

**INTEGRATIVE  
BIOLOGY**

**2012-2013**

**New Graduate Student  
Handbook**

**University of California, Berkeley**

# PROGRAM AND REQUIREMENTS FOR THE Ph.D. IN INTEGRATIVE BIOLOGY

## BACKGROUND

The Department of Integrative Biology was formed in 1989 through the merger of faculty and students from the Departments of Anthropology, Botany, Genetics, Paleontology, Physiology/ Anatomy, Zoology and Human Biodynamics. The faculty's interests are diverse but they are united in the goal of educating and graduating the best biological scientists in the world. You have been chosen to be among this elite group. This handbook is designed to help you progress from student to colleague of the highly recognized men and women on the department's faculty.

## REQUIREMENTS OVERVIEW

Because of the great breadth of scientific interests represented in the Department of Integrative Biology, the only specific course required of all graduate students is an advanced course in evolutionary biology. Such a course must be taken during the graduate program if it was not completed during the student's undergraduate education. There are no total departmental unit requirements for the Ph.D. program beyond the four semesters of residency required by the Graduate Division. This means you have to be registered for a minimum of four semesters. Every student in the Ph.D. program is required to be a Graduate Student Instructor (GSI) for at least two semesters; pass an advanced evolution course; and to complete IB 303, the *Teaching Colloquium*. A student's supervisory committee may suggest courses as well. A student in the Ph.D. program must take a three hour oral Qualifying Examination (QE) on fields specified by their QE Committee. Ph.D. candidates are required to write a dissertation based on original and independent research carried out by the student.

## THE ADVISING STRUCTURE

The department has a clearly defined advising structure. Your mentor, working in consultation with your Supervisory, Qualifying Examination and Dissertation Committees, is your primary advisor on academic issues.

Your Graduate Advisor is a second important resource. Technically, Graduate Advisors are faculty members appointed to serve as deputies of the Graduate Division to ensure students are making appropriate progress toward meeting the annual goals set by the department and the Graduate Division. Their importance to you as a student is measured by how much you take advantage of their expertise and counsel on academic questions and procedures.

The Head Graduate Advisor chairs the committee of Graduate Advisors and is the department's official liaison with the Graduate Division. Acting in this capacity, the Head Graduate Advisor signs all correspondence sent by the department to the Graduate Division. This includes everything from routine petitions, such as *Advancement to Candidacy* forms, to requests for exceptions to policy. While requests may be initiated by your mentor, they will not be accepted unless accompanied by an endorsement from the Head Graduate Advisor.

Note: Occasionally, a student finds that his or her research interests take a new direction making it appropriate to shift to another laboratory group. After discussion and agreement among all parties involved, the Head Graduate Advisor can approve requests for a change to another mentor.

### **The Supervisory Committee**

At the start of your first semester you should form your Supervisory Committee. Ask your mentor for suggestions about who would be most appropriate. This Committee consists of your mentor and two other faculty members, one of whom must be from Integrative Biology. The guidelines for selecting faculty are that one should be in an area closely allied to your research interests, and the other should be from an area sufficiently removed from your interest to broaden the sweep of the research problem, but close enough to actively contribute to your program. The third member may be from Integrative Biology, but it will be to your advantage to begin working with a member of another department who could serve as the "outside" member of your Qualifying Examination and/or Dissertation Committees.

The purpose of this committee is to help you plan your program through advancement to candidacy, assuring that you are broadly educated in biology and prepared to move in unexpected directions as your career unfolds. Your committee will also advise you on specialized training. This committee may become part or all of your Dissertation Committee after you have advanced to candidacy.

### **The Qualifying Examination Committee**

By the end of the fourth semester you should have taken your Qualifying Exam. In Integrative Biology this is an oral examination lasting approximately three hours and administered by your Qualifying Examination Committee. Your mentor and your Supervisory Committee can help you select a Qualifying Examination Committee, but the choice will be largely determined by your developing interests. As you take courses in the first two or three semesters consider whether the professors teaching them

would be committee members compatible with your interests and goals.

