

OUR ENVIRONMENT AT BERKELEY
DEPARTMENT OF ENVIRONMENTAL SCIENCE, POLICY, AND MANAGEMENT

GRADUATE STUDENT HANDBOOK

2015-2016

HANDBOOK FOR GRADUATE STUDENTS

PROGRAMS IN ENVIRONMENTAL SCIENCE, POLICY, AND MANAGEMENT, FORESTRY AND RANGE MANAGEMENT

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FOREWORD

The purpose of this handbook is to provide essential information for graduate students about life in the Ph.D. program in Environmental Science, Policy, and Management (ESPM), the Master of Forestry (M.F.) and the M.S. in Range Management. A wide range of information is included to help students find out what questions to ask, as well as where to get questions answered. The topics range from where to find poster printing facilities to who may serve on a qualifying examination committee. This book is updated yearly to include changes that have taken place in the preceding year.

Some of the material contained in this book is quite formal and has been condensed from a wide variety of sources that explain regulations affecting your progress towards your degree. This world of rules and regulations can often seem confusing. Your guiding professor, the Head Graduate Advisor, and the Graduate Student Services Officer are available to help you navigate the bureaucracy as smoothly as possible.

Please feel free to direct any comments that you have for improving this handbook to the Graduate Student Services Office, 133 Mulford.

INTRODUCTION

Welcome to the ESPM graduate program. If at any time you have questions about ESPM or University policies, or how to survive at the University, please come see the Graduate Student Services Officer in room 133 Mulford.

The Department of Environmental Science, Policy, and Management (ESPM) is a community of natural and social scientists working together to improve the quality of our environment. Formed in 1993, ESPM brought together the former Departments of Conservation and Resource Studies, Entomological Sciences, Forestry and Resource Management, Plant Pathology, and Soil Science. The mission of ESPM is to advance our knowledge and understanding of natural resource systems in order to develop innovative solutions to complex environmental challenges. Approaching this goal through multidisciplinary research, teaching, and extension, the department focuses on ecosystem stewardship; environmental governance; global change; organisms and biodiversity; and science, technology and environment.

ESPM admits students to the Ph.D. in Environmental Science, Policy, and Management; the Master of Forestry (M.F.); and the M.S. in Range Management.

The ESPM faculty is organized into three divisions based on faculty research orientation. The Organisms and Environment Division centers on research that builds from individuals and populations of organisms. Ecosystem Sciences is about biological communities and their interaction with the physical environment. Human communities and societies in the context of environment are the focus of Society & Environment. The faculty lab you are in will be affiliated with one of these divisions, and that may have some influence on certain aspects of your program. These differences will be noted in the handbook as necessary. However, this division affiliation does not affect your degree or the basic departmental requirements for your degree.

ESPM is located within the College of Natural Resources (CNR). Other departments and programs in the College are Agricultural and Resource Economics (ARE), Energy and Resource Group (ERG), Nutritional Sciences (NST), and Plant & Microbial Biology (PMB). The departments of CNR have a common philosophical concern that our renewable natural resources are best used in ways that are at once productive, conservative of those resources, and protective of environmental quality. Refer to the CNR website at <http://cnr.berkeley.edu/> for a complete listing of the departments, programs, instructional and research facilities, and organized research units in the College.

1. UNIVERSITY PUBLICATIONS

1.1 General Catalog

The General Catalog lists all the courses offered on the Berkeley campus, and summarizes important procedures and regulations of the University. It is available for purchase at the Cal Student Store in the Martin Luther King, Jr. Student Center. The catalog may also be ordered by mail. An online version is also available at <http://www.berkeley.edu/catalog/> and is recommended as the primary source for course information.

1.2 Schedule of Classes

The schedule of classes can be found on-line at <http://schedule.berkeley.edu/>. It is updated each semester at the beginning of the Tele-BEARS enrollment cycle. In addition to listing scheduled classes, the website also contains information on registration and fee payment procedures as well as a student calendar listing most academic deadlines.

1.3 Student Calendar

The student calendar for the current academic year can be found at the Registrar Office website at http://registrar.berkeley.edu/current_students/registration_enrollment/stucal.html. This calendar lists the beginning and end of instruction days, Tele-BEARS dates for enrolling in courses, deadlines for adding and dropping courses, deadlines for submitting Statement of Legal Residence, etc. The Office of Planning and

Analysis also has academic calendars for upcoming years:
<http://registrar.berkeley.edu/CalendarDisp.aspx?terms=current>.

2. REGISTRATION, ENROLLMENT, AND STUDENT GRADES

Students register in courses online via Tele-BEARS at <https://telebears.berkeley.edu>. Students must log in to Tele-BEARS with their CalNet ID and passphrase. Information and tutorials for using Tele-BEARS can be found at <http://registrar.berkeley.edu/Default.aspx?PageID=tbinfo.html>. Note that registration is done with Course Control Numbers (CCN), which are listed in the Schedule of Classes. CCNs for the course ESPM 299 (independent research) are specific to each guiding professor and are emailed to graduate students each semester by the Graduate Student Services Officer.

Student grades may be viewed via BearFacts at <http://bearfacts.berkeley.edu>.

3. FACILITIES FOR RESEARCH AND INSTRUCTION

3.1 Giannini Hall, Hilgard Hall, Mulford Hall, Wellman Hall and the Valley Life Sciences Building (VLSB)

Divisional administrative offices and individual ESPM faculty offices are in Giannini, Hilgard, Mulford, Wellman, and VLSB. The ESPM Graduate Student Services Office is in 133 Mulford.

3.2 Library Services

The BioScience and Natural Resources Library is located in 2101 Valley Life Sciences Building (VLSB). Regular library tours will be scheduled during the first three weeks of the fall semester. **In addition, a tour is offered especially for ESPM graduate students as part of new student orientation, and will include an introduction to the most up-to-date electronic resources available for your use.** You are strongly encouraged to attend this tour since it will be expressly tailored to your needs as ESPM grad students.

Additional information on campus libraries, including hours and locations, can be found at <http://www.lib.berkeley.edu/index.html>. Many academic journals are accessible off-campus via a proxy server, see http://www.lib.berkeley.edu/Help/connecting_off_campus.html.

3.3 Computing Facilities

3.3.1 Departmental Computers

For students whose labs are in the departmental divisions Ecosystem Science and Organisms and the Environment computer access is usually provided through your guiding professor. Availability of on-campus printing varies by lab group and guiding professor. Students whose labs are in Society & Environment have access to shared computer and printing services located in the Lodge (44 Giannini).

Computers and a laser printer are also available for graduate student use in the Student Resource Center, 260 Mulford, from 9 a.m.-5 p.m. on weekdays. This center is primarily used by undergraduates but is available to graduate students. Computers are also available at libraries and computer labs throughout campus.

3.3.2 CNR Server

Students may establish accounts on CNR main server, "nature", to take advantage of file storage, personal and lab web pages, database, and research computing. See the computing support group in 42 Giannini to set up nature accounts.

3.3.3 GIF Workspace and CNR Teaching Lab

The Geospatial Innovation Facility (GIF) is located in 111 Mulford Hall. This workspace offers computers with geospatial software (e.g., GIS), a large-format plotter, a color letter-sized printer, and a letter-sized scanner. Contact GIF staff to set up an account. The GIF workspace offers workshops each semester with introductions to GIS software, remote sensing facilities, etc.

GIF also maintains the CNR Teaching Lab in 124 Mulford Hall. This workspace offers computers with geospatial and statistical software. These computers are available for student use when classes are not in session; see the GIF calendar for class schedules in this room. The door requires an entry code for access, which can be obtained from GIF staff.

See <http://gif.berkeley.edu/> for information about GIF and its facilities.

3.3.4 Email

Free email accounts are available through the university's CalMail system for email addresses ending with @berkeley.edu. Accounts can be procured by going to <https://calmail.berkeley.edu> with an active CalNet identification. Because we rely so heavily on email as a way for students, faculty, and staff to communicate, all students are required to open an account. Email is used actively all year to transmit important information, and all students should have accounts by the end of the first month of the fall semester.

ESPM previously used email accounts administered by CNR with email addresses ending with @nature.berkeley.edu. As of January 2010, these accounts will no longer be available. Some older documents and websites may still list email addresses with the old system.

3.3.5 ESPM Graduate Student Email List

ESPM graduate students will receive official university and departmental announcements through espmdept_gradupdates@lists.berkeley.edu. ESPM students will be automatically enrolled with this listserv.

For Students by Students: ESPM graduate students receive general interest email on topics ranging from funding opportunities, event announcements, job postings, and roommate searches from espm_gradstudents@lists.berkeley.edu. Students should make sure they are signed up to receive these emails by contacting the Graduate Student Coordinator.

Additionally, each new cohort of incoming graduate students has an email list, such as espm2009@lists.berkeley.edu, for students who entered in 2009. These cohort-specific email lists are used most during the first year of graduate school.

These email lists and other lists associated with student organizations can be managed at <https://calmail.berkeley.edu/manage/list/>.

3.3.6 ESPM Grad Student Central Website

The ESPM Grad Student Central web site is a one-stop shop for many graduate student needs and queries. The home page provides current news updates and useful links. A searchable roster lists all of our current graduate students with their research interests.

Currently elected student representatives are also posted with their contact information. More detailed information on funding, oral exams (including which students had which faculty on their committees), and the dissertation can be found at the respective links. Workshops and seminars organized by graduate students are also listed on this website. Visit Grad Student Central at <http://ourevironment.berkeley.edu/current-graduate-students/>.

3.4 Field Stations and Research Facilities

ESPM students have access to a wide array of field stations and research facilities, which are listed in full at <http://espm.berkeley.edu/facilities.php>.

Field research sites include: Blodgett Forest Research Station in California, Richard B. Gump South Pacific Research Station in Moorea, French Polynesia, and University of California Nature Reserve System. Lab and research facilities on or near campus include the Environmental Genomics Lab, CNR Biological Imaging Facility, Geospatial Innovation Facility (described in Section 3.3), and Stable Isotope Biogeochemistry facility. Research collections of varied taxonomic groups are found through the Berkeley Natural History Museums (Essig Museum of Entomology, Jepson Herbarium, etc.). Links to all of these facilities, and relevant campus research centers, can be found at the website listed above. Graduate students are encouraged to take advantage of the opportunity to do work with these facilities, and to contact relevant faculty and research support staff regarding available equipment, permits, lab fees, etc.

4. FACILITIES AVAILABLE TO STUDENTS

4.1 Graduate Student Services Office

Located in 133 Mulford, the Graduate Student Services Office provides students with support services for all aspects of graduate student life. This includes information on how to navigate the maze of rules and regulations that students travel as they go through their programs, as well as general information about life in the department and on the Berkeley campus. The office contains all student files. It is a good place to start when you need information or have a problem of any kind. Forms for adding and dropping courses, establishing a guiding and oral exam committee, advancing to candidacy, and others can be found in this office. As explained in Section 7, graduate students should check out the following documents: PhD Program Card, Guiding and Orals committee Form, when meeting with their Guiding Professor, Guiding Committee, and Oral Exam Committee members.

The Graduate Student Services Office is open Monday–Friday, 9:30AM–12:00PM and 1:00 AM–4:00 PM.

4.2 Keys

Keys to facilities in Hilgard, Wellman, Mulford and Giannini are available from the facilities office in 54 Mulford Hall. Students needing keys to VLSB should check with their guiding professor and the Integrative Biology department website <http://ib.berkeley.edu/admin/facilities/vlsb/keys.php>.

Per a rule established by the U.C. Police Department, there will now be a minimum 30-day waiting period for any key that is not currently in stock, so please be prepared for this delay and temporary inconvenience. Keys must be returned before a diploma or final transcript will be issued.

4.3 Mailboxes

All ESPM graduate student mailboxes are located in 140 Mulford. Mail is grouped by your guiding professor (i.e., lab group). **These mailboxes are for campus and professional mail and faxes (i.e., job- and school-related material only) for registered students only.** Do not plan to receive personal mail—including magazines and periodicals, bank statements, personal correspondence—in these boxes. Because of limited staffing, it is impossible for us to sort and distribute large quantities of student mail. In addition, the public location of the mailboxes makes it inadvisable to receive personal mail there. We expect you to inform your correspondents of your local home address as soon as you have one. **Be forewarned: after a suitable transition period (@ 6–8 weeks into your first semester) we cannot be responsible for any of your personal mail.**

Correspondence should be directed to the department at the following address:

Department of ESPM
U.C. Berkeley
140 Mulford Hall #3114
Berkeley, CA 94720-3114

4.4 Bulletin Boards

Requests to post bulletins should be referred to the Graduate Student Services Officer. Official Department and University announcements that may be relevant, as well as special classes, available jobs, fellowships, and assistantships are posted on bulletin boards in Mulford. As previously mentioned in Section 3.3, the ESPM graduate student email list is used as the primary outlet for event and course announcements, fellowships, and job opportunities. Additional information about opportunities relevant to ESPM graduate students is found on the Grad Student Central website at <http://ourenvironment.berkeley.edu/current-graduate-students/>.

4.5 Copying Facilities

There are copy machines available for student use in 140 Mulford, 133 Hilgard, and 415 Wellman. In general graduate students should plan to use copiers for short, quick jobs only. *Staff and faculty must always be offered priority in the use of the copier, even if you are doing work for a faculty member.* Copying accounts are either approved by your guiding professor or the faculty member for whom you are working. Upon such approval, facilities staff will assign the actual code for the appropriate copier.

Copy Central, at Shattuck and University Avenues, offers overnight service, inexpensive rates, and deferred payments for students. Please check with accounting staff for details on how to use Copy Central's services. Other copy services may have similar programs. Using department machines may not always be the cheapest way to make copies. Check with other students for the latest information regarding cheap local copying centers.

4.6 Printing Posters

As previously explained in Section 3.3, the GIF workspace has equipment to print posters for academic conferences, maps, or other large-sized printing needs. You must contact the GIF lab to make an appointment, and allow a few days lead time. The lab may decline impromptu walk-ins. The lab gets very busy around conference time, so *don't wait until the last minute*. Rates and contact information are found at <http://gif.berkeley.edu/services/printing.html>. Printers in Wurster Hall (School of Environmental Design) also charge relatively low rates, although students must first get an account for those computer labs. Students should ask their labmates and professors for reasonably priced poster printing on campus, as the fees at campus printing facilities are typically less expensive than outside businesses such as Kinko's. Do ask about university discounts offered by private printers.

4.7 Telephones

Unless made available to them by a faculty member, students will not normally have direct access to a telephone. Incoming professional and personal messages *that are emergency in nature* may be left with the department receptionist in 130 Mulford at 510-643-7430. These messages will be placed in your campus mailbox or posted on message boards.

5. STUDENT ORGANIZATIONS AND EXTRA-CURRICULAR ACTIVITIES

5.1 Graduate Student Association

All graduate students in ESPM, Forestry, and Range Management are automatically members of the ESPM Graduate Student Association (GSA). This group serves students in both academic and non-academic affairs such as delegating members to represent the graduate students on committees and seminars, encouraging student and faculty interaction through seminars, representing student problems to the faculty and administration, sponsoring and organizing social events, and holding fundraising events such as t-shirt sales. The GSA holds meetings periodically. Students will find participation in the GSA a good way to learn

about current news in the department, and to get acquainted with fellow students. Elected positions in the GSA include chair, secretary, treasurer, and representatives for each academic division in the department (Ecosystem Science, Organisms & Environment, and Society & Environment). Elected and non-elected students volunteer to coordinate social activities such as the first-year orientation camping trip, happy hour, and the annual holiday bake-off (a joint activity with ESPM and the Department of Integrative Biology).

