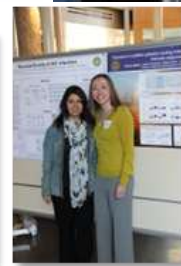
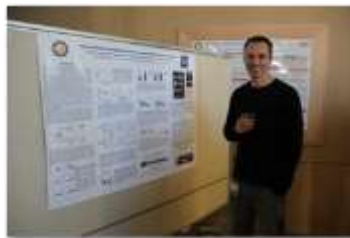
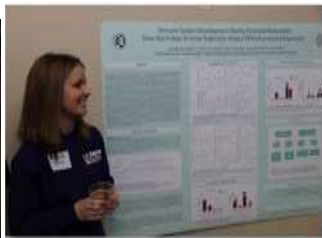


# The Graduate Group in Immunology



## STUDENT HANDBOOK 2015-2016





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Graduate Group**

2015-2016



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# CONTENTS

<b>THE OFFICE OF GRADUATE STUDIES &amp; OTHER IMPORTANT OFFICES</b>	
Graduate Studies Contacts and Website	7
The Office of the Registrar	7
Campus-wide Graduate Student Association	7
<b>THE GRADUATE GROUP IN IMMUNOLOGY - OVERVIEW</b>	
Administrative Home	8
Graduate Group Administrator	8
Website and e-mail lists	9
Chair & Graduate Advisors	9
GGI Committees	11
Graduate Group in Immunology Bylaws	12
<b>YEARLY SPECIAL EVENTS</b>	17
<b>CURRICULUM</b>	
Recommended Unit Load	17
Class Requirements and Description	17
Core Courses in Immunology	18
Selective Courses in Immunology	18
Elective Courses in Immunology	20
Courses for a Designated Emphasis	21
Satisfactory/unsatisfactory Grading Option	21
Student Progress	21
Academic Misconduct	22
<b>DEGREE PROGRAMS</b>	
<b>THE PHD PROGRAM IN IMMUNOLOGY</b>	
Overview	23
Degree Requirements	23
Time to Degree	24
The Laboratory Rotation Program	24
Finding a Major Professor	24
Outside Areas of Study	25
Focus Areas in Immunology	26

<b>The Qualifying Examination</b>	
Requirements	28
Overview	27
The Written Research Proposal	27
The QE Committee	28
The Process	28
The Outcomes	28
<b>The Dissertation Committee</b>	29
<b>The Exit Exam</b>	29
<b>The Designated Emphasis</b>	29
<b>THE DUAL-DEGREE PROGRAM (DVM OR MD/PHD) IN IMMUNOLOGY</b>	
Overview	32
Degree Requirements	32
Other Degree Requirements	32
PSTP MOU	33
<b>THE MASTERS PROGRAM IN IMMUNOLOGY</b>	
Overview	35
Plan I (Master's Degree by Thesis)	35
Plan II (Master's Degree by Comprehensive Examination)	35
Degree Requirements	35
Advancement to Candidacy	36
The Masters Thesis Committee (Plan I)	36
The Masters Comprehensive Exam (Plan II)	37
<b>ENROLLMENT AND ENROLLMENT STATUS</b>	38
Filing Fee Status	
Planned Educational Leave Program (PELP)	
What Is the Difference between PELP and Filing Fee?	
Childbearing Leave	
<b>FUNDING GRADUATE SCHOOL</b>	
UC Davis Campus-Wide Internal Fellowships	39
Dissertation Year Fellowship	40
Research Mentorship Program	40
Henry A. Jastro Graduate Research Fellowship	40
Graduate Student Travel Award	41

Graduate Group in Immunology Fellowship Support	41
FAFSA & Financial Aid	41
Work-study Support	41
<b>EXTRAMURAL FUNDING OPPORTUNITIES</b>	
Fulbright Grants for Graduate Study Abroad	42
Fulbright-Hays Doctoral Dissertation Research Abroad Program	42
T32-NIH Training Grant Positions	42
Graduate Student Researcher (GSR)	43
<b>SPECIAL OPPORTUNITIES AT UC DAVIS FOR HIGHLY QUALIFIED STUDENTS FROM UNDERREPRESENTED MINORITIES</b>	
NIH-Initiative for Maximizing Student Diversity (IMSD)	43
<b>TEACHING ASSISTANTSHIPS</b>	44
<b>MENTORING GUIDELINES</b>	44
<b>UC DAVIS GRADUATE STUDENT BILL OF RIGHTS &amp; RESPONSIBILITIES</b>	46
<b>ADDITIONAL CAMPUS RESOURCES</b>	51
Establishing California Residency	
Support for International Students	
Setting up E-Mail Accounts & IT support	
Car and Parking Passes	
<b>CAMPUS-WIDE PROGRAMS AND CENTERS</b>	52
UC Grad Student & Dependent Health Insurance (GSHIP)	
Campus Violence Prevention Program	
Campus Writing Center	
Cross Cultural Center	
Counseling Center	
Disability Resource Center	
Harassment & Discrimination Resources	
Health Insurance	
Information Technology	
Internship and Career Center	
Learning Skills Center	
Lesbian, Gay, Bisexual, Transgender	
Libraries	
Teaching Resources Center	
Transportation and Parking Services (TAPS)	
Women's Resource & Research Center	

**INFORMATION ABOUT LABORATORY AND ANIMAL USE** 53

Animal Use and Care Protocols  
Animal Handling Course  
Campus Animal Facilities  
Lab Safety Information