The Qualifying Examination Committee is composed of four professors. At least two must be from Integrative Biology. One must be from another department on the Berkeley campus. It is a Graduate Division requirement that both the Chair and the outside faculty be members of the Berkeley Academic Senate. The Committee Chair moderates the exam. Your mentor may be permitted to attend the exam at the discretion of the QE chair, but must remain silent during the exam -- thus can neither be a questioning nor a voting member of the committee.

### **The Dissertation Committee**

After passing the Qualifying Examination you should immediately file for advancement to candidacy by petition to the Graduate Division. This petition asks that you list your Dissertation Committee. Normally, your mentor acts as the Chair to this committee, with one other member from the Integrative Biology faculty and a third from another department on campus. This committee will advise you on your research through the time you file your dissertation. They will read and sign your dissertation.

Under certain circumstances, a non-Senate member may be appointed to a committee if the Head Graduate Advisor determines that the individual in question offers expertise not otherwise available among the regular faculty and if the Associate Dean of the Graduate Division concurs in that judgment. Ordinarily, the potential committee member's CV is submitted with the petition for Advancement to Candidacy. This member may not serve as either the Chair or outside member of the committee. If you are unsure whether an individual qualifies as a dissertation committee member, ask your Graduate Advisor or check with the Graduate Student Affairs Officer.

Please note: Professors from other departments with a joint appointment to Integrative Biology may serve as an inside member of both the Qualifying and Dissertation Committees but *may not serve in the capacity of outside member.*

## GOALS AND TIMETABLE

### First Year Students

In the first semester, under the guidance of your mentor, you should form your Supervisory Committee. You are responsible for completing an Annual Review, which involves arranging a meeting with your Supervisory Committee to discuss your plans and progress. You should take courses that will round out any obvious holes in your academic background, and if you haven't already taken an advanced course in evolution this is a good time to complete this requirement. While your Supervisory Committee may approve another course, IB 160 will satisfy this requirement. It is a course in general evolution which includes discussions of micro- and macroevolution. Offered in the Fall semester, it has a discussion section which is primarily composed of your fellow first year students.

You should apply for National Science Foundation and Howard Hughes Medical Institute Predoctoral Fellowships and other such support as appropriate.

In addition, you will be required to enroll in IB 303, *The Teaching Colloquium* (offered Fall only). The department requires that all students participate in this course either prior to or concurrent with teaching their first semester. Because two semesters of teaching experience are a Ph.D. requirement, it is wise to fulfill this requirement early, preferably during your first year when most of your cohort will take it, and before you become heavily involved in research for your dissertation. This course fulfills the Graduate Student Instructor training

requirement mandated by the Dean of the Graduate Division.

Most first year students will also be gathering materials and filing for California residency. This is an online procedure, which is more thoroughly discussed later in this handbook.

### Second Year Students

By the end of the third semester you are required to present a preliminary research proposal to your Supervisory Committee. The proposal should state your topic, give a short overview of the relevant literature, and a summary of the procedures you plan to employ.

During the third semester you should form your Qualifying Examination Committee. This committee may include members of the Supervisory Committee with the exception of your mentor.

You are expected to take and pass your Qualifying Exam during the fourth semester. Early in the fourth semester, or sooner if possible, set a date for your Exam and begin meeting with the members of your committee. As soon as possible after passing the Qualifying Exam form your Dissertation Committee and petition for Advancement to Candidacy. Students who have advanced to candidacy are eligible for three years of 100% reduced non-resident tuition.

### Third Year Students

By the end of the fifth semester a definitive research proposal should be presented to your Dissertation Committee. Ordinarily, it is an expanded version of your preliminary proposal, giving a comprehensive plan of your intended research. During this year, you should apply for doctoral dissertation improvement grants and other kinds of support for your research.

## **Fourth and Fifth Year Students**

If you haven't already gained teaching experience by working as a Graduate Student Instructor for two semesters, you should do so now. You are expected to file your dissertation in your fifth year or soon after.