5.2 ESPM Graduate Research Symposium

The ESPM Graduate Research Symposium is an annual one-day event. The symposium is held in the spring semester and serves as a venue for both in-progress research presentations and presentations about concluded dissertation research (the finishing talk, see section 7.7.9). An outside environmental researcher, professional, or advocate is invited to be the keynote speaker. In addition to student research presentations, the event also typically features a poster session. Students volunteer to assist with the event (registration, set up, audio/visual, etc.). The symposium is coordinated by the Graduate Research Symposium Planner, described in Section 5.3.

5.3 ESPM Departmental GSR appointments that support academic and social engagement

There is one GSR position that is sponsored at the departmental level with the purpose of promoting and supporting academic and social interaction between the three divisions, as well as between students, faculty, and staff: the Graduate Student Coordinator/ Graduate Research Symposium Planner.

5.3.1 Graduate Student Coordinator/Graduate Research Symposium Planner

The Graduate Student Coordinator/Symposium Planner is a two-semester GSR appointment. The Graduate Student Coordinator functions in three main roles: academic support, communication, and social interaction. The student appointed to the role is given a lot of freedom with which to operate, but a general list of responsibilities includes:

- Organize 2-3 “Straight Talk” faculty panel workshops on various topics per semester
- Communicate with the ESPM student body on topics including academics, grants, scholarships, jobs, activities, and other opportunities – usually in the form of a weekly or bi-weekly update email
- Help the Graduate Student Services Officer to facilitate Campus Visit Day and New Student Orientation
- Sit on the ESPM Faculty’s Graduate Programs Committee and represent the interests of the students
- Facilitate ESPM elections and student involvement in the Graduate Student Association
- Help to plan and host Social Hour and Weekly Coffee, as well as other department social events
- Serve as the unofficial point-person for graduate student questions
- Establish the date, location, venue, and catering for the Research Symposium
- Secure a guest speaker and coordinate travel and accommodations
- Manage poster and paper submissions and registration
- Advertise the event and producing a program
- Organize volunteers to help make the day run smoothly
- Help the Graduate Student Services Officer to facilitate the “ESPM Annual Awards Ceremony” held at the end of the Graduate Research Symposium

5.4 Other Opportunities for Graduate Student Representation

ESPM graduate students have additional opportunities for representation within the department and the university. These include the ESPM Graduate Programs Committee Representative (GPC), ESPM New Faculty Search Committee Student Representative, and UC Berkeley Graduate Assembly Representative. For information on these positions, please contact the Graduate Student Coordinator. Current representatives are listed on the ESPM Grad Student Central website

<http://ourenvironment.berkeley.edu/current-graduate-students/representation/>.

5.5 Special-interest organizations and activities

ESPM graduate students participate in several special-interest extra-curricular organizations, some of which also involve undergraduate students. Many organizations have UC Berkeley email lists, which students can subscribe to and manage at <https://calmail.berkeley.edu/manage/list/>.

5.5.1 Cal Forestry Club

The Forestry Club is composed of undergraduates, graduate students, and faculty. The club sponsors many academic, service, and social activities. The club seeks to promote better management and stewardship of forests, contribute to student professional development, and to provide networking opportunities. Activities include travel to the Society of American Foresters annual convention, logging sports, the annual Christmas tree sale, and frequent “Beer and Beans” gatherings. There is a nominal membership fee. More information at <http://nature.berkeley.edu/forestryclub/>.

5.5.2 Society for Conservation Biology

The Berkeley Society for Conservation Biology chapter is composed of undergraduates, graduate students, and faculty, and is affiliated with the Society for Conservation Biology. It encourages interdisciplinary approaches to biological conservation, promotes development of skills needed in conservation, and organizes forums for awareness and involvement in local and global issues. The chapter has monthly meetings, sponsored talks, field trips, and participates in the annual Bay Area conservation symposium. There is a nominal membership fee. More information at <http://www.cnr.berkeley.edu/consbio/>.

5.5.3 Entomology Student Organization

The Entomology Student Organization encourages fellowship and cooperation among students interested in entomology and related disciplines, organizes educational and social functions, and represents students in the Division of Organisms & Environment in ESPM. More information at <http://www.cnr.berkeley.edu/eso/>.

5.5.4 Other campus groups

Other environmental-related groups on campus that may be of interest to ESPM graduate students are listed here: <http://espm.berkeley.edu/events/environmentalorgs.php>

5.6 Graduate student led seminars and reading groups

Topic-based seminars and reading groups are often formed and led by graduate students in ESPM to facilitate learning and shared knowledge about specific interests. Some are informal, while others are formal courses with a faculty sponsor, designated as ESPM courses numbered 290 or 298. Current seminars and reading groups are usually listed at Grad Student Central, <http://espm.berkeley.edu/gradcentral/index.php>. Graduate students interested in forming reading groups sometimes send out emails to the ESPM graduate email list at the start of each semester. Previous topics have included invasion biology, freshwater ecology, forest ecology, trophic interactions, and interdisciplinary environmental research.

5.7 Cal Day

ESPM graduate students are often very active in Cal Day, an event each spring during which prospective students, alumni, and the general public visit campus. Collections and museums are free and open to the public, and faculty and graduate students across campus give presentations about their research. Activities organized by ESPM students typically involve display of entomology collections and live specimens at Wellman Hall, tours through collections in Valley Life Science Building, and tree walks. More information can be found at <http://calday.berkeley.edu>.

5.8 Opportunities to work with undergraduate students

UC Berkeley has many programs for undergraduate research internships, and ESPM graduate students sometimes assist in the supervision and training of these interns. Supervising undergraduate interns is a way to get assistance with field or lab work. Programs include: Sponsored Projects for Undergraduate Research (SPUR), which is available to CNR undergraduates (<http://www.cnr.berkeley.edu/site/spur.php>); Undergraduate Research Apprenticeship Program (URAP), which is available to all UC Berkeley

undergraduates (<http://research.berkeley.edu/urap/>); and the Environmental Leadership Pathway (ELP), which is a program for under-represented community college students planning to major in science at Berkeley or other UCs (<http://nature.berkeley.edu/cnrelp/Home.html>). There are also other undergraduate internship and mentorship programs on campus you might participate in. If you are interested in working with undergraduates, you should suggest hosting an intern to your guiding professor. It is also important that you discuss the potential interns' tasks with the program director and your guiding professor to develop a role for the intern that will ensure a meaningful research experience.

6. HOUSING

Housing in Berkeley and surrounding areas is relatively expensive and can be difficult to find. More information about finding housing in Berkeley, including University housing options for student parents, can be found at the Residential and Student Services Programs website at <http://www.housing.berkeley.edu/housing/>. This office also maintains listings of rentals in the community via Cal Rentals, which is accessible for a fee (\$20 for 3 months of access as of summer 2010). The website for Cal Rentals is <https://calrentals.housing.berkeley.edu>. A specific section of Cal Rentals for graduate students, available without paying the fee, provides guides to Berkeley area neighborhoods, tips on rental safety and house hunting, information on renting with pets, and typical rental rates. This information can be found at https://calrentals.housing.berkeley.edu/student_services_b.asp. Many graduate students also find apartments and roommates through Craigslist at <http://sfbay.craigslist.org>. Graduate students in the department who know of available housing or who need housing are encouraged to post notices through the ESPM graduate student email list.

Another popular housing option is the International House, at <http://ihouse.berkeley.edu>.

7. GRADUATE PROGRAMS

7.1.1 Guiding Professor

a. Role of the Guiding Professor

All students accepted into the ESPM, Range Management or Master of Forestry programs are associated with a faculty member who serves as a guiding or major professor. This is the faculty member who accepted the student into his/her lab. The guiding professor's interests are similar to the student's and this professor's role is to mentor the development of the student's program of study, research topics, and other academic and professional matters. In many other departments on campus, the guiding professor is referred to as the graduate student's research advisor. Note that the terms used in ESPM are guiding professor (the student's primary mentor) and graduate advisor (who ensures that the University and department requirements are met). More on the distinction can be found in Section 7.1.3.

b. Changing to a new Guiding Professor

Normally a guiding professor serves for the duration of a student's stay, but occasionally a change of guiding professor may become appropriate. A student wishing to change guiding professors should discuss the proposed change with both the current and the new professor, and/or with their graduate advisor. All parties must agree by signing a Change of Guiding Professor Form and the completed form should be submitted by the student to the Graduate Student Services Officer, who will then register the official change. Under ordinary circumstances, the new guiding professor will assume full responsibility for continued funding for the transferring student. In all cases, if the change in professors also involves a change in divisional affiliation, and the student was receiving divisional support, the former division will no longer be responsible for continuing to provide funding. Students should always make sure of their new funding agreement before changing divisions.

In the case of disagreement between the student and faculty regarding a change, the following steps will be taken:

- a. The student will consult his/her graduate advisor for suggestions on how to resolve the situation, or for help mediating the disagreement.
- b. If the situation remains unresolved despite the graduate advisor's efforts, the case will be referred to the Head Graduate Advisor for a final decision.

(Note that a switch in guiding professor when a student moves from an M.S. or M.F. to the Ph.D. program is treated differently. See 7.7 below.)

c. Students with two Guiding Professors (co-advising)

Some graduate students choose a co-advising situation, with two faculty members serving as chair of their dissertation committee. In effect, the student has two guiding/major professors. Co-chairs may be from the same division or from different divisions. Some students enter ESPM with a co-advising plan in place. Students considering such a situation after they have been admitted should talk to their current guiding professor and/or the Head Graduate Advisor about how to proceed.

7.1.2 Head Graduate Advisor

The Head Graduate Advisor, in consultation with other advisors and faculty, is responsible for 1) recommendations for admission or denial of applicants, 2) approving applications for exams for higher degrees and reporting exam results, 3) approving applications for master's and Ph.D. advancement to candidacy, 4) acting on petitions for withdrawal, readmission, and addition or change of major and, 5) recommendations for probation, dismissal, and lapsing or termination of candidacy 6) serving as the chair of the Graduate Program Council (GPC)

7.1.3 Student/Guiding Professor Interactions

It is expected that students will work closely with their guiding professors to develop their programs of study and research topics. The guiding professor acts as a mentor promoting the student's interests. It is expected that students will attempt to see faculty during posted office hours. If that is not possible, appointments may be arranged at other times.

It is considered the student's responsibility to maintain regular communication with his/her guiding professor. It is also the student's responsibility to make sure that his/her guiding professor has signed off on a tentative academic program form as proposed by the guiding committee (see sections 7.5.1 [master's] and 7.7.1 [Ph.D.] below) by the end of the first semester of residence.

7.1.4 Graduate Programs Committee (GPC)

The GPC is an administrative body made up of faculty and student representatives from each division in the ESPM program, and the Graduate Student Services Office staff member. The committee considers and makes recommendations to the faculty on matters of curriculum and policy. GPC members serve on the graduate admissions/fellowships/appointments committee, with faculty GPC members chairing the divisional sub-committees of this group.

The GPC also considers student petitions to waive certain course requirements. Most decisions about a student's program are made in consultation with the guiding committee (see sections 7.5.1 [master's] and 7.7.1 [Ph.D.]). If all the members of the guiding committee support the student's request to waive a requirement, the GPC will then convene to vote on the issue. A petition explaining the reasons for the request must be submitted to the GPC and should include a detailed explanation of why the waiver may be justified, a course syllabus for previous coursework to be considered as equivalent to the requirement, and signature support of the student's graduate advisor and all members of his or her guiding committee. The GPC will consider the petition and inform the student of its decision.

7.2 Student Records

Student records are maintained in the Graduate Student Services Office, 133 Mulford Hall. You may sign out the following forms: PHD Program Card, Guiding Committee and Oral Committee forms whenever you

like, but be sure to return it to the Graduate Student Services Office within 24 hours. Losing your documents will be a major headache for you; the safest place for it is the filing cabinet in 133 Mulford. **You should always take these documents to any meeting with your graduate advisor, guiding professor, or guiding committee.** Your proposed program, and subsequent changes to your program, will be recorded on the program form in your file.

Access to all student records is subject to applicable federal and Graduate Division guidelines governing confidentiality. **For this reason, students may not retrieve their own folders from the file cabinets. Files are available during regular student service office hours (Monday–Friday, 9:30–12:00 and 1:30–3:30), and must be requested from the Graduate Student Services Officer. Please plan ahead and make sure the files will be available when you need them.**

Most forms that a student needs for completing the various procedural steps described below are available from the Graduate Student Service Office in room 133 Mulford, and/or online at http://espm.berkeley.edu/gradprograms/grad_programs_forms.php. The Graduate Student Services' staff can answer questions about what form to use, when to use it, and how to obtain the various necessary approvals.

7.3 Standard Times for Progress to Degrees

7.3.1 Standard Times for Progress to Master's Degrees

All Master's Degrees

M.F. and M.S. II Take oral by end of fourth semester from date of initial enrollment

M.F. File professional paper by end of fourth semester from date of initial enrollment

M.S. I File thesis by end of fifth semester from date of initial enrollment

7.3.2 Standard Time for Progress to Ph.D. Degree

- Ph.D.
- (a) Finish pre-qualifying course work by end of fourth semester after being admitted or having transferred to the Ph.D. program
 - (b) Pass oral qualifying examination and be advanced to candidacy by end of fifth semester or within one semester of finishing course work, whichever is earlier
 - (c) Submit application to advance to doctoral candidacy by the beginning of the semester following the oral qualifying exam
 - (d) File dissertation by the end of the tenth semester from date of initial enrollment

7.4 Student Programs

7.4.1 The First Semester's Program

Since it is not feasible for most students to meet with their *guiding committee* prior to registering for classes for the first semester, all entering students should meet or speak with their *guiding professor* to plan a program for that semester. All entering graduate students pursuing a M.S. or Ph.D. in ESPM must take ESPM 201A during their first year in the program.

7.4.2 Required Courses

a. ESPM 201A-C-S. Graduate students pursuing a degree in ESPM are required to take core courses. The first required course, ESPM 201A, Research Approaches in Environmental Science, Policy and Management (3 units), will be taken in the first fall semester by all ESPM master's and doctoral students. ESPM 201C, the

seminar entitled Environmental Forum (1 unit), is required for all doctoral students and must either have been taken before, or be in progress, when the doctoral oral qualifying examination is held. Master's students are not required to take 201C. ESPM 201S, Environmental Science, Policy and Management Colloquium (1 unit), is required for all doctoral students and must be taken once before the oral qualifying examination. ESPM 201S may be repeated for credit.

b. Area of Specialization

The area of specialization is a narrower field within the disciplinary emphasis. Some examples might be: Microbial Community Ecology, Ecosystem Function, American Environmental History & Policy, International Forest Management, Biogeochemistry, Mediterranean Grassland Ecosystems, Remote Sensing, and Forest Management. Each student will be required to complete a minimum of six units in their area of specialization. The guiding committee and the student's graduate advisor will approve the selection of appropriate courses to meet this requirement. These six units must be taken for a letter grade unless the courses are offered on an S/U basis only.

c. Breadth Requirement

Each student's program must include coursework addressing human and ecosystem processes, and the relationship between them. All ESPM doctoral students must complete the required core courses, ESPM 201A-C-S. In addition, while in residence at UC Berkeley, doctoral students in the natural sciences must complete one additional course in the application of social sciences to environmental problems, and those in the social sciences must complete one additional course in the biological or physical sciences. The level of the course will be determined by the guiding committee, based on the student's background and experience. The breadth course must have substantive theoretical content, and be taught by someone qualified in social science/humanities disciplines (for natural science students) or natural sciences (for social science/humanities students). The course must be a minimum of two graduate units or three upper division undergraduate units at Berkeley, and must be taken for a letter grade unless it is offered on an S/U basis only. Final approval of a student's choice of breadth requirement rests with the student's Graduate Advisor, but the student should also consult with their Guiding Professor and Guiding Committee.

d. Research Methods

Each student must demonstrate competence in research techniques appropriate for both the disciplinary emphasis and area of specialization. Preparation in this field must include experimental design, sampling design, estimation, and hypothesis testing.