**Appendix 1**      **Study Plan for the PhD Program**      55

**Appendix 2**      **Study Plan for the dual MD or DVM/PhD program**      57

**Appendix 3**      **Study Plan for the Masters Plan I program**      58

## THE GRADUATE GROUP IN IMMUNOLOGY STUDENT HANDBOOK

The Graduate Group in Immunology (GGI) is one of 90 graduate programs on the UC Davis campus. This handbook will provide you with an overview of the GGI and its organization, specifics about the GGI curriculum, degree requirements for the Master of Science, Doctor of Philosophy and Dual-Degree (MD/PhD and VMD/PhD) programs, and information about funding opportunities. Please keep this handbook for future reference, and be sure to check the GGI website for updates. You should be aware that there are many campus-wide services for graduate students, some of which are listed below. For further information please check out the Office of Graduate Studies website (<https://gradstudies.ucdavis.edu/>) and the UC Davis Graduate Student Guide (<http://gradstudies.ucdavis.edu/students/handbook/>) that provide detailed information on those campus opportunities that we can only briefly refer to in this GGI student handbook. The Graduate Student Guide also provides more detailed information on UC Davis policies that affect graduate education on this campus.

## OFFICE OF GRADUATE STUDIES AND OTHER CAMPUS OFFICES

### THE OFFICE OF GRADUATE STUDIES (OGS)

You should assume that any action that might affect your enrollment status would need to be cleared by the Office of Graduate Studies, which administers graduate education on this campus. The GGI administrator (see below) can help you with specific questions. Forms can be downloaded from the OGS website.

**Office of Graduate Studies website:** [www.gradstudies.ucdavis.edu](http://www.gradstudies.ucdavis.edu)

**Graduate Studies Forms:** [www.gradstudies.ucdavis.edu/forms/](http://www.gradstudies.ucdavis.edu/forms/)

**Office of the Registrar:** <http://registrar.ucdavis.edu>

**GradLink** (Graduate Student E-Newsletter Publication):

This is a useful publication by the Office of Graduate Studies that provides information about ongoing support (such as computer software courses) and various other workshops and courses in support of graduate students (such as career development, professional writing, and career opportunities). It is a forum also to learn about graduate related issues on campus. You will receive it automatically via e-mail from the GGI Administrator once you are a registered in the program.

<http://gradstudies.ucdavis.edu/current-students/forms-information/gradlink-newsletter>

### CAMPUS-WIDE GRADUATE STUDENT ASSOCIATION

The Graduate Student Association (GSA) is the officially recognized student government for UC Davis graduate students. GSA is a vital communications network linking you and other graduate students from all corners of the campus to the UC Davis administration. GSA provides a forum for discussion of any issue affecting graduate student academics and quality of life.

For GSA to advocate effectively for your concerns, input is needed from the graduate student body. GSA provides advocacy, services and information to all graduate students, but in turn, needs your participation. Your voice counts!



Based on our size, GGI is appropriated two positions for GSA representatives. GSA General Assembly meetings are held once a month and are open to all. Graduate students are elected to the GSA Executive Council in a variety of positions that are mandated to carry out the policies and/or functions of the organization. A small portion of your registration fees is used to support the activities of GSA. In addition to the executive council, there are a number of ways students can participate in the GSA, including GSA organized events and advisory boards/ committees addressing issues relevant to graduate students. For more information call 752-6108, Room 253 South Silo. <http://gsa.ucdavis.edu>

## THE GRADUATE GROUP IN IMMUNOLOGY - OVERVIEW

The Graduate Group in Immunology (GGI) at the University of California, Davis, offers a broad, flexible program in an exciting field of biomedical science. It is a university-wide interdepartmental graduate program that comprises a group of about 50 faculty and 50 students. Participating faculty are located in various departments within the Schools of Medicine and Veterinary Medicine, the College of Agriculture, the College of Biological Sciences and the College of Engineering, as well as the Center for Comparative Medicine and the Center for Vector-borne Diseases. The GGI offers a PhD degree in Immunology. Under special circumstances, the GGI offers a Master of Science degree program to some students.

### Administrative Home

GGI is an interdisciplinary graduate program with faculty from various schools, colleges and centers across campus. GGI's administrative home is within the School of Veterinary Medicine. The GGI administrative office address is:

Graduate Group in Immunology  
School of Veterinary Medicine, PMI  
Vet Med 3A, room 5217  
University of California, Davis  
Davis, CA 95616

The GGI is responsible for your curriculum, including coursework requirements, and the constitution of the committees that judge your performance. After you join a laboratory (following the rotation program if you are a PhD student or directly upon entering if you are a Master's student), you will also have a departmental/center home. This department/center home will provide your access to mail, office space, laboratory resources, and funds for research.

### Graduate Group Administrator: Jessica Drushell

Ms. Drushell is your first point of contact for all administrative concerns and questions you may have. She works with both the Office of Graduate Studies and the department/center in which your Major Professor (research mentor) is located to ensure that all necessary paperwork is in place for payments, fellowship allocations, etc. Contact information:

Phone	(530) 754-0103
E-mail	<a href="mailto:jdrushell@ucdavis.edu">jdrushell@ucdavis.edu</a>
Address	5217 Vet Med 3A



### Website and E-mail List

Check the GGI website regularly for updates on study plans and other useful information. The address is: <http://immunology.compmed.ucdavis.edu>.