## **ADDITIONAL REQUIREMENTS**

### **Participation in Seminars**

You are encouraged to enroll in seminars in your field of specialization and present topics whenever the opportunity arises. Effective participation in seminars is a useful introduction to your field of specialization and may give you valuable direction for advanced study, particularly if you have not begun research activities.

Along with seminar courses, Integrative Biology offers weekly seminars with guest speakers. These include speakers from other institutions or departments, job candidates for faculty openings, and advanced graduate students or postdoctoral researchers. Seminars are preceded by a departmental tea. This is a chance for you to meet the guest speaker and get together with other graduate students. They are held on most Thursdays and several Mondays throughout the academic year. You are strongly encouraged to register for one or more seminars each semester.

### **The Qualifying Examination**

The objective of the Qualifying Examination is to demonstrate your general competence in your broad research area, and your ability to synthesize the factual information and training in techniques absorbed through course work and seminar research. You are expected to know appropriate facts, but mere recitation of these is insufficient. The committee must be assured that you have a firm grasp of the basic concepts and current problems in your area of competence, and that you can use facts to deal with these questions at an advanced level. In the

examination you are required to answer questions in at least three areas which you and your committee have decided upon for examination. Take your Qualifying Examination into consideration when planning your curriculum for the first three semesters. Enroll in classes or reading courses taught by members of your Qualifying Examination Committee and meet with them often prior to the exam.

The Department believes that the Qualifying Examination should measure students' breadth of knowledge soon after the beginning of their graduate studies. It is not intended to be a detailed examination of their dissertation research program. Therefore, the opening statement made by the student should be limited to a brief statement of their academic interests and goals. Slides and overheads should not be used.

Because it is often difficult to find a time when the four members of your committee will be available for a three hour period, begin scheduling your QE well ahead of time. The Graduate Student Affairs Officer will work with you on coordinating the faculty as well as submitting your *Application for the Qualifying Exam* to the Graduate Division. This form needs to be submitted as least one month before your qualifying exam date.

### **Advancement to Candidacy and Normative Time**

As soon as possible after your Qualifying Examination you should petition the Graduate Division for Advancement to Candidacy. On the petition you will name your Dissertation Committee members and state the title of your dissertation. There is a fee (currently \$90) for Advancement.

Normative Time is defined as the time it takes, normally, to finish a Ph.D. in a particular program. For Integrative Biology the time is ten semesters. A reduction in the Educational Fee is

available for registered students who have Advanced to Candidacy (called the In-Candidacy Fee Offset - ICFOG). To be eligible, students need to be within normative time and have no other forms of support that pays your fees, i.e. GSI, GSR fellowships, etc. If you take and pass your Qualifying Examination in your fourth semester as recommended, you will have six semesters of Normative Time remaining during which you may request the offset. You must file for Advancement to Candidacy before the beginning of the semester for which you are seeking the Normative Time offset.

### **Reduced Nonresident Tuition**

Graduate doctoral students who have been advanced to candidacy will be granted a 100% reduction in nonresident tuition for up to three years. Any student who continues to be enrolled or who re-enrolls after the three year period will be charged the full nonresident tuition rate that is in effect at the time. Keep in mind that semesters you withdraw still count toward the three year period.

### **Departmental Annual Review of Graduate Students**

The Graduate Division requires that departments conduct an annual review of graduate student progress. The Head Graduate Advisor and the Graduate Advisors Committee will oversee the review process. Each student's progress is assessed and appropriate recommendations are made.

The Graduate Student Affairs Officer will give you a form that outlines the requirements of the annual review: A written report that includes a synopsis of the past year's progress; a thesis outline; goals for the coming year; and a current CV (Curriculum Vitae). You are responsible for scheduling a meeting with your Supervisory or Dissertation Committee and obtain the members' signatures on the report. This is an excellent opportunity to meet with your

committee members as a whole and get their feedback on your work. First year students are required to submit a CV which should be updated in subsequent years.