7.4.3 Registering for Classes

Incoming graduate students are strongly encouraged to be present on campus for their first two years. **All graduate students are required to enroll in 12 units by the end of the third week of classes in both the fall and spring semesters.** First year students must enroll in 8 units of regular course work (100-290 Level) each semester. The remaining units may be special topics or independent research units (ESPM 299).

Each semester the California State Legislature allocates revenue to the University based upon the number of students enrolled on the last day of the third week of classes. Failure to be registered for a minimum of 8 units on this day will result in a serious loss of revenue to the University.

Perhaps more importantly, to be eligible for employment as a GSI or GSR (see section 8.2) or to receive fellowship support the same requirement of registration for at least 8 units by the end of the second week of classes holds true. **Worse yet, any GSI or GSR who fails to register for at least 8 units by the deadline loses the University fee remissions associated with these positions, and becomes responsible for paying full in-state fees and, if applicable, non-resident supplemental tuition (normally known as non-resident tuition).** Similarly, all fellowship recipients not fully registered by

the deadline will have their fellowship support withdrawn by the Graduate Division. All of these consequences can be easily avoided by registering on time.

All of the above having been said, please note that in order to be considered full-time, graduate students at Berkeley must be registered for 12 units each semester. In addition to monies coming from the Legislature, the UC Office of the President allocates resources based on a formula in which 12 units equal one graduate student full time equivalency (FTE). The more graduate students who take a full load of 12 units, the more closely our allocation reflects the actual number of graduate students it is expected to support. There may be cases where the graduate advisor feels that a lighter academic load is appropriate for a particular student at a particular time, and in these cases the advisor's judgment will overrule the 12-unit guideline.

Each semester, the Tele-BEARS computer registration system ceases to operate after the third week of classes. For the rest of the semester, any changes to a course schedule can be made easily by completing a Petition to Change Class Schedule (available in 133 Mulford) and bringing this form to the Graduate Student Services Office for processing. The deadline for making changes to your schedule in any semester is the last day of instruction at which point departmental ability to make further changes is curtailed by the Registrar's Office.

7.4.4 Student Responsibility for Scheduling Meetings and Exams

Graduate students are responsible for scheduling their own M.S. and Ph.D. guiding committee meetings, M.S. oral and Ph.D. qualifying exams, and thesis or dissertation committee meetings. They will be supported in this by the Graduate Student Services Office which will, for example, provide them with appropriate forms to help facilitate scheduling, send out confirmation memos to all concerned once a meeting or exam has been scheduled, send out reminders shortly before the event's scheduled date, have student files ready for exam committee chair to bring to the exam. Please note that the processing time for forms through the university is approximately three weeks. The Graduate Services Office will announce internal deadlines each semester for submission of forms, particularly orals forms, by students. Facilitating forms include:

- M.S./M.F. Guiding Committee Form
- M.S./M.F. Oral Exam Committee Form
- Ph.D. Guiding Committee Form
- Ph.D. Oral Qualifying Exam Committee Form
- Program Forms (M.S. and Ph.D.)
- Progress in Candidacy in the Doctoral Program Form
- Change in Committee and Dissertation Title Form

7.5 Master's Degree Programs

7.5.1 M.S. in ESPM *(For further details see the Policy Statement on the Degree of Master of Science, Appendix I)*

Two types of programs lead to the M.S. degree in ESPM. **Plan I** requires course work and a thesis, and **Plan II** requires course work and an oral examination. All entering students are considered to be Plan I, thesis, unless they notify the Graduate Student Services Office otherwise. Notification should be done during the first semester by checking the appropriate box (Plan I or Plan II) on the M.S. Guiding Committee Form. All ESPM master's students are required to enroll in ESPM 201A during their first fall semester.

a. Guiding Committee

During the first semester in the program and prior to the Tele-BEARS advising period for the following semester (approximately the eighth week of the semester) the student must meet with the graduate advisor to appoint a two-person guiding committee, which will consist of the student's guiding professor and one other member of the program faculty. This committee will meet to plan course work, which will then be recorded on the program form in the student's file. Any changes to this program must be approved by the guiding professor and the advisor. *All courses designated by the guiding committee as a **required** part of*

a student's program must be taken for a letter grade unless offered on a Satisfactory/Unsatisfactory only basis.

It is essential that the guiding committee be identified by the end of the first semester in the program. Graduate advisors will not give advisor code numbers to students without guiding committees, which means that these students will not be able to register for the next semester's classes. Failure to register in a timely way jeopardizes any funding—GSI, GSR, or fellowship—a student may have.

b. Advancement to Candidacy

Before the end of the fourth week of the semester in which the degree is to be awarded, the Master's student must make formal application for advancement to candidacy.

Plan I (thesis), the student must submit a application for Candidacy for the Master, as well as a departmental advancement to candidacy form. These are two separate applications. The student must identify their thesis committee, and get the signatures of the chair of their committee and the Head Graduate Advisor.

Plan II (comprehensive exam), the student must submit a departmental advancement to candidacy form that list all courses to complete the degree, signed by the students' graduate advisor, before a student may take the oral examination

The signed form should be submitted to the Graduate Student Services staff, who will review the form for course requirements, and forward on to Graduate Division for processing. Once processed by the Graduate Division, both the student and the department are notified of the students' advancement. If the student is not eligible for advancement, the department and the student will be notified and corrective measures can be taken to correct the application for re-submission.

The Graduate Division has very specific unit requirements that master's students should be aware of when they start their program. Master's Plan I (thesis option) students must list a minimum of 20 units of course work completed for their master's program; Master's Plan II (oral examination option) must show a minimum of 24 units for their master's program. For these units the following rules apply:

- At least 8 of the 20 or 12 of the 24 units must be from courses in the 200 series in the student's major subject;
- For either MS I or MS II students, a maximum of six units of 299 (individual research) may be used on the advancement to candidacy form to satisfy this requirement;
- A maximum of $\frac{1}{3}$ of the total units in courses numbered 100–298 on a student's transcript may be taken on an ungraded (S/U) basis. There is no limit on S/U units numbered 299 or higher.

To file an Advancement to Candidacy form:

- a. Obtain the forms from Graduate Student Services,
- b. Complete the form listing program course work as indicated,
- c. If in Plan I, list the members of the thesis committee and the proposed thesis title, and obtain the signature of the chair of the committee. If Plan II, obtain the signature of your Graduate Advisor
- d. Return the form to Graduate Student Services. They will obtain the signature of the Head Graduate Advisor and submit the form to the Graduate Division for approval.

c. Oral Examination

The comprehensive oral examination for the M.S. Plan II is conducted by a 3-member committee approved by the graduate advisor upon consultation with the guiding professor and the student. The chair of the committee must be a faculty member in ESPM. Typically one member of this committee is from outside ESPM. The exam, usually two hours long, emphasizes the student's program, but the student must also demonstrate an understanding of broader issues related to the program. The exam may not take place until the student has been formally advanced to candidacy (see above). To schedule an examination the following steps should be taken:

- a. Obtain an oral examination form from Graduate Student Services Office
- b. List the approved committee on the form, with areas of responsibility
- c. Obtain the signature of your graduate advisor
- d. Contact the committee members to schedule the examination, and indicate the day and time on the form
- e. Submit the form to Graduate Student Services

The Graduate Student Service Officer will schedule a room and send a confirmation memo to the student and the examining committee. During the exam, a notice will be posted on the exam room door informing others that an exam is in progress, to prevent interruptions.

d. Thesis

Before starting thesis research the student must have a research plan approved by the guiding professor and the graduate advisor.

Plan I students will have a 3-member committee approved by the graduate advisor upon consultation with the guiding professor and the student at the time the student advances to candidacy (see above). Final approval of the thesis committee rests with the Dean of the Graduate Division. The Chair of the 3-member thesis committee must be a member of the ESPM faculty and of the Berkeley Academic Senate, and is normally the guiding professor. It is recommended that one member should be from outside the department faculty.

A booklet of guidelines and instructions on the preparation of the thesis, and a schedule of filing dates are available from the Graduate Degrees unit of the Graduate Division in room 318 Sproul or at the following websites: <http://www.grad.berkeley.edu/current/index.shtml> and http://grad.berkeley.edu/policies/degree_filing_deadlines.shtml, respectively. The final draft of the thesis should be submitted to the committee for final approval approximately one month before the end of the semester. Program policy for filing a thesis is as follows:

- a. One copy containing the signed title page should be given to the guiding professor and all other committee members unless they specifically decline a copy.
- b. File one copy with signed title page with the Bioscience and Natural Resources Library.
- c. File required number of copies with the Graduate Division as indicated in Graduate Division instructions located at <http://www.grad.berkeley.edu/current/index.shtml>.

7.5.2 Master of Forestry

The Master of Forestry degree is a professional degree representing completion of academic preparation for a professional career in forestry. Class work, a professional paper, and an oral examination are required. Administrative details are similar to that of the M.S. II program (see above). Students in the Master of Forestry should see the program's advisor, Kevin O'Hara, regarding all program requirements. Basic information can be found at: http://espm.berkeley.edu/gradprograms/grad_programs_mf.php.

7.5.3 Master of Science in Range Management *(For further details see the Policy Statement on the Degree of Master of Science, Appendix IA)*

Range Management students should see the program's head graduate advisor, James Bartolome, for information on all program requirements. Graduate students in Range Management are not required to

enroll in ESPM 201A. Basic information can be found at:

http://espm.berkeley.edu/gradprograms/grad_programs_msr.php.

7.6 Transferring from a master's program to the Ph.D. program

Transfer from an ESPM or Range Management M.S. program, or the M.F. program, to the Ph.D. program is not automatic. Transfer students are considered in comparison with all other Ph.D. program applicants in an internal ESPM admissions process. Students wishing to apply for transfer to the Ph.D. program must submit their documentation no later than the regular ESPM graduate admissions deadline (see this website for the current due date: http://espm.berkeley.edu/gradprograms/grad_programs_admissions.php).

Students who wish to apply as a transfer student must complete a change of degree goal form available from the Graduate Student Service Office in 133 Mulford. This form is formally called the Graduate Petition for Change of Major or Degree Goal. This form should be submitted to the Graduate Student Service Office, after submission of the University Graduate Admission Application. Students must submit the same documentation that prospective graduate students must file when submitting an application to the Department (e.g. three letters of recommendation of which one must be a statement of acceptance from the faculty member who will act as the student's guiding professor; copies of your transcripts from all secondary schools that you have attended). All documentation, except the GRE scores, must be submitted via the electronic University Graduate Admission Application. GRE scores can be retrieved from your departmental file. Once all the materials have been received, your completed application will be reviewed along with all other applicants to the program for that admission cycle. The student will be notified of the admission committee's decision around the same time that all other applicants to the program are notified. All students who have previously enrolled in a graduate program at Berkeley are considered transfer students for the purpose of gaining admission into the program.

Students who are in a master's program in ESPM may apply to add or change to the Ph.D. program. This choice is indicated on the change of degree goal form. If a student *adds* the Ph.D., the M.S. must be completed by the start of the second semester after the student begins the Ph.D. program. If a student *changes to* the Ph.D., there is no requirement to complete the M.S. unless specifically indicated by the admissions committee. Whether you change or add, all students must go through the entire application and transfer process described above.

If you are considering transferring from a master's program in ESPM to the Ph.D. program, consult with the ESPM Graduate Student Services Officer and your guiding professor.

The approval of transfer is valid only for the following academic year for which you have applied to.

7.7 The Ph.D. Program *(For further details see the Policy Statement on the Ph.D. Degree, Appendix II)*

The program leading to the Ph.D. in ESPM consists of four interrelated components: disciplinary emphasis, an area of specialization, research methods, and breadth requirement. Within this framework a program of course work is developed to meet the needs and interests of the student and to provide preparation for the qualifying examination and the research program.

7.7.1 Guiding Committee

Within the first semester of the student's residence and prior to the Tele-BEARS advising period for the following semester, all Ph.D. students must establish a three-person (fourth person optional) guiding committee that will establish a program of course work and guide the preparation for the oral qualifying exam. The guiding professor will help identify the two or three more faculty members whose expertise and areas of interest are most compatible with those of the student. Guiding committees can be changed if needed. ESPM 201A-C-S and any other course work required by the committee must have been taken, or be in progress, before the oral qualifying exam may be taken. The program is to be recorded on the student's program form and may be changed only with the approval of the guiding committee. *All courses designated by the guiding committee as fulfilling **requirements** of a student's program must be taken for a letter grade unless offered on a satisfactory/unsatisfactory only basis.*

To establish a guiding committee:

- a. Obtain a Ph.D. guiding committee form from the Graduate Student Service Office,
- b. Meet with your guiding professor and graduate advisor to choose a committee, which must be formally approved by your graduate advisor,
- c. Contact the members of the committee to establish a day and time when they can meet,
- d. Complete the form, obtaining your graduate advisor's signature, and submit to the Graduate Student Service Office.

Students should meet with their guiding committee members at least once a year so that progress in the program can be monitored. *The guiding professor should initial the student's program form once a year, and the graduate advisor should initial it each semester at Tele-BEARS advising time.* The guiding committee can be very helpful in planning a program and finding out about course options to help prepare for the dissertation. The committee extends the diversity of knowledge available to the student and can help make connections across campus.

It is essential that the guiding committee be identified by the end of the first semester in the program. Graduate advisors will not give advisor code numbers to students without guiding committees, which means that these students will not be able to register for the next semester's classes. Failure to register in a timely way jeopardizes any funding—GSI, GSR, or fellowship—a student may have.

7.7.2 Ph.D. Program Form

The Ph.D. Program Form in the student's file should be filled out at guiding committee meetings. It should be viewed as an active work-in-progress, filled out in pencil with changes made as necessary. Please provide all information requested. The top of the first page has space for student information, as well as space for the committee chair (the student's guiding professor) and the graduate advisor to indicate, by initial and date, that a meeting with the student has taken place at least annually and once a semester, respectively. A list of proposed courses to meet requirements should be listed in the boxes at the bottom of the first page. The second page should show the intended program of courses by semester, any comments and, at the bottom, the graduate advisor's signature to indicate that s/he has met with the student after the first meeting of the Guiding committee. The rest of the information on this page will be filled in when the student has advanced further in the program.

7.7.3 Oral Qualifying Exam

To be eligible to take the oral qualifying exam, the candidate must 1) have completed at least two semesters in academic residence, 2) have completed course work required by the guiding committee, including ESPM 201A-C-S, the breadth requirement, and six units in the area of specialization, 3) be registered during the semester in which the exam is taken or, if taken during the winter break or summer, be registered in either the proceeding or the following semester, 4) have no less than a B average in all work undertaken in graduate study, 5) have no more than two outstanding Incomplete grades at the time of applying for the qualifying exam and, 6) have completed the foreign language requirement if one is required by the guiding committee.

The qualifying examination is conducted by a four-member committee. *At least two of the four-member exam committee must be ESPM faculty, with one of these serving as committee chairperson. At least one member of the committee must be from outside the program and be a member of the UC Berkeley Academic Senate.* If desired, upon approval of the Graduate Division, one member of the committee may be a qualified person who is not a member of the Academic Senate. The person will be considered only as an inside member of the committee. Please see the Graduate Student Services Officer on getting Graduate Division's approval on committee compositions that are not the norm. The chair of the guiding committee may not serve as a member of the qualifying exam committee, but may attend the exam as an observer. The chair of the qualifying exam committee may not serve as chair of the dissertation committee.

All candidates must specify at least three subject areas to be covered during the oral qualifying exam. The student is expected to demonstrate a broad and deep knowledge of the field in the program of study. The student should consult with the examiners in advance to be certain that there is agreement on the scope of material to be covered during the examination.