You can contact all GGI students and faculty via the following e-mail addresses:

Students:	<a href="mailto:iggstud@ucdavis.edu">iggstud@ucdavis.edu</a>
Faculty	<a href="mailto:igqfac@ucdavis.edu">igqfac@ucdavis.edu</a>

### Graduate Group Chair: Dr. Chuck Bevins

The Graduate Group Chair is chosen from among the GGI faculty members for a 3-year appointment that can be renewed. The Chair administers the graduate program and is responsible for financial and programmatic aspects of the group. You are encouraged to contact the Chair at any time with any concerns or suggestions you may have.

Phone	(530) 754-6889
e-mail:	<a href="mailto:clbevins@ucdavis.edu">clbevins@ucdavis.edu</a>
Address	5617 GBSF

### Graduate Advisors

Upon entering the program GGI students are assigned to one of the four Graduate Advisors listed below who will serve as their academic and program advisors for the duration of training. Graduate Advisors will guide in all programmatic issues regarding graduate education, such as selection of courses, identification of faculty members for the qualifying and dissertation committees, etc. Do not confuse your Graduate Adviser with your Major Professor, who will mentor your dissertation research and research-related matters. For PhD students, your Graduate Advisor will serve as your principal mentor until you have identified a Major Professor following laboratory rotations. Even after you identify a Major Professor, as a PhD student you will meet periodically with your Graduate Advisor to discuss class selections and offerings, and your academic progress (ideally, every quarter, but at least annually). For MS students, you will have similar relationship with your Graduate Advisor. For all students, your Graduate Advisor is the person who will sign official forms for submission to the Office of Graduate Studies.

<b>Nicole Baumgarth</b> (Center for Comparative Medicine) e-mail: <a href="mailto:nbaumgarth@ucdavis.edu">nbaumgarth@ucdavis.edu</a>	(530) 754-5813
<b>Paul Ashwood</b> (Med Micro and Immunology) e-mail: <a href="mailto:pashwood@ucdavis.edu">pashwood@ucdavis.edu</a>	(916) 703-0405
<b>Laurel Gershwin</b> (School of Veterinary Medicine) e-mail: <a href="mailto:lgershwin@ucdavis.edu">lgershwin@ucdavis.edu</a>	(530) 752-6643
<b>Scott Simon</b> (Biomedical Engineering) e-mail: <a href="mailto:sisimon@ucdavis.edu">sisimon@ucdavis.edu</a>	(530) 752-0299

**Your Graduate Advisor will work with you on the following:**

- Your Graduate Advisor will assist you in identifying a suitable Major Professor and reviews and forming your study plan (Appendix 1-3).
- Your Graduate Advisor periodically reviews your progress towards your degree objective, shares that information with the Executive Committee and files an annual report with the Dean of Graduate Studies concerning your progress toward the completion of your degree requirements.
- Your Graduate Advisor reviews and acts on each petition you might have to drop or add courses, or to take courses on an S/U (satisfactory/unsatisfactory) basis, and approves petitions for late adding and dropping of courses.
- For Master of Science students, your Graduate Advisor reviews and approves your petition for advancement to candidacy for the MS degree and makes recommendations for the composition of your MS Thesis (or exam) Committee.
- For PhD students, your Graduate Advisor recommends to the Dean of Graduate Studies the composition of your Qualifying Examination Committee (after consulting with you and following discussion with the GGI Executive Committee).
- For PhD students, your Graduate Advisor recommends the composition of your Dissertation Committee, after consulting with your Major Professor.
- Your Graduate Advisor is responsible for the approval (following discussion in the Executive Committee) of any Planned Educational Leave (PELP) you might request.
- Finally and importantly, your Graduate Advisor will serve as your advocate in the rare event that you have conflicts with your Major Professor (or any other faculty member). In such cases, your Graduate Advisor should be your first contact in cases where you have differences of opinions that you feel require outside advice and help. For this reason, we try to match you with a Graduate Advisor who is not a close collaborator with your Major Professor. Your Graduate Advisor will often be in an academic department different from your own. This distance permits your Advisor to more freely provide you with independent and unbiased advice and to better act as your advocate.

**GGI Committees**

Like other UCD graduate programs, the GGI is governed and administered by its faculty with input from its students. We encourage and seek student participation and have numerous opportunities for student involvement, such as Breakfast Club, Recruitment Committee, Graduate Student Association, and annual Chair-Student Town Hall meeting. Contact your fellow students, the graduate group administrator and/or the GGI Chair if you'd like to get involved!

**Executive Committee 2015/2016**

Chair: Chuck Bevins

**Appointed Faculty Members (4)**

Renee Tsois  
Stephen McSorley  
Judy Van de Water  
Colin Reardon

**Graduate Student Advisors (4)**

Nicole Baumgarth  
Scott Simon  
Paul Ashwood  
Laurel Gershwin

## **GRADUATE GROUP IN IMMUNOLOGY BYLAWS**

Revised: February 22, 2008

Graduate Council's Approval Date: May 14, 2008

### **Article I. Objective**

The Graduate Group in Immunology is organized to establish and administer a graduate program of instruction and research leading to the Master of Science and the Doctor of Philosophy degrees in immunology, in conformance with the policies and procedures of the Graduate Council and the Office of Graduate Studies. Because of the importance of immunology and immunological methods in so many areas of biomedical research and teaching, it is the main objective to offer a strong, diversified, graduate program which will foster cooperation among members of the group in the development of course offerings and in research.

### **Article II. Membership**

#### **A. Criteria for Membership in the Graduate Group**

Membership in the Group shall be limited to persons who have an interest and background in immunology, independent of department appointment, as evidenced by their publications and/or course offerings and following the Guidelines for Membership in Graduate Programs as adopted by Graduate Council.