### **Teaching Experience**

Training our students to be college or university professors with a high regard for excellence in teaching as well as research is a primary goal of the department's program. Most students probably teach more than two semesters as it is the most available means of support offered by the department. Teaching appointments are 50% five month appointments, and are assigned semester by semester. Occasionally a 25% appointment is offered or can be arranged. If you have a fellowship you are usually allowed to teach 50% in one term or 25% in each term, *unless specifically prohibited by your fellowship*. There is no restriction on teaching for departments other than IB. It is required that you enroll in IB 303, the *Teaching Colloquium*, participate in the Teaching & Orientation Conference and to complete the online ethics course, either prior to or concurrently with the first course you teach.

Graduate students who do not speak English as a native language are required to pass either the Test of Spoken English (TSE), administered through the Educational Testing Service, or the Speaking Proficiency English Assessment Kit (SPEAK), administered on the Berkeley campus by the GSI Teaching and Resource Center before being able to teach as a GSI at Berkeley. Students who hold a B.A. or B.S. from a U.S. institution do not need to take the SPEAK or OPT.

### **ADDITIONAL GRADUATE DIVISION REQUIREMENTS**

The Guide to Graduate Policy handbook is the guide that explains the policies and procedures that govern graduate work at Berkeley. It is

available on the Graduate Division website at <http://www.grad.berkeley.edu/policies/guide.shtml>

You can read in greater detail all the Graduate Division regulations governing every phase of a student's career from admissions through dissertation formatting requirements. The following is a summary of the situations you might encounter:

### **In Absentia Registration**

*In absentia* status is a form of registration available to academic and professional graduate students undertaking coursework or research related to their degree programs *outside of California*. Students registered *in absentia* are only assessed full health insurance fees, and 15 percent of the combined Student Services and Educational fees. If applicable, students are also assessed non-resident tuition and/or professional school fees.

All applications are due by July 15 for the fall semester and December 9 for the spring semester. Please consult with the Graduate Student Affairs Officer before submitting the application.

### **Approved Withdrawal**

If you decide to withdraw for a semester or discontinue your studies for any period of time, you will need to get the approval of the Head Graduate Advisor and your mentor. Please also discuss your plans with the Graduate Student Affairs Officer. Failure to obtain departmental approval for your withdrawal may jeopardize your re-admission to the department. Be sure to submit an *Application for Readmission* along with a fee to the Graduate Division at least two months before you plan to re-enroll at Berkeley.

### **Minimum Units**

The minimum enrollment requirement for all graduate students who are not yet advanced to doctoral candidacy will be 12 units per semester regardless of their employment status.

Students who are advanced to doctoral candidacy and are registered and enrolled are presumed to be working full time on their dissertations regardless of the number of units in which they are enrolled.

All courses in which the student is enrolled will count in this total of 12 units, including special studies courses, individual studies courses (601, 602), and courses on preparation for teaching (300-level). Please note that while no more than 8 units of 600-level courses are allowed per semester, the previous limit of 16 units of this type of course during a student's graduate career is no longer in effect.

### **Changing Committee Members**

Your dissertation title and/or membership of your Dissertation Committee can be changed. Committee member changes require the approval of the Head Graduate Advisor and submission of a petition to the Graduate Division. Petitions are available from the Graduate Student Affairs Officer or on the Graduate Division website. Dissertation or thesis titles may be changed without notifying the Graduate Division before submission.

### **Letter Grades and Satisfactory/Unsatisfactory (S/U) Grades**

In order for students to remain in good standing, they must maintain an overall grade point average of at least 3.0 on the basis of all upper division and graduate courses (100 and 200 level) taken in graduate standing.

It is important for first year students to take courses on a letter graded basis in order to establish a grade point average for future

fellowship and academic appointment consideration. Too many courses graded S/U make such decisions more difficult.

Credit for courses taken on an S/U basis is limited to one-third of the total units (excluding courses numbered 299 or those in the 300, 400, or 600 series) that students have taken and passed at Berkeley at the time their degrees are awarded. This is an Academic Senate regulation which is enforced by both Graduate Division and the Office of the Registrar for both graduates and undergraduates. You should check your balance each time you get ready to schedule classes for the next semester.