S & E division graduate students are required to submit an orals Reading List Approval form prior to taking their orals. The time line for submittal is normally 4 to 6 months depending on your orals date. The Reading List Approval form must be signed by all members of the orals committee, as well as the Graduate Advisor and submitted to the student GPC divisional representative before the deadline date listed on the approval form. This reading list should cover the field of examination as a whole, and include major theoretical approaches. The list should not simply be a subset of the field that is narrowly tailored to the student's planned research.

Approximately two weeks before the qualifying exam, students taking their exams should distribute to the qualifying exam committee members a three-page prospectus/outline describing the proposed dissertation research project. During the first part of the qualifying exam (approximately 30 minutes) the student will present and discuss the proposal.

The following steps should be taken to appoint the qualifying examination committee:

- a. Obtain an oral examination form from the Graduate Student Service Office,
- b. List the committee on the form with areas of responsibility and email address,
- c. Obtain the approval signature of the graduate advisor,
- d. Contact the committee members to schedule the examination, and indicate the day and time on the form,
- e. Submit the form to the Graduate Student Service Office at least **four weeks** before the date of the exam.

The Graduate Student Services staff will complete the required Graduate Division application, obtain the signature of the head graduate advisor, and submit the application to the Graduate Division. They will also reserve a room and send a confirming memo to the student and the examining committee. It takes approximately three weeks for the Graduate Division to process the application and notify committee members of their appointment, so students should be sure to submit exam paper work to the Graduate Student Service Office at least that much time in advance of the proposed exam date.

In case of a partial or total failure of the exam, these Graduate Division regulations will be followed: The student may, upon recommendation of the committee, take a second and final examination. In case of a partial failure, the re-examination will be limited to those topics on which performance in the first examination was judged unsatisfactory. In either case, a minimum of three months must elapse before a second examination is given, and the committee must be the same as for the original examination. If after adequate discussion the committee cannot reach a decision on the results of the exam, each member must submit a detailed assessment of the student's performance for submission to the Administrative Committee of the Graduate Council, which will make a final decision.

7.7.4 Dissertation Committee

Before advancing to doctoral candidacy the student must select a dissertation committee. This will be made up of at least three persons, two of whom must be faculty members in the ESPM program, termed "inside members". The guiding professor serves as chair of the dissertation committee. One member of the dissertation committee must be from outside the ESPM program and be a member of the UC Berkeley Academic Senate, termed the "outside member". This person will serve as the Graduate Division's required outside member of the committee. If desired, upon approval of the Graduate Division, a fourth member of the committee may be a qualified person who is not a member of the Academic Senate. This person cannot serve as the required "outside member". Please see the Graduate Student Services Officer on getting Graduate Division's approval on committee compositions that are not the norm.

S&E has also institute a policy regarding the dissertation prospectus. In order to advance to candidacy (in addition to passing the oral examination and fulfilling other requirements for advancement to candidacy), S&E PhD candidates must also obtain written approval of their dissertation research proposal from each member of their anticipated dissertation committee. This approval must be secured within a short period of time after the orals exam, normally at a meeting of the dissertation committee, within four weeks of the exam. At the very least, the Chair of the dissertation committee and one other committee member must be present at the meeting to discuss the dissertation proposal. It is therefore advised that candidates set up this meeting of the dissertation committee at roughly the same time they set the date for their orals exam.

7.7.5 Advancement to Candidacy

Upon passing the oral qualifying exam and selecting a dissertation committee, the student will be eligible to advance to doctoral candidacy, and should apply for candidacy by the beginning of the semester following the oral qualifying exam date. These steps must be taken:

- a. Select a dissertation committee and title,
- b. Complete the Graduate Division's Application for Candidacy for the Degree of Doctor of Philosophy, paying particular attention to the protection of human subjects regulations, if applicable. The CITI form must be attached for those using human subjects and a protocol number created for vertebrate animal research.
- c. Obtain dissertation committee chair's signature
- c. Submit the application and a \$90 check, made out to the UC Regents, for the candidacy fee to Graduate Student Services.

The Graduate Student Affairs Officer will sign for the Head Graduate Advisor and forwarded to the Graduate Division for final approval.

7.7.6 Timely Progress to Doctoral Degree

Slow progress to degree is detrimental to students, and has negative repercussions on the resources available to them. Financial support and space accommodations, which have always been scarce, are spread too thinly when students do not complete their degrees within the anticipated time frame. ESPM guidelines provide that doctoral students will take their qualifying exams and advance to candidacy by the end of their second year, and will remain in active candidacy for four years following the date of advancement. Related ESPM policies are as follows:

1. Students who have not scheduled their qualifying exams by the middle of their fourth semester will be required to meet individually with the GPC by the end of that semester to describe their plans to take the exam and advance to candidacy. As long as they have concrete plans to take the exam and advance by the end of the fifth semester they will be considered to be progressing normally. A more protracted timetable will require detailed explanation and justification. As of September 2003, students with parenting demands will be granted either a one-year extension for women or a six-month extension for men (see Appendix VIII for specifics). **However, students who cannot justify a failure to schedule the qualifying exam and advance to candidacy by the end of their fifth semester will not be eligible for divisional GSR or GSI appointments, or restricted or block grant fellowship support until they have advanced to candidacy.** Individual faculty may choose to use their own money to support students temporarily ineligible for departmental support.

Each year the GPC will contact doctoral students who are in their third year of candidacy beyond the qualifying exam, reminding them that their period of candidacy has only one more year to run. The purpose is to encourage them to concentrate their efforts on finishing their dissertations.

In the student's fourth year of candidacy the head graduate advisor will notify doctoral students that, according to Graduate Division criteria, their candidacy will lapse that year. Those students will be required

to meet individually with the GPC to explain why their progress is delayed. If a student is making reasonable progress and can justify his/her timetable, the GPC will ask the Graduate Division for a one-year extension of candidacy. If the committee does not support the student's justification and completion date, candidacy will be allowed to lapse. Lapsed students are not eligible for divisional GSR or GSI appointments, or restricted or block grant fellowships. Students that are advanced to candidacy are expected to spend the majority of their time doing research on their research topic.

7.7.7 Graduate Division Review

The Graduate Division requires an annual evaluation by the dissertation committee of all students advanced to candidacy for the doctoral degree. The student must meet with at least two members of the committee once a year, normally during the fall semester. The committee must submit a written report on the student's progress on a form available from Graduate Student Services. The completed form should be returned to Graduate Student Services. The original will be kept in the student's file and a copy will be sent to the Graduate Division.

7.7.8 Filing of Dissertation

The final draft of the dissertation must be submitted for final dissertation committee approval approximately one month before the end of the semester. Graduate Division recommends the final draft be submitted to committee members at least two months in advance of filing to enable an appropriate amount of time for review. The student should obtain, from the Graduate Degrees office in 318 Sproul, the latest Graduate Division guidelines for filing the dissertation or visit <http://www.grad.berkeley.edu/current/index.shtml>. Program policy for filing dissertations copies is as follows:

- a. One copy containing the signed title page should be given to the guiding professor and all other committee members unless they specifically decline a copy,
- b. File one copy with signed title page with the Bioscience and Natural Resources Library,
- c. File required number of copies with the Graduate Division as indicated in Graduate Division instructions at <http://www.grad.berkeley.edu/current/index.shtml>.

7.7.9 Finishing Talk

Within the last two semesters before filing their dissertations, doctoral students are required to present the results of their research to an audience of their peers. During this presentation, students should discuss all or part of their dissertation research. The talk must be given on campus or nearby, and advertised within ESPM. This must be an oral presentation, not a poster presentation. The ESPM Graduate Research Symposium is an appropriate venue for most finishing talks. Some modifications or exceptions to these requirements can be given for students no longer living in the Berkeley area. Check with the Graduate Student Services Officer to make sure that the venue chosen for the presentation is approved.

7.7.10 Normative Time

Normative Time is the calendar time, in semesters, recognized by the Graduate Division as the length of time normally needed for completion of the doctoral degree. Normative time for the ESPM program has been set at ten semesters, and is calculated for each student from the first semester of enrollment as a graduate student. As of September 2003, following successful completion of the Qualifying Exams, graduate students with parenting demands will be granted an extension of up to one extra year toward Normative Time completion. Extensions for parent considerations cannot exceed two years overall, no matter the number of children involved.

At advancement to Ph.D. candidacy, the Graduate Division calculates your remaining semesters of normative time by counting the number of semesters between your first semester of enrollment as a graduate student and the semester of your advancement. That number is subtracted from ten, the total number of semesters determined as the normative time toward the Ph.D. for ESPM. The result is the REMAINING semesters you are in candidacy and eligibility for a **possible** reduction of fees: ESPM students advanced to candidacy and within their normative time (ten semesters) whom **have not held ANY academic appointments** for one or more of their normative time semesters is eligible to receive a

65% in-state fee reduction credit from the Department for the term. Effective Fall 2010, the Department of ESPM will no longer fund this program. For those students who entered the program prior to Fall 2010, funding will be based on available funds and for one term only. This is NOT an automatic payment and eligible students will need to inform the Graduate Student Services Officer of their plan to apply for these funds at the beginning of the academic year in which they become eligible.

Please note that the start of the ten semesters in normative time toward the Ph.D. begins with the first semester in ESPM, even if a student starts in a master's program. For example, a student who spent two years as a master's student and one more year in the doctoral program before advancing to candidacy would have only four—not eight— semesters' eligibility for the possible reduction in fees. If you have questions about your eligibility for the fee reduction program, please see the Graduate Student Services Officer.

7.7.11 Non-Resident Supplemental Tuition Reduction for Ph.D. Candidates

Graduate doctoral students who have been advanced to candidacy, and who pay non-resident supplemental tuition are eligible for an annual reduction of 100%, subject to the understanding that:

- a) a graduate doctoral student may receive the reduced non-resident supplemental tuition rate for a maximum of three calendar years whether registered or not; and
- b) any such student who continues to be enrolled or who re-enrolls after receiving the reduced fee for three years will be charged the full non-resident supplemental tuition rate that is in effect at the time.

This policy primarily benefits international students since domestic students are expected to establish California residency by the end of their first year of graduate studies, which almost always comes considerably before the time they advance to doctoral candidacy.

7.7.12 Lapsing of Candidacy

Lapsing is a probationary status set by the Graduate Division, usually lasting two years, for students who have not completed the final requirements for their degrees within normative time (ten semesters). After a student's candidacy has been lapsed, it may be reinstated by the Graduate Division if there is evidence that the student has renewed progress toward completing degree requirements and if previously completed requirements, such as course work and the qualifying exam, are still valid.

7.8 Ph.D. Withdrawal and Readmission

If for any reason you are not registered for one or more semesters during the course of your degree program, you must formally withdraw. In order to stop the University billing process, you should either fill for withdraw via BearFacts, or fill out the Graduate Division's withdrawal form as soon as you know you will be withdrawing, and submit it to the Graduate Student Services Office. If you're sure when you will seek readmission, you may submit the readmit form and \$90 readmission fee at the same time. In order to ensure that University paper work will be completed on time, students should apply for spring readmission by the previous August 15, and for fall readmission by the previous April 15. Graduate Student Services staff will obtain the required signature of the chair of the graduate advisors, and will submit the forms to the Graduate Division.

A Ph.D. student who has withdrawn prior to completing the oral qualifying examination will be automatically approved for readmission within a three year period (six semesters) from the date of withdrawal. A Ph.D. student who has withdrawn after successfully completing the oral qualifying examination will be automatically approved for readmission within a five year period (ten semesters) from the date of withdrawal.

If the time limit for automatic approval for readmission has been exceeded, the student is required to apply for an exception to the Graduate Programs Committee. The review may require new documentation,

including letters of recommendation and a new statement of purpose. Approval of readmission by exception may involve the completion of new program requirements.

It is important to note that while on withdrawal status a person is still considered a student for purposes of normative time requirements.

7.9 Grievances and Appeals

Students normally discuss any grievance with their guiding professor. If for any reasons this is not appropriate in a particular case, consult with the Graduate Student Services staff or the Head Graduate Advisor for further guidance.

8. MONEY

More detailed information about graduate tuition and fees can be found at the websites of the UC Berkeley Graduate Division (http://grad.berkeley.edu/admissions/cost_fees.shtml) and the Registrar's Office (<http://registrar.berkeley.edu/Default.aspx?PageID=feesched.html>).

Financial support is a major concern for most graduate students. Following is information on some of the support available from the University and the department. In addition, it is highly recommended that you talk with other students and faculty, especially your guiding professor, to find sources of support. The more you search, the better chance you have of obtaining funding. As with any problem you may have, you should discuss financial concerns with your guiding professor. Faculty members may have information about funding sources in addition to those described below. Ideally, your guiding professor should be able to work with you on to develop a tentative plan for your support throughout the period you are working on your degree. This will almost always include a lot of uncertainties, due to the unpredictability of grant acquisition and so on, but you should make an effort to find out what the possibilities will be in your lab.

8.1 ESPM Fellowships

All continuing students are encouraged to apply for departmental fellowships after their **third year and have completed the support package in their admissions package**. Every year there are students who fail to obtain support for the coming year simply because they didn't apply. Students who are admitted without a support package may apply for an ESPM fellowship any year of their program.

Merit-based fellowships are awarded to students annually by the ESPM GPC committee. The committee makes as many awards as possible each year. However, because funds are very limited, it is an unfortunate fact that sometimes well-qualified applicants do not receive fellowships. Awards are based on a combination of excellence in scholarship (a minimum of 3.5 grade point average in the last two years of undergraduate work, or in any graduate work completed), GRE scores, clarity and aptness of academic and career objectives, letters of recommendation, and fit to the particular stipulations of the fellowship. The committee ranks both entering and continuing students, and makes awards to as many of the top-ranking students as funds allow. Applicants from the alternate list receive funding if for any reason an awardee declines a fellowship offer. Awards may include all or a portion of student fees or non-resident supplemental tuition, and/or a stipend.

The Continuing Fellowship applications for 2013–14 will be available on-line in late January, with a deadline of early February. Fellowships cannot be awarded if the application form is not completed. Continuing Fellowship awards must be used within the academic year awarded.

8.2 Graduate Student Instructor (GSI) and Graduate Student Researcher (GSR)

8.2.1 Finding and Applying for GSI and GSR Positions

Students seeking GSI appointments must fill out an on-line application each semester in which they would like to teach. A list of available ESPM GSI positions and the GSI application is posted to the ESPM website <http://ourevironment.berkeley.edu/graduate-programs/funding/#gsi>) under News and Announcements and

distributed via email by the Graduate Student Services Officer. You will also receive from the Graduate Student Services Officer notices for GSI positions in other departments, such as Integrative Biology.

All students will be expected to submit an on-line application to be considered for ESPM GSI positions. Students should apply to more than one position on the application. Once the application is submitted, the Graduate Student Services Officer will approve the application. You will receive an electronic notice of acceptance of your application. The course instructors will then be able to view your application and make a final decision. Some course instructors may choose to conduct an interview prior to making a final selection. However, the course instructors **MUST** make the offer of employment via the on-line program in order for the student to be able to formally accept the offer. Verbal or email offers/acceptances will not be accepted, and hiring will be delayed. Students may also receive teaching credit through ESPM. Contact the Graduate Student Services staff for a course control number (CCN).

The hiring process is completed via the contract agreements with the UAW Local 2865, which is the union representing academic student employees (ASEs) or GSIs at the University of California. Students whose admission support package includes GSI support, and who are within their support period are given priority consideration for GSI positions. In general, there are many GSI positions either in the department or on campus. The UC/UAW contract may be found on the web at <http://hrweb.berkeley.edu/hrlabor.htm>.

Students who do not have departmental fellowship, GSR, or GSI support should contact individual faculty to inquire whether they have any GSR positions available through their extramural grants.