Membership in the Graduate Group in Immunology requires an active research program in immunology and willingness to participate in the teaching and administrative responsibilities of the group. All active members are eligible to vote.

#### **B. Application for Membership**

A prospective member may self-nominate or be nominated by any member of the Group. Graduate group faculty members must be willing to contribute to the administration and teaching of the group; must maintain an active program in research in immunology suitable for training graduate students; and must also be prepared to serve on dissertation/thesis committee and qualification exams.

Election to the Group shall be by a majority vote of the Executive Committee after consultation with the faculty of the group. Faculty will be consulted via e-mail. A week for expression of opinions about the applicant will be provided, prior to the executive committee vote.

#### **C. Emeritus Status**

Emeritus faculty have full voting rights. Upon approval by the Executive Committee they can serve on qualifying committees or teach in graduate level courses.

#### **D. Review of Membership**

Membership will be reviewed every two years. A questionnaire will be sent out to faculty members asking for information on their participation during the prior two years. Members who fail to provide evidence of active participation in

graduate group teaching and/or research and/or administration of the Group, will be asked to resign.

### **E. Membership Appeal Process**

Faculty who have been denied membership or renewal of membership may appeal to the Executive Committee. The membership may use the final appeal to the Dean of Graduate Studies.

## **Article III. Administration**

The administration of the Group and its activities shall be vested in the Group Chair and the Executive Committee consisting of 4 faculty members, the student advisers and is chaired by the graduate program Chair.

## **Article IV. Graduate Group Chair**

### **A. Chair Appointment Process**

The Chair will be appointed in accordance with the Academic Personnel Manual policy UCD-245.B and the policies and procedures of the Graduate Council and the Office of Graduate Studies.

A “Nominating Committee” will be named by the Executive Committee to solicit, from the faculty and graduate students of the group, names of nominees for Graduate Group Chair. Those nominated will then be contacted regarding their willingness to serve. The names of the nominees who have indicated a willingness to serve will then be submitted to the Group’s faculty and graduate students for comments. All comments will remain confidential.

The Nominating Committee will forward two names to the Dean of Graduate Studies along with all comments received on the nominees. All comments solicited from faculty and students of the group will be treated as confidential information by the Group’s Nominating Committee and by the Office of Graduate Studies.

The Group may express a preference and, if it does, should indicate the basis for determining that preference. After interviewing the nominees the Dean of Graduate Studies will forward his/her recommendation to the Chancellor. The normal term of the Chair’s appointment is three years, however what is recommended will be based on the nominees’ willingness to serve.

### **B. Duties of the Chair:**

The Chair will a) provide overall academic leadership for the program; b) develop and implement policies for the program; c) represent the interests of the program to the campus and University administrators; d) call and preside at meetings of the Executive Committee; e) call and preside at meetings of the program; f) be responsible for coordinating all administrative matters with the Office of Graduate Studies; g) manage the budgets of the program; h) nominate graduate advisers for appointment; i) handle all faculty or student appeals and mediate when necessary.

## **Article V: Committees**

### **Executive Committee**

The Executive Committee consists of five members: The Group Chair and four elected faculty members, with at least 3 departments represented and no more than three members from a given department. The graduate advisers serve on the Committee as ex-officio voting members.

Term of membership is three years without reappointment for the four elected members. All elections thereafter shall be conducted during the annual fall meeting, with the newly elected officers assuming their duties immediately. Vacancies on the Executive Committee arising through resignation, sabbatical leaves or for other reasons will be filled by appointment by the remaining members of the Executive Committee

Duties of the Executive Committee:

- a. To conduct all business matters and to prepare the agenda for all meetings of the Group.
- b. Representation of the Group in all official matters pertaining to the Group in its conduct of business with the Office of Graduate Studies as well as business matters involving departments, and other graduate programs, including Immunology Groups on other campuses.
- c. To oversee and bring to the attention of the Group matters related to the quality and content of the program in Immunology.
- d. To recommend students to the Dean of Graduate Studies for admission into the Group.
- e. To recommend to the Dean of Graduate Studies, committees for thesis, dissertations and examinations.
- f. Membership review.

### **Committee on Educational Policy**

This committee will consist of a Chair, recommended by the Executive Committee, a minimum of two faculty members and two student members chosen by the appointed Chair. Term of appointment is two years with reappointment an option. All members have voting rights.

The duties of the committee will include review and revision of the curriculum and design of new course offerings and overseeing submission course change and course approval forms to the Office of Graduate Studies.

### **Committee for Recruitment and Professional Development**

This committee will consist of a Chair, recommended by the Executive Committee, at least two faculty members and at least three student members chosen

by the appointed Chair. Term of appointment is two years with reappointment an option. All members have voting rights.

The duties of the committee will be to organize a recruitment weekend, an orientation and a social event for incoming students, and an annual event at which continuing students present their research progress. This may correspond to the recruitment weekend. In addition, the committee will discuss issues of student morale and bring suggestions to the executive committee for strengthening the ongoing program and strengthening recruitment of students into the group.

#### **Article VI. Student Representative**

Students appointed to sub-committees are made by the chair of the relevant committee in consultation with the Chair of the Group and the student organization. Term of appointment is two years with reappointment an option. Student representation at annual meetings is by invitation only.