### **Application for Use of Filing Fee**

When you are reaching the final stages of writing your dissertation, or have completed it and are preparing to file, you have the option of petitioning to be on filing fee status. On Filing Fee status you are not considered a registered student for any purpose, including the deferment of student loans, except for the final reading and filing of your dissertation. You should submit your filing fee petition by the last day of the first week of instruction of the semester in which you intend on filing. You must either be fully registered or on filing fee status to file your thesis or dissertation. You may use filing fee only once.

If you do not file by the end of the semester, you will have to pay readmission and full registration fees to file your dissertation. You will not be covered by the Student Health Insurance Plan (SHIP) while on filing fee, but you may purchase the plan separately. Contact the Student Health Services for more information.

### **Change of Address**

You can update your address via BearFACTS.

Payroll will not rely on the Registrar's database for addresses so you need to also make payroll address changes via [blu.berkeley.edu](http://blu.berkeley.edu).

## **REGISTRATION**

To be officially registered you must: 1) be enroll in at least one course; 2) pay at least the first installment of your registration fees; and 3) not have any blocks on your registration. You must register each semester before the end of the third week of classes. There are several serious consequences to neglecting this deadline.

August 2-August 9, 2012 is reserved for entering graduate students to use TeleBears, the on-line course enrollment system on the internet. There is an adjustment period from mid-August to mid-September during which you may add or drop classes, or enroll for the first time if you missed the earlier opportunity.

Availability of TeleBears ends after the third week of classes. During the following months you may add or drop classes, change grading options, or change unit loads in variable unit courses through the On-Line Add/Drop System (OLADS). You can get an Add/Drop form from the Graduate Student Affairs Officer. It should be signed by the instructor (if required). The Graduate Student Affairs Officer will make the changes on-line. Graduate students may add or drop classes up until the last day of classes.

## **MASTERS DEGREE**

Although Integrative Biology only admits students to the Ph.D. program, students may earn a Masters Degree while progressing toward the Doctorate. Occasionally, a student changes his or her career goal and decides to leave the program with a terminal Masters Degree. The Graduate Division requirements for earning a Master's are the following:

## Degree Plans

**Plan I** requires at least 20 semester units of upper division and graduate courses, plus a thesis. At least 8 of these units must be in 200 series courses in the student's major subject.

**Plan II** requires at least 24 semester units of upper division and graduate courses, followed by a comprehensive final examination administered by the department. At least 12 units must be in graduate courses in the student's major subject.

The department's policy is that a student earning a Master's degree as part the Doctorate program may do so only by writing a thesis under Plan I. A student terminating his studies in Integrative Biology with a Master's degree may do so under either Plan I or Plan II.

## Application for Candidacy for the Masters Degree

If you are planning to earn a Masters Degree, either as part of your progress toward the doctorate or as a terminal degree, you must submit this form no later than the end of the fifth week of classes of the semester in which you expect to receive the degree.

## RESIDENCY

With the nonresident tuition now at least \$7,551.00 per semester, if you are coming from out of state you will want to become a California resident as soon as possible and be exempt from this fee. You must be a resident of California for more than one year before the first day of the semester for which you are claiming residency. Note that only U.S. citizen and permanent residents are eligible for California residency for tuition purpose. To do this you need to establish both your date of entry and your intent to remain. Therefore you must begin documenting your intent to reside permanently in California as soon as possible. Make sure all documents are clearly

dated. Intent to remain may be demonstrated by the following:

- ◆ Acquiring a California Driver's License or ID card within 10 days of your arrival
- ◆ Obtaining a motor vehicle registration within 20 days of your arrival
- ◆ Registering to vote and voting in California elections
- ◆ Establishing and maintaining active bank accounts in California banks and **closing** out-of-state accounts
- ◆ Working in California and filing a California resident tax form from the date of entry into the State. Income earned outside of the State thereafter must also be declared in California.
- ◆ Designating California as your permanent address on all school, employment and current military records
- ◆ Remaining in California when school is not in session and keeping receipts to verify that you were in residence
- ◆ Canceled checks

This is only a sample of the type of information which will be required. Whatever form it takes, evidence must be consistent with your relinquishing your residence in another state. Lease agreements, rent receipts, and copies of plane tickets will establish date of arrival, but not intent to remain. The Residency Office will begin taking applications for residency about May 1, for the following academic year.

