main requirements for MA:

- Survey course in organismal endocrinology (upper division undergraduate course)
- Survey course in cellular and molecular endocrinology (upper division undergraduate course)
- Endocrinology Graduate Presentation Seminar - every Spring semester that the student is enrolled
- 12 units per semester enrolled in the faculty mentor's research units course
- Either identify a Master's thesis committee and advance to candidacy to file a master's thesis OR set up a qualifying exam committee and pass the qualifying exam to use as a "capstone" master's degree project.

See our website for more information (<https://endo.berkeley.edu/requirements/>).

Before Applying

Students who are applying to the Endocrinology MA program should have the following courses completed at their undergraduate institutions before beginning the master's 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.

A course in statistics is recommended.