The Chair of any committee with student members must excuse the student representatives from meetings during discussion about other students, personnel actions or disciplinary issues relating to faculty, during rankings of existing students for funding, and for disciplinary issues related to students.

#### **Article VII. Graduate Advisers**

Graduate Advisers are appointed in compliance with the policies and procedures of the Graduate Council and the Office of Graduate Studies, after consultation with the Group Chair. Term of appointment is two-years with reappointment an option. Numbers of advisers to be appointed will depend on the number of students in the program. A minimum of 2 advisers will be appointed to achieve a ratio of no more than 15:1 students/adviser.

The Master Adviser has signature authority for admission documents. The advisers are each assigned a sub-set of students whom they meet on a regular basis to discuss their academic progress. The advisers will meet at least annually to discuss consistency of advising policies.

#### **Article VIII. Meetings**

There shall be at least one "annual" meeting of the Group in the fall quarter called by the Group Chair and advertised by e-mail at least two weeks prior to the scheduled time of the meeting. The Executive Committee may itself schedule special meetings at any time or on written notice by at least three members of the Group.

These meetings shall be conducted in accordance with parliamentary procedures. A quorum of the group membership is required for vote.

#### **Article IX. Quorum**

The Graduate Council has defined a minimum quorum. It specifies that all issues that require a vote must be:



- Voted on by 50+% of the eligible members
- Passage requires a 50+% supporting vote of the members voting.

Balloting will be conducted at a meeting of the group or via e-mail. If via e-mail, a one week time for expression of opinions about a proposed change will be allowed prior to acceptance of votes. Failure to respond within the one week period will be considered a positive vote.

#### **Article X. Amendments**

Adoption of these By-laws and amendments to the By-laws shall require that at more than 50% of the faculty member's vote. Passage of proposals requires a minimum of 50% + 1 of the members who actually vote. Balloting will be conducted at a meeting of the group or via e-mail. If via e-mail, a one week time for expression of opinions about a proposed change will be allowed prior to acceptance of votes. Failure to respond within the one week period will be considered a positive vote. Revised By-laws will be submitted to Graduate Council for review and approval.

## YEARLY SPECIAL EVENTS

Office of Graduate Studies Week of Welcome “WOW”, September

Graduate Group in Immunology Welcome BBQ, September

Graduate Group in Immunology Annual Research Retreat, February

GGI Chair-Student Town Hall Meeting, Late Summer

These recurring special events provide an opportunity for all GGI students to interact with faculty and other students, exchange ideas, socialize and have fun! We strongly encourage everybody to attend these events. Presentation of a poster during the GGI Annual Research Retreat is *mandatory* for all second year GGI students and above. Attendance at the Town Hall meeting is *mandatory* for all GGI students. You will receive e-mails notifying you of the exact date of the event.

## CURRICULUM

The degree requirements, which include curriculum requirements, can also be found at: <http://immunology.compmed.ucdavis.edu/curriculum/NewImmDegReqs2010.pdf>

### Recommended Unit Load

All GGI students must be enrolled in a minimum of 12 units per quarter to maintain full-time status. Normally, no more than 12 units of 200 level course work should be taken per quarter. You can enroll, however, in a maximum of 16 units of upper division (100 level) and graduate (200 level) courses per quarter.

### Class Requirements and Description

The didactic curriculum is divided into a number of sections: core courses, selectives, seminars (participatory and non-participatory) and electives. For each section certain minimum requirements must be fulfilled before you can advance to candidacy.

All GGI students are required to take a number of immunology classes (core classes, selectives). Additional immunology classes may be taken to fulfill the requirement for electives. The immunology classes are designed to teach a core knowledge base in immunology and enhance your ability to critically evaluate current literature. To further enhance your ability to read, comprehend and talk about current research, you must also sign-up for seminars. Finally, you are required to take classes in outside areas of study (elective). These areas depend on your interests and your particular field of study. Classes in those outside areas might pertain, but are not limited to topics in microbiology, molecular biology, neurobiology and pathology. Those classes should be chosen after you consult with

your Graduate Advisor and your Major Professor (once selected). More information on those classes may be found at relevant websites.

### **Core Courses in Immunology**

The following core courses are required for all GGI PhD students. Dual-degree students in the combined MD/PhD or DVM/PhD programs must take the same core courses, however, only one quarter of research rotation (IMM201L) is required.

IMM 201	Basic Immunology	(4 units)
IMM 201L	Laboratory Rotations	(4 units)
IMM 202L	Laboratory Rotations	(5 units)
IMM 293	Current Concepts in Immunology	(4 units)

#### **IMM 201 Basic Immunology (Fall)**

IMM 201 offers a comprehensive introduction to basic principles of immunology and a prerequisite to IMM 293. Course content includes lectures based on immunology textbooks, in addition to discussion of concepts and current literature pertinent to lecture topics. Letter grading is based on a midterm, a comprehensive final exam and discussion participation.

**Required for all first year GGI students.**

#### **IMM 201L/202L Laboratory Rotations (Fall, Winter)**

Ph.D. students enroll in this class to participate in laboratory rotations during the Fall and Winter quarters in their first year. Students complete 3 rotations of 6 weeks duration in the laboratories of GGI faculty members. Laboratories are identified in consultation with the student's Graduate Advisor. Following each rotation, students must submit a written research report and present their research findings in a short oral presentation to the class.