It is important to show that you have entirely relinquished your residence in another state as well as to prove intent to remain in California. You must also be able to demonstrate financial independence, i.e. your parents did not claim you as a dependent on the previous year's tax forms, and you can show that you will have financial support for the year in which you intend to gain residence status.

Please note: your petition for classification can't be finalized until all required documents, including official verification that you remained in California during the entire summer, are submitted. Therefore, students who have not completed the classification process and have not been classified as a resident by the registration fee payment deadline will be liable for payment of their assessed nonresident fees.

## FINANCIAL ASSISTANCE

The department provides Integrative Biology Ph.D. students in good standing with five years of financial support if they do not have other sources of funding. Forms of support include Graduate Student Instructor (GSI) and Graduate Student Researcher (GSR) appointments, curatorial positions, and Fellowships (both University and Extramural). This five year guarantee includes the years a student is supported by outside fellowships. In past years the department has been able to provide support to all sixth year students who needed it and were able in many cases to hire students who were here seven years and more. However, our ability to predict funding is not perfect, so when planning their research and funding students should take into account that the department cannot guarantee support after they have exceeded normative time. As mentioned above, every student is required to teach for at least two semesters in order to earn the Ph.D.

### *Graduate Student Instructor*

Formerly known as a Teaching Assistant, this is usually a 50% time job, meaning that GSIs work 20 hours per week on the average. The type of work and the time needed varies according to the class. Appointments are assigned by the Head Graduate Advisor of the department and based upon sufficient academic progress and the undergraduate teaching evaluations from previous semesters. Appointments are usually made for one semester at a time. Each semester has five paychecks. If appointed in both

semesters GSIs receive ten paychecks, once a month, from **September 1** through **June 1**. In addition to a salary, GSIs are eligible for a full remission on their Educational and Students Services fees and health insurance for that semester.

Currently, the starting salary for a Graduate Student Instructor with fewer than four semesters of college teaching experience (Step 1) is \$8,655 per semester for a 50% appointment. After four semesters at that level, or with a combination of experience at a previous institution and Berkeley, GSIs advance to Step 2 with a raise in pay. Advancement to Step 3 occurs after six semesters teaching and generally GSIs remain at that level until they are finished teaching.

Step 4 is granted only under extraordinary circumstances. It is an exception which must be requested by the Head Graduate Advisor and approved by the Associate Dean of the Graduate Division. The absolute limit on teaching is twelve semesters as a Graduate Student Instructor. After the twelfth semester, a student can no longer be hired in that capacity.

At the end of each semester the department provides each GSI with teaching evaluation forms to be completed by their students and returned to the department. In addition, GSIs are evaluated by the faculty in charge of the course. The evaluations give GSIs and faculty feedback on issues such as knowledge and preparation of subject matter, presentation, fairness and impartiality in dealing with students, etc. They become part of the student's record and may be used to determine future GSI appointments as well as an assessment tool for subsequent letters of recommendation and teaching awards.

### *Graduate Student Researcher*

Formerly a Research Assistant (or Curatorial Assistant), this position varies in percentage, usually between 40-50%, with a 50% rate of

\$8,315 per semester at step 3. These positions are usually supported by money from a professor's grant, and you should make arrangements with that professor. The hours are somewhat more flexible than those of Graduate Student Instructors. There is also a partial or full fee remission which is determined by the percent time of the appointment.

As with the Graduate Student Instructor, there are raises in pay earned through time in step. In the Museum of Vertebrate Zoology, the Museum of Paleontology, and the University Herbarium, Graduate Student Researchers are generally hired at 50%, and are sometimes referred to as Curatorial Assistants, but are still hired and paid as Graduate Student Researchers.