8.2.2 Requirements for First-time GSIs

The requirements for GSI appointments are:

- a. Every first-time GSI must attend the Orientation Conference sponsored by the GSI Teaching and Resource Center held prior to the beginning of classes. First-time international GSIs should also attend the International GSI Orientation Conference, held annually in the fall semester prior to the beginning of instruction.
- b. No later than the end of the third week of classes, every first-time GSI must successfully complete an online short course on professional ethics and standards in teaching, developed by the GSI Teaching and Resource Center. Failure to take/pass this test could result in the inability to hold future GSI positions on campus.
- c. First-time GSIs must have completed or be enrolled in ESPM 301 (Teaching in ESPM) or comparable equivalent offered by another department at the 300-level. GSIs who fail to pass the course must retake and pass the course before teaching eligibility will be reinstated.

Note that ESPM 301 is typically only taught in the fall semester. Alternative courses in other departments are available in the spring, see <http://gsi.berkeley.edu>.

8.2.3 GSI and GSR Appointments Policies and Fee Remissions

GSRs with 45-50% time appointments receive full fee remissions for the semester they are employed. GSIs with 25-50% appointments and GSRs with appointments from 25-44% receive partial fee remissions and are responsible for paying the Berkeley Campus Fee and the Class Pass Fee (the most up-to-date information on these fees is available at <http://registrar.berkeley.edu/Default.aspx?PageID=feesched.html>). However, all ESPM graduate student who GSI for ESPM, ES, and specific IB courses will have their remaining fee paid (Berkeley Campus Fee and Class Pass Fee) by the department. All GSRs in ESPM are appointed at Step IV.

All GSIs and GSRs must be registered graduate students during the term of appointment. Appointments, per semester, cannot require more than a 50%, or 20 hour, work week. Students receiving fellowships that include a stipend of \$8,300 or more for the year are limited to an annual average appointment of 25% (10 hours/ week) for the two semesters, or one semester at 50% (20 hours/week) in that academic year. All GSIs and GSRs must be registered for a minimum of 8 semester units by the end of the second week of

classes, and are expected to carry a program of 12 upper division and/or graduate units per semester unless arrangements are made to take a lighter load (see section 7.4.2, above). Course credit is available for either a GSI or GSR appointment- consult the Graduate Student Service Office about enrolling in ESPM 299 (GSR) and ESPM 300 (GSI).

The Graduate Programs Committee recommends that students not be appointed in excess of the allowed 50% time appointments as a GSR or GSI. Students on fellowship are governed by the rules of their individual fellowship.

The following ESPM policy went into effect in the fall semester of 1999:

- 1) Students in their first year of graduate study in the ESPM program *may not be* appointed in excess of 50% time.
- 2) Any student beyond the first year may seek an exception from the Graduate Student Services Officer.

It is important that students plan far enough ahead to allow the GPC adequate time to review the request for exception and respond in a timely manner. **It is always essential that any overtime appointment have the full knowledge and approval of the guiding professor.**

VERY IMPORTANT—1) If you have had a break in employment service either during the academic year or over the summer, you should contact the Human Resources unit to fill new employment paperwork. Appointments will not be official, and paychecks will not be issued, until this is done. You may want to sign up for Electronic Transfer of Funds (ETF) when you fill out your employment papers, so that your paycheck is directly deposited to your bank account on payday. ETF has proven to be the fastest and most reliable way of receiving monthly pay. Questions regarding tax refunds should be directed to the IRS, and late checks to the Payroll Office in Giannini Hall.

8.2.4 Additional Resources and Information about GSI and GSR Positions

More information regarding GSI, GSR and reader positions can be found at the Graduate Division website at <http://grad.berkeley.edu/policies/guides/category/appointments-guide/what-you-need-to-know-appts/>.

This site includes links to the most up-to-date pay rates. Note that GSI and GSR appointments have different pay scales (and different steps), and that the pay rates provided by these documents are typically annual full-time totals (i.e., for a 50% GSI appointment, take 50% of the full-time pay amount reported).

A wealth of information for GSIs seeking guidance in their training as teachers can be found at the GSI Teaching and Resource Center, <http://gsi.berkeley.edu>. This site includes a list of suitable 300-level pedagogy courses in other departments (for ESPM students needing to take the course in spring semester), information on workshops and conferences, and a teaching guide with information ranging from leading lab and discussion sections to addressing academic misconduct. Classroom observations and critiques and course improvement grants are also available through the GSI Teaching and Resource Center.

8.2.5 Reader Appointments

ESPM professors occasionally hire graduate students as readers, which are positions paid hourly wages for duties associated with undergraduate courses, such as critiquing papers and grading exams. Available reader positions are typically advertised via the ESPM graduate student email list or solicited directly by the course instructor.

8.3 University and Graduate Division Fellowships

Fellowships provided and administered by UC Berkeley's Graduate Division are listed here <http://grad.berkeley.edu/financial/deadlines.shtml>. These include fellowships open to all students in their final year, such as the Chancellor's Dissertation-Year Fellowship, and also subject-specific fellowships.

8.4 Extramural Grants and Fellowships

Students preparing extramural grant proposals whose applications require input from their division's grant administrative unit must be sure to give the staff adequate time to assemble their portion of the required information. Most extramural grants and fellowships will require processing through the Sponsored Projects Office (SPO). Graduate students should consult with their guiding professor or the Graduate Student Services Officer to determine which staff person within CNR will process the grant or fellowship application. Do not wait until just before the proposal's due date to present the grant administrative staff with an application. Because of the myriad tasks they perform for students, faculty, and administrators, our grant administrative unit requires ample warning and lead time in order to meet their various deadlines: at least several weeks before the proposal's due date.

Additional tips for funding, including lists of extramural grants and fellowships that are appropriate for ESPM students, can be found at Grad Student Central:

<http://espm.berkeley.edu/gradcentral/funding/index.php>.

8.5 Consulting

Occasionally graduate students are offered outside consulting jobs on projects related to their area of study. Before accepting such employment, students should always discuss the project with their guiding professors, in order to be certain that there is no conflict of interest in receiving funding from the University and the particular outside source in question.

8.6 Need-Based Financial Aid

The best advice concerning applying for the University's need-based financial aid is to be sure you submit all documents on time. A student who submits a late Free Application for Federal Student Aid (FAFSA) rarely receives any significant support. The second best piece of advice is to be prepared for a lengthy process. Due to the complexity of the financial aid regulations, student awards are often slow in coming and may not be correct when they finally arrive. If you are not awarded the amount to which you are entitled you should continue to pursue this with the campus Financial Aid Office in 201 Sproul Hall, phone 510-642-0485, until you are satisfied.

8.7 Filing Fee Status

Normally, students must be registered at the time they take their master's oral exam or at the time they file their master's thesis or doctoral dissertation. Under certain circumstances, however, a degree candidate need not be registered when these last requirements for the degree are completed. Instead of enrolling in classes and paying the University registration fee, the candidate may instead go on filing fee.

Filing fee is a reduced fee for graduate students' who are advanced to candidacy, are eligible to register, and who have completed all requirements for the degree except for filing the master's thesis or doctoral dissertation, or taking the final comprehensive examination. Filing fee is not a form of, nor equivalent to, registration. It is a non-registered student status. A student on filing fee may not enroll in coursework, and may only use campus facilities (such as the library, gym, or health services) unless s/he pays separately for them.

To be eligible for Filing Fee, you must be in good academic standing and have no blocks on your record which would prevent regular registration. Filing Fee applies for the length of the semester for which Filing Fee status has been approved by the Graduate Division, up to the deadline for filing for a degree in that semester. To use the Filing Fee in fall, you must have been registered in the previous spring or summer (3 units is the minimum summer enrollment). To use the Filing Fee in spring, you must have been registered in the previous fall. Students on Filing Fee may not hold a graduate student academic appointment, such as a Graduate Student Researcher (GSR) or Graduate Student Instructor (GSI). However, other non-academic titles may be used in order for a student to be paid while on Filing Fee. The deadline for applying for Filing Fee is the end of the first week of classes of the semester in which you intend to file. You will be billed for the filing fee on your CARS statement. The degree cannot be awarded until the fee is paid.

The filing fee privilege is awarded only once, so do not apply for it unless you are sure you will complete all degree requirements by the end of the semester in which the filing fee is used. If you miss your deadline you must register and pay full registration fees, *including non-resident tuition if applicable*, in order to file.

For more information and relevant Filing Fee forms, see <http://grad.berkeley.edu/policies/guides/d2-filing-fee/>.

8.8 Travel Funds for Scientific and Professional Meetings

Limited funds are available from the Graduate Division for doctoral students who have advanced to candidacy, and who are traveling to a scientific or professional meeting to present a paper. These funds are available on a one-time-only basis, more information under Conference Travel Grants at <http://grad.berkeley.edu/financial/deadlines.shtml> . In addition, the Graduate Assembly offers travel grants through a lottery process. Information can be found at <https://ga.berkeley.edu/funding/travel-grants> . ESPM also usually offers departmental support for graduate student travel to scientific and professional meetings, and the application is sent through the graduate student email list in late January.

8.9 Registering in Absentia

In Fall 2009, the Associate Dean of the Graduate Division announced a new *in absentia* registration status policy for academic and professional graduate students undertaking research and coursework related to their degree programs outside of California. Students registered *in absentia* will only be assessed full health insurance fees and campus-based fees, 15 percent of the combined Educational and Registration fees, and full professional degree fees and non-resident tuition, if applicable.

To be eligible for *in absentia* the students research or coursework: 1) must be of a nature that makes it necessary to be completed outside of California for at least one full semester; 2) must be directly related to the student's degree program as evidenced by faculty approval; 3) must involve only indirect supervision appropriate to evaluating the student's academic progress and performance from UC faculty during the *in absentia* period; 4) must involve no significant studying or in-person collaboration with UC faculty during the *in absentia* period.

Students on *in absentia* registration must be enrolled full-time (12 units) in regular UC units, e.g. research units. Doctoral students must be advanced to candidacy by the time *in absentia* begins. Master's only and graduate professional students (e.g., in O.D., J.S.D., or J.D. programs) must have completed at least one year of course work by the time *in absentia* begins and may only use *in absentia* for a maximum of two semesters. Students in self-supporting programs are NOT eligible for *in absentia* registration.

Students may hold University fellowships and GSR appointments, but may not hold GSI, AI-GS, Reader, or Tutor appointments during the *in absentia* period. *In absentia* registration replaces leaves for research purposes taken outside the state of California.

Applications are due by August 10 for the fall semester and January 10 for the spring semester. Departments may set earlier deadlines. Additional details and the form can be found at <http://www.grad.berkeley.edu/policies/forms.shtml>.

9. GRADUATE DIVISION REGULATIONS

Graduate Division regulations are numerous and often confusing. A copy of the Graduate Advisor's Handbook detailing these regulations is available for your perusal in the Student Services Office and is also accessible at: <http://grad.berkeley.edu/policies/guides/category/ggp/>.

10. ESPM GUIDELINES ON COLLABORATIVE AUTHORSHIP

Faculty-Student: Once a student agrees to work with a faculty mentor, either in a paid or non-paid capacity, the faculty mentor must outline his/her expectations about publication of work, authorship credit, and

authorship order. We suggest that this be done in writing whenever possible and that a copy be kept in the student file in the GSSO. The initial statement should be open for discussion and negotiation at any time. Both students and faculty mentors should feel free to refuse to collaborate if they do not reach agreement on principles of authorship credit.

As the research progresses, considerations about authorship may not remain static. The parties should re-open the discussions of authorship whenever the nature of the working collaboration changes and modify the original statement on file.

In the absence of an instructor's stated policy on this subject, the GPC will use the Ecological Society of America (ESA) guidelines as a default reference when asked to resolve a conflict or misunderstanding. Whenever a faculty member has a stated policy, it will take precedence over the ESA guidelines. These guidelines, published in an article the October, 1996, issue of the *Bulletin of the Ecological Society of America*, may be found in Appendix VII of this handbook.

Any student who feels that the authorship arrangements are unclear or unfair should immediately raise the issue with his or her faculty mentor. If the disagreement is not resolved satisfactorily, an appeal may be made to the chair of the graduate advisors, who will convene the Graduate Program Committee of ESPM to hear the appeal and attempt to resolve it informally. If resolution is not possible at this level, the Graduate Appeals Procedure approved by the Graduate Council may be initiated.

APPENDIX I

M.S. Policy Statement

Department of Environmental Science, Policy, and Management
University of California, Berkeley

INTRODUCTION

The Master of Science program in Environmental Science, Policy, and Management leads to an advanced degree for those students interested in a year or more of formal graduate work directed towards an academic or research specialization falling within the ESPM areas of disciplinary emphasis: Ecosystem Sciences, Organisms & Environment, and Society and Environment. The course work may stay narrowly focused, or be designed to develop an interdisciplinary program of course work that combines natural, biological, and/or social science approaches to provide new perspectives or an innovative approach to the solution of environmental problems. The disciplinary emphases of ESPM are:

Ecosystem Sciences—The study of the patterns, processes and dynamics of terrestrial ecosystems is a rapidly changing area of intellectual inquiry that is fundamental to our very concept of nature. Graduate students in the Division of Ecosystem Sciences are concerned with quantitative understanding of ecosystem properties and processes, and the controls on these features. Central to this mission is a full partnership between physical and biological scientists, leading to an integrated understanding of ecosystem composition, structure and function, and the extension of these findings in modeling and management activities. The multidisciplinary faculty of Ecosystem Sciences conducts vigorous research related to the following important ecosystem components: soils, water, atmosphere, plants, fungi, and animals. They develop and apply knowledge from chemistry, ecology, evolution, genetics, mathematics, modeling, physics and statistics to manage atmospheres, biological diversity, forests, grasslands, soils, and wildlife. The scales of interest, both temporal and spatial, vary greatly among the faculty, leading to a rich academic setting for graduate students interested in ecological and earth sciences properties and processes.

Organisms & Environment—Insects are one of the most successful groups of living organisms and play key roles in almost all natural resource systems. They provide unique ecosystem services, such as pollination and natural pest control, and are excellent model organisms for environmental research. The mission of the Division of Organisms & Environment is to use fundamental research on insect systems to address critical environmental issues and to solve vital environmental problems. Research interests in the Organisms & Environment are wide ranging, from the molecular level to whole ecosystems, providing a strong integration of biological processes and a diversity of intellectual challenges for graduate students. Systematics and biodiversity, behavior and neurobiology, and ecology and biological control are notable strengths in Organisms & Environment. Other research emphases include environmental toxicology, medical entomology, and insect-microbe interactions.

Society and Environment—Our mission is to bring social science perspectives and tools to the teaching and analysis of natural resource and environmental problems, and to develop management strategies to address these problems. The research, teaching, and extension of Society and Environment faculty and students explore how social and cultural processes and institutions influence and are influenced by natural resources and environmental phenomena. We study, teach, and work on processes, methods, and implications of formulating and applying environmental policy and management under various political-economic conditions and in a range of institutional and environmental contexts. Current topics of faculty and student interest include political ecology and economy; global environmental change and international agreements; resource-dependent communities, regions and industries; modes of international, national, and local development; resource property, jurisdiction and sovereignty; decision models and methods in ecosystem management; policies and politics concerning land, water, forest, and coastal resources; watershed and river basin regimes; environmental history and ethics; and environmental justice.

There are two types of degree options for the M.S.:

Plan I (Thesis Plan): Consists of 20 semester units of upper division and graduate courses, at least 8 of which must be in graduate-level courses (numbered 200–299) in the major subject. Preparation of the thesis represents work in addition to these minimum course requirements. A substantial part of the course work will be designed to acquire depth in knowledge relevant to the thesis.