#### **IMM 293 Current Concepts in Immunology (Winter)**

This is an advanced level graduate course in immunology required for all GGI students. . IMM 201 is a prerequisite. Topics include: innate immune defense mechanisms, inflammation and leukocyte migration, macrophage and dendritic cell biology, T and B cell development and function, and current models of immunologic responses. The class is divided into lecture and topic discussion. For the lectures, students are required to read assigned recent literature reviews as background to obtain and comprehend up-to-date information on various aspects of both innate and adaptive immunity. In the second part of the class, assigned research papers on the lecture topics are reviewed and discussed to enhance the student's ability to design and critically evaluate experiments. Letter grading is based on 2 comprehensive take-home exams, a written evaluation of a recent research article, and participation in discussion. This course can be taken in year 1 or 2.

**Selective Courses in Immunology (6-10 units).** Three courses selected from:

- IMM 203 Cancer Immunology
- IMM 204 Topics in Innate Immunity
- IMM 294 Clinical Immunology
- IMM 297 Mucosal Immunology
- RAL 209 Current Topics in Immunology
- NUT 251 Nutrition and Immunity

Note that most of these courses are taught every other year. Be sure to inquire about which classes are being held in which years to ensure you can enroll in all classes you would like to take.

**IMM 203 Cancer Immunology (Spring, alternate years)**

This course will cover concepts in cancer biology, progression, and immune evasion. It will also cover topics such as: immune surveillance, immune effector mechanisms, and current concepts in immune therapy.

**IMM 204 Topics in Innate Immunity (Spring, alternate years)**

Covers current topics in the field of innate immunity through student seminar presentations and critical evaluation of the literature. Concepts include: pathogen recognition, intercellular communication, specialized cellular function and effector/signaling molecules.

**IMM 294 Clinical Immunology (Winter, most years)**

This is an advanced level graduate course in immunology designed for GGI student in their second year. The class focuses on various aspects of clinical immunology including tumor immunology, allergy, autoimmunity, and the immunology of transplantation. Classes are divided between lecture and topic discussion in which students review and present a clinical case to the class. There is one take-home midterm and a final exam.

**IMM 297 Mucosal Immunology (Spring, alternate years)**

This class is held in a journal club format. Expert lecturers assign recent reviews and research papers on various aspects of immunology as they pertain to immune defenses at the mucosal surfaces of the body, including respiratory tract, gastrointestinal tract, and the urogenital tract. Following a short overview lecture by faculty to provide the context of current knowledge in the field, students will be selected to participate in presenting the major findings of the paper. A final writing assignment reviews a current research paper in a News and Views format.

**RAL 209 Current Topics in Immunology: From Presentations to Grants (Winter)**

The topics will focus is on areas of immunology covered in the student's research, including current developments and various interrelationships in the field of immunology. The student will learn strategies for effective oral presentations, writing of a research paper on their work, and the basics of grant preparation. Students will learn how to use these tools for career development. This class is best taken in year 2 of study, as it can serve as a good preparation for writing the research outline for the qualifying exam. Strongly recommended for all second year GGI students.

**NUT 251 Nutrition and Immunity (Winter, alternate years)**

This course explores the mechanisms by which nutrition and diet affect the immune system, as well as resistance to infectious diseases and cancer. It also explores the impact of an immune response on metabolism, appetite, and nutritional needs. The class has both lectures and discussions.

**Seminar Courses (2-3 units per year)**

Students must enroll in one participatory and one non-participatory seminar per year until they pass their qualifying exam. Below is a list of seminars coordinated by members of the

GGI faculty. Many other seminars are available on campus. Seminars relevant to your area of research should be chosen in discussion with your Graduate Advisor and Major Professor.

IMM 296  
MMI 291  
PMI 290  
PMI 291A  
PMI 298

### **PMI 291A (IMM 291A beginning fall 2016) Seminar in Immunology (Fall)**

This course stresses student participation in presentations and discussion of topics covered in IMM201. Each week, a student will be selected to present an assigned paper relevant to the topic. A major emphasis is the depth, figure-by-figure, discussion of the paper. Experimental approach, research methodology, and statistical analysis are discussed in view of the stated conclusions and implications of the findings. Students in the class are required to participate in active class discussion. Attendance is mandatory. **Strongly recommended for first year GGI Students.**

### **IMM 296 Advanced Topics in Immunology (Fall)**

This course offers presentations by faculty on advanced topics in immunology and their research. The course outlines the research done by faculty members in GGI and thus can help 1st year students identify rotation mentors. Recent topics encompassed studies of integrins, galectins, chemokine and antigen receptors in varied research areas such as pulmonology, dermatology, autoimmune and infectious diseases. **Strongly recommended for all first year GGI students.**

### **PMI 290 CCM Seminar Series**

This seminar series, entitled "What's up at the CCM", includes seminar presentation by faculty, postdoctoral fellows and graduate students at the CCM, as well as guest speakers from across campus and campus guests. The topics span a range of research, including the fields of pathology, microbiology or immunology.

### **PMI 298 Immunology Breakfast Club (Fall, Winter, Spring)**

This is a student-run discussion group intended particularly for students before they advance to candidacy (or MS comprehensive exam). Students decide each quarter on a discussion topic in immunology of choice. Each student presents on a topic of her/his choice. Faculty may be invited to discuss particular areas of interest. Historically, the winter quarter has focused on methodology and spring quarter has focused on preparation and practice for the qualifying examination.

### **Elective Courses in Immunology (8 units)**

In addition to required immunology courses, PhD students are expected to enroll in elective courses such as statistics, scientific writing, additional immunology selectives, or other classes that provide the student with additional research perspective, tools and skill sets. Classes should be graduate level or upper division courses. Students are expected to enroll in a minimum of 8 units of electives. Classes in the outside area may be used to fulfill GGI requirements for elective courses for a maximum of 3 units. Courses should be chosen in discussion with your Graduate Advisor and Major Professor.