### ***University Fellowships***

Graduate students receive University funding from two sources. The first is funding within the University such as the Berkeley Fellowship or the UC Dissertation Fellowship. These are administered by the Graduate Division. For a complete list of the fellowships available, the criteria for the award and the application deadline, please see the Graduate Division's fellowship website.

### ***IB Fellowships***

The department is given a block grant for student support each year. Generally, our first priority is to help entering students get on their feet, so we use these funds to pay one year of nonresident tuition for entering nonresident students who do not have outside fellowship support. The remaining funds are used for ICFOG awards, fellowship supplements, GSI fee balances, and other student support.

### ***Extramural Fellowships***

Investigate these at least one year before you intend to use them since the application process for most of them is quite lengthy. In some cases,

e.g., the National Science Foundation Fellowship, you must apply early in your career before you have too many graduate units to be eligible. A full list is available from the Graduate Fellowships Office, as well as applications for some of the major awards such as NSF.

You can apply for some extramural fellowships through the IB Grants Office in 40 Giannini. With your mentor's approval, the department will help you submit proposals for NASA and NSF Fellowships.

## **FINANCIAL AID**

The Graduate Financial Aid Office is located at 201 Sproul Hall. U.S. citizens or students who hold immigrant visas may apply for need-based loans, grants and work study awards.

### ***IB Support***

The Department has limited funds available to cover student research and travel expenses. Applications for both types of funding are available on the IB website.

**Research Funds:** The purpose for which funds will be used should be integral to the dissertation research, "side" projects will not be supported. Appropriate expenses include supplies, small items of equipment, and costs associated with field research. You may request up to \$300 per fiscal year. Applications should be addressed to the Chair of the Graduate Research Allocation Committee (GRAC) and should include a brief description of the proposed research, a budget, and a justification for the proposed use of Departmental funds.

**Travel Funds:** These funds are intended only for travel to scientific meetings at which you are presenting a poster or paper. You may request up to \$250 per fiscal year to help defray travel and lodging costs while attending. Applications

should be addressed to the Chair of the GRAC and must be submitted prior to the meetings for which the funds are requested. The application must include an official confirmation that the poster or paper has been accepted for presentation.

**IB 299 Funds:** These funds are made available to each laboratory. A certain amount is given for each graduate student and it is used with the approval of the professor in charge of the lab.

## RESEARCH FACILITIES

The University maintains an abundance of research facilities for students and faculty, several of which are associated with Integrative Biology:

### *Bodega Marine Laboratory (BML)*

BML supports research and teaching in marine sciences and coastal field biology. It is administered by UC Davis, but is available on a year-round basis to students from other UC campuses. It is located on the 362-acre Bodega Marine Reserve, roughly 60 miles north of Berkeley. In addition to housing, it has well-equipped facilities for research over a wide range of coastal habitats.

### *Gump Biological Research Station*

The Gump Station is located on the island of Moorea in French Polynesia, one hour by boat from Tahiti. It includes a dormitory and field laboratory and supports research in freshwater, marine, and terrestrial biology.

### *The Field Station for Behavioral Research*

The Station is located at the top of Strawberry Canyon, east of the campus. It has facilities for observing a large variety of species. Faculty, postdoctoral researchers and graduate students from several departments use these facilities. You should contact the Director, Dr. Stephen

Glickman, Department of Psychology, 3210 Tolman Hall, MC 1650, for permission to conduct research at the Station.

### *The Museum of Paleontology*

UCMP is located at 1101 VLSB. It contains one of the largest collections of fossil organisms in the nation, and is a center for paleobiological studies.

### *The University and Jepson Herbaria*

The Herbaria (1001 VLSB) house large reference/research collections and associated modern lab facilities. The University Herbarium collection encompasses all parts of the plant kingdom on a worldwide basis. The Jepson Herbarium collection specializes in the California vascular flora.

### *The Museum of Vertebrate Zoology*

MVZ is a research institute and repository for specimens and information relating to "higher" vertebrate animals. It has a large collection of mammals, birds, reptiles and amphibians. It houses a number of faculty, postdocs and graduate students. It is located at 3101 VLSB.