Plan II (Non-thesis Plan): Consists of 24 semester units of upper division and graduate courses, at least 12 of which must be in graduate-level courses (numbered 200–299) in the major subject. This plan provides students with the opportunity to allocate greater time to developing knowledge by taking course work only. The Plan II program requires that students pass a comprehensive oral exam before the degree can be awarded. The examining committee should be composed of at least two (and preferably three) regular faculty members to conduct the exam, which should cover the knowledge and skills reasonably expected of a master's degree recipient in the field. The exam may be written, oral, or a combination of the two. Academic Senate regulations require that a student be advanced to candidacy before taking the exam.

In both plans, courses will be taken in the Department of Environmental Science, Policy, and Management and in other departments of the University related to the student's field of interest. Course requirements must be completed with a grade point average of at least 3.0 (B).

ADMISSION

Applicants for admission to this program must hold a Bachelor's degree from a university or college with curricula and standards equivalent to those of the University of California. The completed undergraduate program should normally be in a field relevant to the disciplinary emphasis chosen. Applicants without this background may be admitted with the understanding that their course work must compensate for deficiencies in their preparation. It is recommended that prospective applicants consult with faculty or the Graduate Student Services Office for advice on what courses would be required.

The admissions committee, not individual faculty, makes all decisions on who will be offered admission to the program. However, to be admitted to the program, each applicant must have a faculty sponsor. Therefore, it is critical that all applicants identify on their application faculty whose research and work overlap with their strengths and interests. It is recommended, but not required, that applicants attempt to make personal contact with faculty before being accepted for graduate study. *It is, however, imperative that their applications list the name/s of faculty whose work interests them.*

REQUIRED CORE COURSE

Each master's student in ESPM will be required to take one core course. ESPM 201A, Research Approaches in Environmental Science, Policy, and Management (3 units), which will be taken in the first semester. In addition to the core course, the program of study is developed by the student in consultation with his or her guiding professor and graduate advisor. Changes to the program of study must be approved by the guiding professor and the graduate advisor. All courses in a student's approved program, except for individual study courses, must be taken for a letter grade if available on that basis. Students are required to take at least two graduate level courses in the 200 series as part of their program of coursework. Courses numbered 296, 298, or 299 do not satisfy this requirement.

RESIDENCE REQUIREMENT

The minimum residence requirement is one year (two semesters). Students who enter the program with preparation other than the Bachelor's degree in a relevant field may require two years to complete the program.

THE THESIS (for M.S. PLAN I)

Before starting thesis research the student must have a research plan approved by the guiding professor and the graduate advisor. The thesis may be on any subject selected by the student with the approval of the Chair of the graduate advisors and the Graduate Division. The final form of the thesis must be approved by a committee of three members of the faculty appointed by the Graduate Division. One member will normally be from outside the departmental faculty. The thesis must be filed with the committee in final form by the dates specified by the Graduate Division (usually the last day of the semester). Ordinarily a completed first draft should be given to the committee at least four weeks prior to the final filing date. It is the responsibility of the student, in consultation with the committee Chairperson, to determine the exact schedule to be followed in completing and filing the thesis.

ORAL EXAMINATION (for M.S. PLAN II)

The candidate for the Master's Degree Plan II must successfully pass an oral examination. The examination will emphasize the student's program of graduate study but the student must also demonstrate an understanding of other principles and issues related to the study of Environmental Science, Policy, and Management. The examining committee, appointed by the graduate advisor, will consist of three faculty members, and will normally include one from a relevant department other than Environmental Science, Policy, and Management. Prior to the designation of

the examining committee the student, on the basis of consultation with the guiding professor, will submit a statement to the graduate advisor describing the scope of the student's program of study.

TRANSFERS BETWEEN PLANS I AND II

Admission to either Plan I or Plan II is determined by the individual student's objectives and proposed program. During the period of graduate study a change in the student's objective may make a transfer from one plan to the other appropriate. Such transfers are not granted automatically, but must be justified to and approved by the student's graduate advisor, who is responsible for ensuring that actual program content is appropriate to the change in plan. In the event of disagreement between the student and the graduate advisor relative to such transfers, the student may petition the Graduate Programs Committee for approval of the transfer.

APPLICATION FOR CANDIDACY

The candidate for the Master of Science degree in Environmental Science, Policy, and Management must file a formal application for candidacy with the Graduate Division within the first month of the semester in which graduation is expected. Deadline dates for filing are listed in the University calendar and in the Graduate Student Services Office. **Master's candidates should consult the Graduate Student Services Office for clarification of candidacy requirements.**

RESEARCH AND DEVELOPMENT ACTIVITIES INVOLVING HUMAN OR ANIMAL SUBJECTS

Rules governing the use of human or animal subjects apply to both master and doctoral candidates (see Appendix II, Ph.D. Research and Development Activities Involving Human or Animal Subjects).

Federal and state governments and universities have long recognized the need for oversight of research activities and proper protection of researchers and research subjects. The University of California, Berkeley, has an obligation to protect the interests and physical well-being of its students, faculty, and staff, as well as human and animal research subjects.

At Berkeley, researchers who plan to use research subjects, hazardous or controlled substances, or certain other materials or procedures must have the approval of the appropriate faculty oversight committee(s). The nine committees are:

- [Animal Care and Use Committee](#)
- [Committee for Protection of Human Subjects](#)
- [Committee on Laboratory and Environmental Biosafety](#)
- [Diving Control Board](#)
- [Hazardous Waste Management Committee](#)
- [Laboratory Operations and Safety Committee](#)
- [Laser Safety Committee Radiation Safety Committee](#)
- [Strawberry Creek Environmental Quality Committee](#)

Research oversight and compliance requirements are the same regardless of the source of funds supporting the research; however, researchers seeking external grants or contracts to fund their projects must disclose applicable oversight issues on the Proposal Review Form (PRF), the internal review form that accompanies each proposal submitted to an outside funding agency via the Sponsored Projects Office. By signing the PRF, the head of the administering department or organized research unit and the appropriate dean approve the research plans, subject to applicable reviews by oversight committees.

APPENDIX IA

M.S. Policy Statement

Range Management Interdepartmental Graduate Group
Managed in the Department of Environmental Science, Policy, and Management
University of California, Berkeley

INTRODUCTION

The Master of Science in Range Management prepares students with a bachelor's degree in resource management or related disciplines to pursue advance study of rangelands and range management. Graduate study in range management serves as the basis for a professional career in rangeland management with fields of specialization which include a focus on plant/animal interactions including livestock production systems, grassland, savanna, wetland and/or shrubland ecology and management, native plants, rangeland rehabilitation, conservation easements, wildlife habitat, water quality issues, working landscapes, and rangeland economics and policy.

Excellent laboratory and field facilities are available for student research. These include several experimental range properties and large wildland ranges accessible from Berkeley. Faculty is actively engaged in both theoretical and practical research on rangeland ecosystems.

Doctoral work in range management may be pursued by applying for transfer to the Ph.D. program in Environmental Science, Policy, and Management at the end of the M.S. program. Requirements for transfer are described in the handbook Section 7.6.

There are two types of degree options for the M.S.:

Plan I (Thesis Plan): Consists of 20 semester units of upper division and graduate courses, at least 8 of which must be in graduate-level courses (numbered 200-298) in the major subject. Preparation of the thesis represents work in addition to these minimum course requirements. A substantial part of the course work will be designed to acquire depth in knowledge relevant to the thesis.

Plan II (Non-thesis Plan): consists of 24 semester units of upper division and graduate courses, at least 12 of which must be in graduate-level courses (numbered 200-298) in the major subject. This plan provides students with the opportunity to allocate greater time to developing knowledge by taking course work only. The Plan II program requires that students pass a comprehensive oral exam before the degree can be awarded.

In both plans, course work will be taken in the Department of Environmental Science, Policy, and Management and in other departments of the University related to the student's field of interest within rangeland management.

REQUIRED CORE COURSES

In addition to the **core courses**, the program of study might include courses in resource economics, hydrology, wildlife, plant ecology, fire ecology, remote sensing, GIS, biogeochemistry, policy, soils, etc. Course requirements must be completed with a GPA of at least 3.0.

The minimum courses required for completion of the M.S. in Range Management include:

- ESPM 116B: Range Ecology, Improvements, and Management (3)
- ESPM 186: Management of Grasslands and Woodlands (4)
- ESPM 109: Range Plants (3)
- IB 102 & L: Introduction to California Plant Life (2,2)

Choice of two of the following courses:

- ESPM 268: Rangeland Ecology (2)
- ESPM 278: Rangeland Assessment (3)
- ESPM 279: Seminar on Pastoralism (3)
- ESPM 280: Seminar in Range Ecosystem Planning and Policy, Bartolome (3)

One course in western land use policy, such as:

- ESPM 252: Seminar in Forest and Wildland Resource Policy, and Analysis (3)
- CRP C253: Environmental Law and Resource Management (3)
- CRP 252: Land Use Controls (3)

- LAEP 239: Public Land and Resource Planning and Administration (4)
- Geog 203: Nature and Culture
- ESPM 280: Seminar in Range Ecosystem Planning and Policy, Huntsinger (3)

One course in statistics, such as:

- EPS C120: Analysis of Environmental Data (4)
- PH 142A-B: Introduction to Probability and Statistics in Biology and Public Health (4,4)
- PH 245: Introduction to Multivariate Statistics (4)
- ESPM C205: Quantitative Methods for Ecological and Environmental Modeling (3)
- ESPM 210: Spatial Data Analysis for Natural Resources

All Range Management students are strongly encouraged to participate in a semester or summer internship, which will provide practical field experience in range management, or work directly with a faculty member on research. The student's major professor and Range Management Advisor will work with students to set up this aspect of the program.

In addition to the core courses, the program of study is developed by the student in consultation with the Range Management Advisor and student's major professor. The program of study might include courses in resource economics, hydrology, wildlife, plant ecology, fire ecology, remote sensing, GIS, biogeochemistry, policy, soils, etc. Changes to the program of study must be approved by the major professor and graduate advisor. **All courses in a student's approved program, except for individual study courses, must be taken for a letter grade if available on that basis.** Students are required to take at least one additional graduate level course (beyond the core requirement) in the 200 series as part of their program of course work. Courses numbered 296, 298, or 299 do not satisfy this requirement. Course requirements must be completed with a grade point average of at least 3.0 (B).

All Range Management students are strongly encouraged to participate in a semester or summer internship which will provide practical field experience in range management, or work directly with a faculty member on research. The student's major professor and Range Management Advisor will work with students to set up this aspect of their program.

ADMISSION

Applicants for admission to this program must hold a Bachelor's degree from a university or college with curricula and standards equivalent to those of the University of California. The completed undergraduate program should normally be in a field relevant to the field of rangeland management. Applicants without this background may be admitted with the understanding that their course work must compensate for deficiencies in their preparation. It is recommended that prospective applicants consult with faculty or the Graduate Student Services Office for advice on what courses would be required.

The Range Management Graduate Group Steering Committee, not individual faculty, makes all decisions on who will be offered admission to the program. Students may be admitted to the Range Graduate Group without a specific faculty sponsor, but it is recommended that applicants attempt to make personal contact with faculty before coming to graduate school.

RESIDENCE REQUIREMENT

The minimum residence requirement is one year (two semesters). Students who enter the program with preparation other than the Bachelor's degree in a relevant field may require 2 or more years to complete the program.

THE THESIS (for M.S. PLAN I)

Before starting thesis research the student must have a research plan approved by the guiding professor and the graduate advisor. The thesis may be on any subject selected by the student with the approval of the Chair of the graduate advisors and the Graduate Division. The final form of the thesis must be approved by a committee of three members of the faculty appointed by the Graduate Division. One member will normally be from outside the departmental faculty. The thesis must be filed with the committee in final form by the dates specified by the Graduate Division (usually the last day of the semester). Ordinarily a completed first draft should be given to the committee at least four weeks prior to the final filing date. It is the responsibility of the student, in consultation with the committee Chairperson, to determine the exact schedule to be followed in completing and filing the thesis.

ORAL EXAMINATION (for M.S. PLAN II)

The candidate for the Master's Degree Plan II must successfully pass an oral examination. The examination will emphasize the student's program of graduate study but the student must also demonstrate an understanding of other principles and issues related to the study of Range Management. The examining committee, appointed by the

graduate advisor, will consist of three faculty members, and will normally include one from a relevant department other than Environmental Science, Policy, and Management. Prior to the designation of the examining committee the student, on the basis of consultation with the guiding professor, will submit a statement to the graduate advisor describing the scope of the student's program of study. For answers to commonly asked questions regarding orals, see Appendix X for the "Top Ten Myths about the ESPM Qualifying Exam."

TRANSFERS BETWEEN PLANS I AND II

Admission to either Plan I or Plan II is determined by the individual student's objectives and proposed program. During the period of graduate study a change in the student's objective may make a transfer from one plan to the other appropriate. Such transfers are not granted automatically, but must be justified to and approved by the student's graduate advisor, who is responsible for ensuring that actual program content is appropriate to the change in plan. In the event of disagreement between the student and the graduate advisor relative to such transfers, the student may petition the Graduate Programs Committee for approval of the transfer.

APPLICATION FOR CANDIDACY

The candidate for the Master of Science degree in Range Management must file a formal application for candidacy with the Graduate Division within the first month of the semester in which graduation is expected. Deadline dates for filing are listed in the University calendar and in the Graduate Student Services Office. **Master's candidates should consult the Graduate Student Services Office for clarification of candidacy requirements.**

RESEARCH AND DEVELOPMENT ACTIVITIES INVOLVING HUMAN OR ANIMAL SUBJECTS

Rules governing the use of human or animal subjects apply to both master and doctoral candidates (see Appendix II, Ph.D. Research and Development Activities Involving Human or Animal Subjects).

Federal and state governments and universities have long recognized the need for oversight of research activities and proper protection of researchers and research subjects. The University of California, Berkeley, has an obligation to protect the interests and physical well-being of its students, faculty, and staff, as well as human and animal research subjects.

At Berkeley, researchers who plan to use research subjects, hazardous or controlled substances, or certain other materials or procedures must have the approval of the appropriate faculty oversight committee(s). The eight committees are:

- [Animal Care and Use Committee](#)
- [Committee for Protection of Human Subjects](#)
- [Committee on Laboratory and Environmental Biosafety](#)
- [Diving Control Board](#)
- [Hazardous Waste Management Committee](#)
- [Laboratory Operations and Safety Committee](#)
- [Laser Safety Committee Radiation Safety Committee](#)
- [Strawberry Creek Environmental Quality Committee](#)

Research oversight and compliance requirements are the same regardless of the source of funds supporting the research; however, researchers seeking external grants or contracts to fund their projects must disclose applicable oversight issues on the Proposal Review Form (PRF), the internal review form that accompanies each proposal submitted to an outside funding agency via the Sponsored Projects Office. By signing the PRF, the head of the administering department or organized research unit and the appropriate dean approve the research plans, subject to applicable reviews by oversight committees.

APPENDIX II

Ph.D. Policy Statement

Department of Environmental Science, Policy, and Management
University of California, Berkeley

SCOPE OF THE FIELD

The degree program is based to a large extent on the need to effectively address current and future anthropogenic environmental problems which have a basis in the biological, physical, and social sciences, and have major social, political, and economic impact. Two general kinds of education are needed to produce people qualified to address these hybrid problems: 1) broadly based interdisciplinary education, and 2) disciplinary education in relevant fields supplemented with exposure to cross-disciplinary communication and problem solving. The ESPM program is designed to offer both types of education.

Interest in environmental problems has resulted in a dramatic recent increase in undergraduate and graduate programs dealing with various aspects of environmental science. Our program integrates the biological, social, and physical sciences to provide advanced education in basic and applied environmental sciences, develop critical analytical abilities, and foster the capacity to conduct research into the structure and function of ecosystems at molecular through global scales and their interlinked human social systems.