The requirement for electives is waived for the GGI dual-degree students.

### **Immunology Journal Club (TBD)**

This activity is not a course taken for credit. Rather, the journal club is organized by students to read and discuss significant recent publications in immunology. All GGI faculty members and students (particularly those already advanced to candidacy) are urged to attend. Faculty members identify a recent research paper for presentation. Students present the findings of the manuscript and discuss the implications of the findings. The faculty member serves as a content-expert for the discussion. The sessions sometime include alternating a "work in progress" seminar by an advanced PhD student, with the journal club presentations. The class is generally held twice per month.

### **Courses for Designated Emphasis Programs**

GGI students may participate in a Designated Emphasis program, which is an interdisciplinary focus that typically spans two or more existing Ph.D. programs. The "Designated Emphasis" is awarded in conjunction with the Ph.D. degree and is signified by a transcript designation - for example, "Ph.D. in Immunology with a Designated Emphasis in Biotechnology".

The Graduate Group in Immunology is associated with four Designated Emphasis programs:

- Biotechnology
- Biology of Vector-Borne Diseases
- Translational Research
- Animal Host-Microbe Interaction

Students in these programs must fulfill additional courses and other requirements specified by these programs before the qualifying exam can be taken. In most cases, these courses can fulfill the "elective" requirements of the GGI curriculum. For more information on the additional requirements contact those programs directly.

### **Satisfactory/unsatisfactory grading option**

The purpose of satisfactory/unsatisfactory (S/U) grading option is to allow graduate students the opportunity to explore areas unrelated to the student's academic discipline. No program core requirement may be taken S/U unless prior approval has been granted by the campus Graduate Council. Only one graded course per quarter may be taken S/U. In lower or upper division work (courses numbered 1-199) S means a grade of C- or better; in graduate work (courses numbered 200) an S means B- or better.

### **Student Progress**

Progress for each GGI student is reviewed annually by their Major Professor, their Graduate Advisor, and ultimately the Executive Committee of GGI. The review is most typically held during the spring quarter each year. To facilitate the review, each GGI student is required to complete a Student Progress Report Form, which must be signed by the Major Professor (and the dissertation/thesis committee if appropriate) and the Graduate Advisor.

If progress is deemed "marginal" or "unsatisfactory", a written notice will be sent to the Dean of Graduate Studies and a copy forwarded to the student; receipt of such notice is regarded

as being on Academic Probation. The Dean of Graduate Studies will provide notification to the student, indicating time limit and work required for completion in order to attain a "satisfactory" evaluation. If the student fails to meet the requirements specified, the student will be subject to disqualification from further graduate study in the program.

General requirement for satisfactory progress:

- Maintain a GPA of >3.2 (3.0 for the MS degree)
- Present a poster at the annual research retreat (2nd year students and above)
- Once formed, meet at least annually with your dissertation (or thesis) committee
- Make satisfactory progress in laboratory work towards your degree objective
- Provide all information and forms requested by GGI in a timely manner

## Academic Misconduct

Information for students regarding processes connected to suspected cases of academic misconduct is discussed at <http://sja.ucdavis.edu/summary-disc-proc.html>

### Required action by the faculty:

The IOR (or other faculty member) does not establish whether a case of academic misconduct has occurred. Instead, they are required to report any cases in which they *suspect* misconduct to Student Judiciary Affairs (SJA). SJA will investigate and determine whether there is evidence that identifies misconduct and will take any necessary action. The SJA-led process occurs independent of the involved faculty, and faculty do not have influence over the process. The process proceeds independent of whether the student agrees that s/he has committed academic misconduct.

Should the potential for misconduct occur close to filing a course grade, the faculty will file a "Y" for the student. The grade will be adjusted, depending on the outcome of the investigation by SJA. Should SJA identify academic misconduct at the conclusion of the inquiry process, the IOR (or faculty member) will decide whether to provide an opportunity for the student to take a make-up exam (and in which form the exam will be). The outcome of any make-up exam will be averaged with the initial grade/points the student obtained for the exam in which misconduct was identified (0%).

Here is an important excerpt from the SJA page ([sja.ucdavis.edu/summary-disc-proc.html](http://sja.ucdavis.edu/summary-disc-proc.html)):

"Whenever possible, informal procedures are used to resolve disciplinary matters. Emphasis is on education, personal growth and ethical behavior -- upholding standards of academic integrity and responsible conduct to protect the quality of education and the welfare of our UC Davis community. In the few cases in which formal fact-finding procedures are necessary, the system is designed to provide a timely, fair, and impartial hearing and resolution of the matter. A student may consult an advisor at any stage in the informal or formal process."

Other support: Student Counseling Services  
(<http://shcs.ucdavis.edu/services/counseling.html>)



## DEGREE PROGRAMS

The Graduate Group in Immunology offers three distinct degree programs: The PhD program, the dual-degree program (MD/PhD or DVM/PhD) and a Masters in Science program. Each program has specific study plans (**Appendices 2-4**) that the student must follow in order to fulfill the necessary degree requirements. Study plans are subject to change.