The MVZ also operates the Hastings Natural History Reservation in upper Carmel Valley. This is a completely protected site for the study of ecological interactions in undisturbed communities. Though it is administered and sponsored by the MVZ, Hastings is part of the UC Natural Reserve System. There are 30 such reserves throughout the state. Units with which IB students and faculty are directly involved include Hastings, Angelo Reserve (a research site in northern California under joint management with the Nature Conservancy), Hopland and Sagehen Creek.

### *Essig Museum of Entomology*

The Museum is among the 15 largest entomological research collections in the United

States with an estimated 4.5 million specimens of insects and other terrestrial arthropods. Research facilities include work areas with microscopes for visiting scientists, computer stations with internet capabilities, and an extensive reference library.

### ***UC Botanical Garden***

The Garden is located in Strawberry Canyon at 200 Centennial Drive. A world-wide collection of over 13,000 plant taxa of known wild origin make it one of the largest plant collections in the United States. Research facilities include the existing plantings, limited greenhouse and lath house space, and a separately fenced growing area for in-ground or raised-bed experiments. In addition, the Garden participates in an international seed exchange program and may be able to provide taxa unavailable from typical sources. Students are encouraged to explore the Garden for their research and teaching needs. Access to the Garden is quick and easy by campus shuttle or by car.

### ***Electron Microscope Laboratory***

Located at 26 Giannini Hall, this facility is available for graduate students who are conducting doctoral research. For free training, students should enroll in MCB 481B for transmission microscopy, or MCB 481C for scanning microscopy. Work done for faculty members is paid for out of their grants. They also offer full service microscopy for those who don't have time to run their own samples.

### ***Cancer Research Laboratory***

This lab is affiliated with the Department of Molecular and Cell Biology. It is located at 447 Life Sciences Addition (LSA).

## **COMPUTER SERVICES**

### ***CalNet ID***

Your CalNet ID is a vital online "identity" which is required for access to a growing number of essential UC Berkeley online services. With an activated CalNet ID you can download campus-licensed software, access student information systems, and more. The CalNet ID site for more information and instructions is <https://calnet.berkeley.edu/>

### ***Email***

Electronic mail is an essential means of communication among students, faculty and staff. All UC Berkeley students are required to have a berkeley email account. For information and set up go to: <https://calmail.berkeley.edu/>

### ***IB Grad Student listserv***

There is an electronic listserv (ibgradstudents@berkeley.edu) through which you will receive important announcements and forwarded messages from the Graduate Student Affairs Officer, fellow graduate students, faculty and select others. You can also post messages to all the IB graduate students using this address. The list is closed to only IB students and associates and you will need to use your berkeley email address to receive and post messages to the list. If you are associated with one of the museums or herbaria, check to see about subscribing to their lists as well.

### ***Web Sites***

The UC Berkeley web site: [www.berkeley.edu](http://www.berkeley.edu) includes information about enrollment, courses, computing, and many other topics.

The departmental web site can be found at: <http://ib.berkeley.edu/> . This site includes a directory of faculty and fellow graduate

students, IB applications and forms, program information, etc.

### ***Computer Facilities***

Two microcomputer facilities for student use are located just inside the Biosciences Library, on the second floor of VLSB. One of these is a general use facility, available for drop-in use, but at times it is crowded and you may have to wait. The other can be reserved for use by particular classes during certain periods. Check with the librarian if you want to reserve it for one of your sections.

There is also a department computer lab available for instructional use. Contact the IB Instructional Support unit for information or reservations. Additional facilities are available in Dwinelle, Moffit Library and Wheeler Hall. Museums and Herbaria have limited computing facilities available for students associated with them. Each professor's lab should also have computers available for student use.

### ***Scientific Visualization Center (SVC)***

The SVC is a UC Berkeley Recharge Unit dedicated to offering large format printing, laser printing, scanning (both slide and flat bed), and tech support / design work at a low cost, convenient location, providing students and faculty the ability to directly charge to UC grants and funds. Website: [svc.berkeley.edu](http://svc.berkeley.edu).