OBJECTIVE OF PROGRAM

The goal of the program is to provide both a strong disciplinary education and broadly based experience in cross-disciplinary communication and problem solving. In order to achieve this, the program leading to the Ph.D. in Environmental Science, Policy, and Management will require that a student complete three core courses, and additional course work in the following four broad areas described on page 2: Disciplinary Emphasis, Area of Specialization, Research Methods, and Professional Synthesis. The graduate advisor and a Guiding committee, chosen in consultation with the student and approved by the Graduate advisor, will be responsible for designing a program that fulfills the program requirements and meets the student's needs. This program structure provides the student with flexibility for interdisciplinary interaction within the graduate program, while ensuring at least a minimum level of cross-disciplinary competence and understanding.

ADMISSION TO THE PROGRAM

Applicants for admission to this program must hold a Bachelor's degree from a university or college with curricula and standards equivalent to those of the University of California. The completed undergraduate program should normally be in a field relevant to the disciplinary emphasis chosen. Applicants without this background may be admitted with the understanding that their course work must compensate for deficiencies in their preparation. It is recommended that prospective applicants consult with faculty or the Graduate Student Services Office for advice on what courses would be required.

The admissions committee, not individual faculty, makes all decisions on who will be offered admission to the program. However, to be admitted to the program, each applicant must have a faculty sponsor. Therefore, it is critical that all applicants identify on their application faculty whose research and work overlap with their strengths and interests. It is recommended, but not required, that applicants attempt to make personal contact with faculty before being accepted for graduate study. *It is, however, imperative that their applications list the name/s of faculty whose work interests them.*

RESIDENCE REQUIREMENT AND LENGTH OF PROGRAM

The minimum residence requirement for the Ph.D. is four semesters. Within the broad framework described below, a course program is designed to meet the needs and interests of the individual student and to provide preparation for the Oral Qualifying Examination, the dissertation research, and ultimately a productive research career. Students who are well-prepared and able to devote full time to their studies will normally be able to complete the program within a four to five year period, with at least two years usually devoted to course work, and two or three years to the research problem and dissertation preparation.

PROGRAM OF STUDY

Four Fields of Emphasis

Students will be required to demonstrate competence in the four fields of emphasis (a-d) defined below. Specific course work within each field will be chosen by the Guiding committee in conjunction with the student and approved by the Graduate advisor. The four fields provide flexibility within a clear program structure.

a. Disciplinary Emphasis. The disciplinary emphasis is the broadest academic area encompassing the student's interests. Currently the three disciplinary emphases within the Department are Ecosystem Sciences, Organisms & Environment, and Society and Environment. The program of a student pursuing a strongly interdisciplinary program may include in-depth study of more than one of these disciplines.

Ecosystem Sciences—The study of the patterns, processes and dynamics of terrestrial ecosystems is a rapidly changing area of intellectual inquiry that is fundamental to our very concept of nature. Graduate students in the Division of Ecosystem Sciences are concerned with quantitative understanding of ecosystem properties and processes, and the controls on these features. Central to this mission is a full partnership between physical and biological scientists, leading to an integrated understanding of ecosystem composition, structure and function, and the extension of these findings in modeling and management activities. The multidisciplinary faculty of Ecosystem Sciences conducts vigorous research related to the following important ecosystem components: soils, water, atmosphere, plants, fungi, and animals. They develop and apply knowledge from chemistry, ecology, evolution, genetics, mathematics, modeling, physics and statistics to manage atmospheres, biological diversity, forests, grasslands, soils, and wildlife. The scales of interest, both temporal and spatial, vary greatly among the faculty, leading to a rich academic setting for graduate students interested in ecological and earth sciences properties and processes.

Organisms & Environment—Insects are one of the most successful groups of living organisms and play key roles in almost all natural resource systems. They provide unique ecosystem services, such as pollination and natural pest control, and are excellent model organisms for environmental research. The mission of Division of Organisms & Environment is to use fundamental research on insect systems to address critical environmental issues and to solve vital environmental problems. Research interests in the Organisms & Environment are wide ranging, from the molecular level to whole ecosystems, providing a strong integration of biological processes and a diversity of intellectual challenges for graduate students. Systematics and biodiversity, behavior and neurobiology, and ecology and biological control are notable strengths in Organisms & Environment. Other research emphases include environmental toxicology, medical entomology, and insect-microbe interactions.

Society and Environment—Our mission is to bring social science perspectives and tools to the teaching and analysis of natural resource and environmental problems, and to develop management strategies to address these problems. The research, teaching, and extension of Society and Environment faculty and students explore how social and cultural processes and institutions influence and are influenced by natural resources and environmental phenomena. We study, teach, and work on processes, methods, and implications of formulating and applying environmental policy and management under various political-economic conditions and in a range of institutional and environmental contexts. Current topics of faculty and student interest include political ecology and economy; global environmental change and international agreements; resource-dependent communities, regions and industries; modes of international, national, and local development; resource property, jurisdiction and sovereignty; decision models and methods in ecosystem management; policies and politics concerning land, water, forest, and coastal resources; watershed and river basin regimes; environmental history and ethics; and environmental justice.

b. Area of Specialization. The area of specialization is a narrower field within the context of the disciplinary emphasis. Some examples of these areas might be: Microbial Community Ecology, Ecosystem Function, American Environmental History And Policy, International Forest Management, Biogeochemistry, Mediterranean Grassland Ecosystems, Remote Sensing, and Forest Management.

c. Research Methods. Candidates for the Ph.D. must demonstrate competence in research techniques appropriate for the disciplinary emphasis and area of specialization. Preparation in this field must include experimental design, sampling design, estimation, and hypothesis testing.

d. Breadth Requirement. Each student's program must include course work addressing human and ecosystem processes, and the relationship between them. All students must complete the required core courses, ESPM 201A-C-S. In addition, while in residence, doctoral students in the natural sciences must complete one additional course in the application of social sciences to environmental problems, and those in the social sciences must complete one additional course in the biological or physical sciences. The level of the course will be determined by the Guiding committee, based on the student's background and experience. The course must be a minimum of two graduate units or three upper division undergraduate units, and must be taken for a letter grade unless it is offered on an S/U or P/F basis only.

REQUIRED CORE COURSES

Each doctoral student in ESPM will be required to take three core courses. The first required course, ESPM 201A (3 units), will be taken in the first semester. Students must either have taken or be taking ESPM 201C, the seminar entitled Environmental Forum (1 unit), by the time they take their doctoral oral qualifying examination. Students will be required to prepare short analytical papers each week based on the research presented. ESPM 201S, Environmental Science, Policy and Management Colloquium [1 unit], should be taken prior to taking the oral qualifying exam. Ph.D. students will also be required to complete a minimum of 6 units in their Area of Specialization. The guiding committee and the student's graduate advisor will approve the selection of appropriate courses to meet this requirement. These six units must be taken for a letter grade unless the courses are offered on an S/U only. Doctoral students are strongly encouraged to present the results of their research in an appropriate seminar setting in ESPM, the College of Natural Resources, or a closely related department on campus.

THE GUIDING COMMITTEE

Each student's program will be determined by a guiding committee. The guiding committee is comprised of at least three faculty members. The members of the guiding committee will represent the specific fields of emphasis for the program: the disciplinary emphasis, the area of specialization, the research methodology, and the professional synthesis. If appropriate, a fourth faculty member may be asked to serve on the committee. The chairperson of the guiding committee will be the student's major professor, whose interests relate closely to those of the student.

The guiding committee is established in the first semester of study by the graduate advisor in consultation with the student. The graduate advisor will approve and appoint the guiding committee to counsel the student throughout the period of study leading to the oral qualifying examination. The specific functions of the committee are: (a) to help define the disciplinary emphasis which will best serve the student's academic interests, (b) to review the student's program proposals, (c) to determine the foreign language proficiency required (if any), and (d) to recommend a specific academic program. The guiding committee is expected to meet annually with each doctoral student; the committee functions until the oral qualifying examination.

The guiding committee bears primary responsibility for ensuring that the specialization selected by the student is both clearly defined and in accordance with the concepts outlined under **Scope**; that the program of study provides for appropriate balance between the several fields of knowledge listed under **Program**; and that it includes appropriate depth and balance of training in research methods necessary for satisfactory understanding and conduct of research in the environmental sciences field as it relates to the student's specialization.

The student's program, bearing guiding committee approval, should be submitted to the student's graduate advisor for review before the end of the first semester in residence. Thereafter, changes in the student's program will be approved by the guiding committee and filed with the student's graduate advisor. The committee will make a formal evaluation of the student's overall progress at least annually. Unresolved differences with regard to program content or decisions to continue or withdraw will be submitted to the Head Graduate Advisor for final decision.

THE FOREIGN LANGUAGE REQUIREMENT

If knowledge of one or more foreign languages is important to the student's program, the student will be required to demonstrate an appropriate level of competence. It is the responsibility of the Guiding committee to determine the importance of such knowledge and to arrange for testing the student's proficiency, subject to approval by the Graduate advisor.

QUALIFYING EXAMINATION

Before taking the oral qualifying examination, the student must have removed any deficiencies in training and completed all course work prescribed by the guiding committee with a grade point average of at least B (3.0).

The oral qualifying examination is conducted by a four member committee appointed by the Graduate Division. The committee will consist of a member of the departmental faculty as chairperson, at least one other member of the department, and at least one faculty person who is a member of the Berkeley Academic Senate and is from a separate department in the University. The guiding professor may attend the exam, but may not serve on the committee or participate in its deliberations.

The student is expected to demonstrate a broad knowledge of the field in the program of study. Questions will probe in depth and will test the student's ability to integrate the various elements of the program of study. During the first part of the qualifying exam (limited to 30 minutes) the student will present and discuss his/her intended dissertation research project. The student will NOT be responsible to provide either food or beverage at the exam. Use of visual aids is at the discretion of the exam chair, so consult with the chair for appropriate guidelines.

In preparing for the qualifying exam the student, in collaboration with the guiding professor, will prepare a brief written prospectus/outline, approximately three pages in length, describing his or her intended dissertation research project. The outline will be distributed to the members of the qualifying exam committee approximately two weeks before the exam is to take place so that it may be reviewed by exam committee members. Selection of the research problem and formulation of the precise questions to be investigated are perhaps the most important steps of the research process. An adequate design of the study is essential prior to the collection and analysis of data. The student should approach this deliberately and with full consultation with the guiding professor/prospective Chair of the dissertation committee.

DISSERTATION PROSPECTUS/OUTLINE

A prospectus/outline should be approximately three pages in length and should include the following elements:

- a. Title
- b. Justification—the importance of the problem and reasons for its selection.
- c. Previous work and present outlook—a brief review of the current state of knowledge related to the problem.
- d. Objectives—clear, complete, and logically arranged statement of the specific objectives of the project.
- e. Procedure—a statement of the essential working plans and methods to be used in attaining each of the specific objectives.

ADVANCEMENT TO CANDIDACY

A proposed dissertation committee must be submitted for approval at the time of advancement to candidacy. Therefore, following satisfactory completion of the oral qualifying examination, the student, in consultation with the guiding professor, will select a dissertation title and identify at least two additional dissertation committee members. One of these must be a member of the Berkeley Academic Senate from outside ESPM.

In problems involving extensive field work or the growth of biological material, the student may find it advisable to begin research prior to advancement to candidacy. In this case, the student should select a tentative title and develop a prospectus at that time.

Following the successful completion of the qualifying exam the student will fill out the application for advancement to doctoral candidacy, which will be signed by the guiding professor and the Chair of the graduate advisors, and submitted to the Graduate Division by the Graduate Student Services Office. This application will include recommendations concerning the membership of the dissertation committee. A copy of the CITI approval when applicable also must be provided with the advancement form. The Graduate Division, upon review, then appoints the dissertation committee.

Students are expected to complete all work necessary for formal advancement to candidacy by three months after completion of the Qualifying Oral Examination.

THE DISSERTATION

The dissertation for the Ph.D. in ESPM is administered under Plan B of the Graduate Division. In developing the dissertation problem, the candidate must keep in mind that each member of the dissertation committee is required to make an independent evaluation of the quality and adequacy of the work. Though working most closely with the chairperson, the candidate is responsible for keeping the other members of the committee fully informed as to the nature and progress of the research. An annual written record of this consultation, signed by the student and at least two members of the dissertation committee, is required by the Graduate Division.

When a draft of the dissertation has been completed in good order, that draft should be submitted to the committee for comments and suggestions.

The final draft of the dissertation must be prepared and submitted in accordance with the instructions of the Graduate Division. The original copy, approved by the committee, must be filed with the Dean of the Graduate Division. Further information is provided on-line regarding this process at <http://www.grad.berkeley.edu/current/index.shtml>.

FINISHING TALK

Within the last two semesters before filing their dissertations, students are required to present the results of their research to an audience of their peers. During this oral presentation, students should discuss all or part of their

dissertation research. The talk must be given on campus or nearby, and advertised within ESPM. The ESPM Graduate Research Symposium is an appropriate venue for most such presentations. Some modifications or exceptions to these requirements can be given for students no longer living in the Berkeley area.

RESEARCH AND DEVELOPMENT ACTIVITIES INVOLVING HUMAN OR ANIMAL SUBJECTS

Human subjects. Students who plan research or development activities that involve human subjects must have their work reviewed and approved by the Committee for Protection of Human Subjects (CPHS) **before** they begin their research. Protocols involving human subjects must be filed, and the research must be carried out according to the Berkeley campus's "Multiple Project Assurance of Compliance with DHHS Regulations for Protection of Human Subjects."

The Graduate Division cannot accept dissertations or theses that include material obtained or produced without authorization from the CPHS. Students must submit a copy of their approval letter from the Committee for Protection of Human Subjects when they file. For more information, including a copy of the "Guidelines for the Preparation of a Protocol," call the [Committee for Protection of Human Subjects](tel:642-7461) (642-7461).

Animal subjects. Students who plan research or development activities that involve live vertebrate animals must have their work reviewed and approved by the Animal Care and Use Committee (ACUC) before they begin their research. In addition, the ACUC must be notified of any proposed plans to obtain custom antibodies from commercial sources or other laboratories. The ACUC meets monthly to review written animal use protocols for compliance with federal and campus standards. Only individuals with Principal Investigator (PI) status on the Berkeley campus may submit protocols to the ACUC. Thus, any proposed use of animals by a student must be described in an approved animal use protocol for a Berkeley PI.

The Graduate Division cannot accept dissertations or theses that include material obtained or produced without authorization from the ACUC. When they file, students must submit copies of the relevant PI's annual approval letter from the ACUC for each of the years in which the student conducted animal research. For more information, contact the ACUC by phone (642-8855) or by e-mail (acuc@uclink4.berkeley.edu). Or visit the ACUC Web site at www.acuc.berkeley.edu.

APPENDIX III**Graduate Division Offices and Resources**

The Graduate Division is responsible for monitoring progress toward higher degrees. Following is a list of Graduate Division Offices, what each administers, and its room and phone number. The mailing address for the Grad Division is 318 Sproul # 5900.

Office of the Dean and the Associate Deans

403 Sproul Hall, 510-642-5472

Warnings and disqualifications

Visiting scholar program

Graduate Admissions Unit

318 Sproul Hall, 510-642-7405 gradadm@berkeley.edu

Domestic and foreign graduate admissions

Degrees and Petitions Unit

318 Sproul Hall, 510-642-7330 degrees@berkeley.edu

Advancement to candidacy, filing fee, thesis and dissertation filing, normative time, readmission and withdrawal, cancellation of registration, change or add major, credit examination, reclassification to graduate standing, exchange programs by

Student Appointments Unit

318 Sproul Hall, 510-642-7101 gradappt@berkeley.edu

GSI and GSR appointments

Tax refunds for research assistants

Graduate Diversity Program Office of Outreach & Retention

<http://grad.berkeley.edu/diversity/diversity.shtml>

327 Sproul Hall, 510-643-6010 graddiversity@berkeley.edu

Graduate Fellowships

http://grad.berkeley.edu/financial/fellowships_office.shtml

318 Sproul Hall, 510-642-0672 gradfell@berkeley.edu

Student Families

<http://grad.berkeley.edu/life/families.shtml>

Graduate Council policy on research doctoral student parents:

http://grad.berkeley.edu/policies/memo_doctoral_parent.shtml

Other Important Offices**Disabled Students' Program**

260 César E. Chávez Student Center

Voice: 510-642-0518, TTY: 510-642-6376, FAX: 510-643-9686

<http://dsp.berkeley.edu/>

The campus offers many different resources for graduate students with disabilities. The purpose of an academic accommodation is to offer the graduate student an equal opportunity to meet the department's academic standards and requirements. The Disabled Students' Program serves graduate students with disabilities (who complete the process for establishing eligibility) by authorizing academic accommodations. Disabled Access Services (<http://access.berkeley.edu>) at 510-643-6456 or 510-643-6376 (TTY) can usually assist with accommodations to extra-curricular events. Most physical access issues are addressed in the Campus Access Guide (<http://access-guide.berkeley.edu/>). Finally, problems with accommodations may be reported to the

campus Disability Resolution Officer (<http://disabilitycompliance.berkeley.edu/disability-resolution>)
at 510-642-2795.

GSI Teaching & Resource Center

<http://gsi.berkeley.edu/>

301 Sproul Hall, 510-642-4456 gsi@berkeley.edu

GSI Training

Language Proficiency Program langpro@berkeley.edu

Graduate Unit of the Financial Aid Office

211 Sproul Hall, 510-642-6442 fao_grad@berkeley.edu

University grant-in-aid

College work-study program

National direct student loans

University loan program

California loans to assist students

Guaranteed student loans

Emergency loan program

<http://students.berkeley.edu/finaid/graduates/index.htm>

Office of Registrar

120 Sproul Hall, 510-642-5990

Late registration or enrollment

Registration

Fees

Advanced class enrollment

Transcripts

Residency reclassification

Name or address changes

<http://registrar.berkeley.edu/>

Career Center

2111 Bancroft Way, 510-642-1716

<https://career.berkeley.edu/>

Student Ombudsman Office

510-642-5754

<http://students.berkeley.edu/Ombuds/>

Campus Climate and Response Office

200 California Hall, 510-643-8499

<http://ccac.berkeley.edu/>

Ensures that the University provides a safe environment
that is free of harassment and discrimination

University Health Services

Tang Center, 2222 Bancroft Way,

510-642-2000, 510-643-1233 (TTY)

<http://uhs.berkeley.edu/>

Medical and mental health services

APPENDIX IV**Graduate Program in ESPM: Faculty Division Affiliations**

For descriptions of each academic division in ESPM, see

<http://ourenvironment.berkeley.edu/academic-divisions/>.

For faculty contact information, see http://espm.berkeley.edu/directory/dir_fac_list.php.

For faculty office hours, see http://espm.berkeley.edu/fac_officehours.php.

Ecosystem Sciences (ES)

Allen-Díaz, Barbara ⁸

Amundson, Ronald

Andersen, Gary ⁶

Baldocchi, Dennis

Banfield, Jillian

Bartolome, James ⁷

Battles, John ²

Beissinger, Steven

Biging, Gregory

Brashares, Justin

Brodie, Eoin ⁶

Bruns, Thomas ⁵

Butsic, Van ⁹

Carlson, Stephanie

Chapela, Ignacio

Dawson, Todd

Dodd, Richard

Firestone, Mary

Fung, Inez

Garbelotto, Matteo ^{6, 9}

Goldstein, Allen

Gong, Peng

Gutierrez, Andrew ⁷

Harte, John

Huntsinger, Lynn

Kelly, Nina Maggi ^{9, 10}

Khorram, Siamak

Lammers, Laura

McBride, Joe

Merenlender, Adina ^{6, 9}

Moritz, Max ⁹

O'Hara, Kevin

Pallud, Celine

Potts, Matthew

Powell, Jerry ⁷

Rhew Robert ⁵

Sauvajot, Raymond

Scott, Thomas ⁹

Silver, Whendee

Sposito, Garrison

Standiford, Richard ⁹

Stephens, Scott

Stewart, William ⁹

Suding, Katherine

Tietje, William ⁹

Wang, Ian

York, Rob ⁶

Organisms & Environment (O&E)

Almeida, Rodrigo
 Altieri, Miguel
 Casida, John ⁷
 Daane, Kent ⁹
 de Valpine, Perry
 Elias, Damian
 Fisher, Brian ⁶
 Frankie, Gordon
 Getz, Wayne
 Gillespie, Rosemary
 Griswold, Charles ⁶
 Kavanaugh, David ⁶
 Kremen, Claire
 Kubo, Isao
 Lane, Robert ⁷
 Lewis, Vernard ⁹
 Mills, Nicholas
 Milton, Katharine
 O'Grady, Patrick ⁴
 Oster, George
 Resh, Vincent
 Roderick, George ¹
 Rosenblum, Erica
 Tanouye, Mark
 Tsutsui, Neil
 Welter, Stephen
 Will, Kipling
 Wood, David ⁷

Society and Environment (S&E)

Carr, Claudia
 De Master, Kathryn
 Finney, Carolyn
 Fortmann, Louise
 Getz, Christina ⁹
 Gilless, J. Keith ¹¹
 Huntsinger, Lynn ^{5, 2}
 Iles, Alastair
 Meckling, Jonas
 Merchant, Carolyn
 Morello-Frosch, Rachel
 O'Neill, Kate
 O'Rourke, Dara
 Peluso, Nancy
 Romm, Jeffrey ⁷
 Tallbear, Kimberly
 Winickoff, David

¹ Chair of the Department² Division Chair³ Vice-Chair of Instruction⁴ Head Graduate Advisor⁵ Secondary Divisional Affiliation⁶ Adjunct Faculty⁷ Professor of the Graduate School⁸ Associate Vice President UC Agriculture and Natural Resources⁹ Cooperative Extension Specialists¹⁰ Professor in Residence¹¹ Dean of the College of Natural Resources

Appendix V

ESPM and CNR Staff Contacts

ESPM Department Services

ESPM Chair's Office

Alyssa Fong	Departmental Assistant	3-4554	145 Mulford Hall	a.fong@berkeley.edu
Chee, Carolyn	Chief Administrative Officer	2-2987	143 Mulford Hall	cjchee@berkeley.edu
Roderick, George	Department Chair	3-3788	145 Mulford Hall	earthy@berkeley.edu

ESPM Student Services

Heglar, Roxanne	Graduate Student Affairs Officer	2-6410	133 Muford Hall	rehglar@berkeley.edu
Palomino, Jenny	Graduate Student Coordinator			
Shih, Tammy	Work-Study Student		135 Mulford	espm.gsc@gmail.com
				espmgrad@berkeley.edu

ESPM Web and Communication

Van Scoy, Julie	Web and Communications	3-9755	137 Mulford Hall	julie_vanscoy@berkeley.edu
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CNR Centralized Services

CNR Facilities

Jackson, Harvey	CNR – Capital Projects & Facilities	3-2606	343 Hilgard Hall	harveyj@berkeley.edu
Gamez, Tony (keys, copy codes)	CNR – Facilities Manager	3-5252	54 Mulford Hall	gamez32@berkeley.edu

Please use the following email to contact the facilities team at cnrfa_mgmt@berkeley.edu

Campus Shared Services

CNR Human Resources/Payroll

Polk, Roxanne (GSI, GSR, Reader hiring)	CNR – Academic Affairs	664-9000 (X 3)	1608 4 th Street	rpolk@berkeley.edu
Dela Pena, Jeremy (paper paychecks only)	CNR – Payroll	664-9000	1608 4th Street	jdelapena@berkeley.edu

CNR Forms are located at the following website: www.cnr.berkeley.edu/site/hr.php

CNR Computing Services (IST)

Please use the following email or website for service requests:
CNRIT@berkeley.edu or <https://footprints.berkeley.edu>

CNR Financial Services

Please contact your guiding faculty on whom your contracts and grant staff support is for your group. The

CNR Financial Services unit is located in 234 Mulford Hall.

CNR Purchasing/Receiving & Reimbursements

Baca, Robin	CNR – Reimbursement/ Purchasing	664-946 7	1608 4 th St.	rbaca@berkeley.edu
Dyer, Lywanda	CNR – Purchasing	4-9466	1608 4 th St.	roberson@berkeley.edu
Sanchez, Jessie	CNR – Purchasing	4-6471	1608 4 th St.	Jsanchez10@berkeley.edu

CNR Purchasing Forms are located at the following website: http://nature.berkeley.edu/site/pur_rec_reim.php

Appendix VI**SAFETY AND RESPONSE PLAN SUMMARY**

ESPM

University of California, Berkeley

EMERGENCY PHONE NUMBERSFIRE - POLICE - AMBULANCE: **9-911**(from pay phones, dial **911** - no coin necessary)(from campus-only phones, dial **2-3333**)

UC POLICE

642-6760

(24-hr. service)

ENVIRONMENT, HEALTH, & SAFETY (EH&S)

642-3073

(hazardous spills, general info., etc.)

PHYSICAL PLANT (24-hr. service)

642-1023

(elevators, electricity, water, ventilation,
sewer, grounds)

PEST MANAGEMENT

642-0878

Safety and Facilities Contact InformationPlease send request for services to cnrfa_mgmt@berkeley.edu**Mulford Hall**Building Coordinator:
Copy Code DistributorTONY GAMEZ
gamez32@berkeley.edu

54 MULFORD

643-5252

Hilgard Hall

Building Coordinator:

TONY GAMEZ
gamez32@berkeley.edu

54 MULFORD

642-6700

Wellman Hall

Building Coordinator:

TONY GAMEZ
gamez32@berkeley.edu

54 MULFORD

642-5252

Giannini Hall

Building Coordinator:

TONY GAMEZ
gamez32@berkeley.edu

54 MULFORD

642-6700

EMERGENCY RESPONSE PLAN

The Emergency Response Plan (ERP) is a training tool and a reference guide for the occupants of the buildings housing ESPM offices. It presents a summary of emergency procedures and guidelines for evacuating the buildings.

All persons working in Mulford, Hilgard, Wellman, or Giannini Halls are required to read this ERP and comply with its provisions. The Emergency Response Plan can be found at the following website:

http://cnr.berkeley.edu/site/safety_facilities.php .

APPENDIX VII

EXPLICIT AUTHORSHIP

Scientific publications are the principal means to assess researchers. They are used to decide between competing researchers for grants, jobs, and promotions, especially tenure. CVs are scrutinized not only for the quantity and quality of scientific papers, but for the number of single- and first-authored papers. Although many formal aspects of the assessment of

scientific activity, such as the peer review system, have been in place for a long time, policy on authorship in scientific publications remains extremely loose, informal, and idiosyncratic. This aspect is particularly important to relations between graduate students, post-doctoral fellows, and their supervisors (Altmann 1994)

Supervisors differ widely in their policies regarding co-authorship, and in many, if not most cases, there is no stated policy. Everyone is familiar with cases in which one party has perceived (or received) an unfair deal, and resentments developed because of lack of communication (Broad and Wade 1982, Altmann 1994, 1995). Graduate student courses do not deal with this topic. At the end of the 2-6 years or more of graduate student life, many graduate students end up confused about the handling of authorship. Should their supervisors co-author their thesis publications? How many publications should be shared? What should the authorship order be?

Hunt (1991) proposed a system to decide the order of authors according to their participation in different stages of the research process. He divided research activities into different categories. Every category is weighted according to the degree of involvement, from 0 to 20-25%. Full involvement in every aspect results in a 100% score. Anyone achieving a total of 25 points in this co-authorship scoring system shares authorship, and the order is decided according to the total scores obtained. Although Hunt's scoring system was intended to rank collaboration among researchers, adaptations of his scheme could be used to clearly define the rights and obligations of graduate students and their supervisors.

The number of categories and their relative values may differ according to the discipline. Table I shows a simplification of Hunt's scheme.

I would like to suggest a two-stage process based on this system. (1) Before the student begins his or her research, both parties should write a letter of understanding describing their roles and responsibilities, including co-authorships. This pre-research agreement could follow Hunt's scheme to score the commitment of both parties, and could be reviewed periodically to refresh both parties about their commitment. (2) Once the research has ended, both parties should review the agreement to evaluate the actual involvement (and possibly to adjust the earlier score).

In some cases authorship is granted only on the basis of providing funding. While some supervisors provide funding along with intellectual support, others do not provide the latter. Although funding is no doubt a necessary condition for research, most researchers would agree that

funding alone should not guarantee co-authorship (Altmann 1994). Funding individuals as well as agencies should be recognized in the acknowledgments.

The issue of authorship is by no means trivial. Regardless of the content, a written agreement should help to clear up many issues. Individuals as well as research institutions should adopt clear policies regarding authorship (Ruth 1993). I believe that a process like the one depicted here would help to clearly define the roles, commitments, and expectations of graduate students and their supervisors, avoiding misunderstandings and resentments (Altmann 1995).

Acknowledgments

I thank Lee Gass and Rachel Holt for their comments and suggestions. Lee Gass pointed out S. Altmann's column on "Professional Ethics." Stuart Altmann promptly made his articles available. Christine Adkins provided me with 3 copies of Hunt's paper. Many graduate students shared their personal experiences.

Literature cited

- Altmann, S. 1994. The problem of multiple authorship. *Animal Behavior Society Newsletter* 39:5-6.
 . 1995. On authorship and intellectual property. *Animal Behavior Society Newsletter*.
 Broad, W., and N. Wade. 1982. *Be-trayers of the truth. Fraud and deceit in the halls of science*. Simon and Schuster, New York, New York, USA.
 Hunt, R. 1991. Trying an authorship index. *Nature* 352: 187.
 Huth, E. J. 1993. Irresponsible authorship and wasteful publication. Pages 134-137 in R. E. Bulger, E. Heitman, and S. J. Reiser, editors. *The ethical dimensions of biological sciences*. Cambridge University Press, Cambridge, UK.
Carlos Galindo-Leal Center for Conservation Biology Stanford University
 Stanford, CA 94305-5020

APPENDIX VIII

ESPM Secure Computing Guidelines

The Campus System and Network Security Office (SNS) is permitted to remove infected computers off the network until they are proven to be clean of viruses and/or worms. To ensure your computers remains on the UCB network and to comply with [UC Berkeley Minimum Security Standards](#), all ESPM lab Windows computers need keep their patches up to date and have firewalls and anti-virus software installed.

Securing your computer:

1. **One stop shop security installation** from the C@B Security section available from <http://software-central.berkeley.edu/software/36-Connecting+at+Berkeley+Security+Software>. This page includes links to download anti-virus and firewall software, configure the Windows Automatic Update Setup (sets up your Windows machine to download and install system patches and security updates automatically) and install a Microsoft Baseline Security Analyzer. You will need your CALNET ID and password to download software from software-central.

Optional but good practices:

1. **Install spyware** scanners like Adaware (<http://download.com.com/3000-2094-10045910.html?legacy=cnet>) and Spybot (<http://www.safer-networking.org/index.php?lang=en&page=download>)
2. **Beware of phishing:** <http://www.webopedia.com/TERM/p/phishing.html>, <http://antivirus.about.com/library/scams/blebayscam.htm>
3. **Turn off computer when not in use.**
4. **Back up your important data!**

Protect your Mac and OS X computer by downloading the latest version of Norton AntiVirus software from <http://software-central.berkeley.edu/>.

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