### The PhD Program in Immunology

#### Overview

The PhD in Immunology is awarded after completion of three phases of study: (i) course work; (ii) an oral qualifying examination, and (iii) the conduct of original and independent research of significance as is evident by the written dissertation. Apart from core, selective, and seminar courses in immunology, students will select coursework in an outside area, which together will provide them with general background, a knowledge base for the oral qualifying examination, and preparation for the research on which their dissertation is to be based. The selection of appropriate course work is made in consultation with the Academic Advisor and the Major Professor. Following laboratory rotations during the first two quarters of residence, students will identify a Major Professor and develop a research proposal.

#### Degree Requirements

GGI students are required to maintain a grade point average of at least 3.2 (4.0 scale) throughout their graduate studies. For Ph.D. students seeking an additional Designated Emphasis, all additional course requirements of that program must be met before the qualifying examination is conducted. In addition, Ph.D. students in immunology are expected to:

- Participate in the Rotation Program during the Fall and Winter quarter of year 1
- Present yearly a research poster at the Annual Graduate Group Retreat (2nd year and above).
- Participate in the events organized by the graduate group and actively engage in the various activities of the program.
- Take their qualifying examination and advance to Ph.D. candidacy in a timely manner. For most students this is usually by the end of summer of their second year in the program.
- Meet regularly, but at least once a year, with their dissertation committee following their advancement to candidacy.
- Make adequate progress in their research project.
- Take an exit exam prior to submission of their dissertation. Provide to the Final Exam Committee an oral presentation of the dissertation. The oral presentation shall be open to the campus community, while the exit examination itself shall be restricted to the members of the dissertation and final examination committee.
- Submit a dissertation to Graduate Studies in a timely manner following approval by all members of the dissertation committee. This is usually done in years 5 - 6 of residence.

## Time to Degree

The curriculum is designed to enable PhD students to complete the program within 5-6 years. The curriculum allows students to complete all necessary coursework in 5-6 quarters of study. Most PhD students advance to candidacy (i.e. take their qualifying examination) in the summer of their second year. The program then includes 3-4 years of uninterrupted time for research, which is generally sufficient to write a satisfactory dissertation and complete all degree requirements.

## GGI Study Plans

A study plan is formulated in consultation with a student's Graduate Advisory and Major Professor. The study plan depends on the degree program: PhD, Dual-degree DVM/PhD or MD/PHD, or MS programs. For an example PhD study play, see **Appendix 1**.

## The Laboratory Rotation Program

Ph.D. students will participate in a laboratory rotation program. Students will enroll in IMM201L during the fall and IMM 202L during the winter quarter of year 1 (see Appendix 1). Students will rotate with three different faculty members during the first two quarters of residence. Therefore it is not necessary for Ph.D. students to contact faculty members prior to application to the program. Should a student identify a mentor prior to matriculation, they will nonetheless enroll in IMM201L during their first two quarters of residency and rotate in 3 laboratories, *before* joining the lab of the identified mentor. Only one of the laboratories may be that of the identified mentor (Major Professor).

## Finding a Major Professor

With few exceptions, the Major Professor is the single most **important** person with whom Ph.D. students will deal with while at UC Davis. Sometimes the Major Professor is referred to as the "faculty mentor" or "research professor", because he or she is the person students will work with while conducting graduate research.

Towards the end of the rotation program, thus just prior to the end of the winter quarter of the first year, Ph.D. students identify the faculty member with whom they will conduct their dissertation research. This selection is made by joint decision of the student and faculty member, and is typically based upon the experience of the laboratory rotation. It is an important decision and the student should consult with both their graduate advisor and the Instructor on Record for IMM201L (currently Dr. Stephen McSorley and Dr. Colin Reardon) before committing to a lab. Many factors have to be weighed including such issues as personal relationship with the Major Professor, security of financial support, interest in ongoing research projects, quality of research conducted in a lab, interactions with other laboratory members. The rotation program allows the student to inquire in an informal setting about these and other issues.

Should a Ph.D. student wish to join a particular faculty member directly, exceptions can be made. This is contingent upon the applicant fulfilling all requirements for joining the Ph.D.

program as set forth by the Dean of Graduate Studies and the Graduate Group in Immunology. In addition the faculty member must state in writing to the Executive Committee of the group her/his willingness to mentor and financially support the applicant. Despite the “direct placement” the student will nonetheless rotate in at least 3 laboratories and enroll in IMM 201L / IMM 202L during the fall and winter quarters of the first year. Exceptions to this rule need to be requested in writing to the Executive Committee.

**Your Major Professor is responsible for the following:**

- Your Major Professor serves as your mentor and is your primary resource for information on research projects.
- Your Major Professor, in consultation with your Graduate Advisor, may require you to take additional courses to formulate a program best-suited to your academic research and professional needs. Any exception to the core requirements must be supported in writing by your Major Professor, in concurrence with your Graduate Advisor, and then approved by the Executive Committee of the Graduate Group in Immunology.
- Your Major Professor serves as chairperson of your PhD Dissertation or MS Thesis Committee.
- In general, even though your Major Professor plays a very important role in providing guidance to you on your research projects, he or she may not be as informed as possible of the latest academic requirements. Therefore, you should consult your Graduate Advisor on a regular basis (ideally, every quarter) and report your academic progress. Also, be sure to check with your home department for other possible sources of financial support if your Major Professor is unable to provide that information.

**Outside Area of Study**

The student will choose an outside area of study in discussion with their Major Professor and Graduate Advisor. While it can be on any topic taught at the UC Davis campus, it usually is related to the particular research area that is undertaken by the student. In order to prepare the student for the qualifying examination (QE) the student is expected to enroll in a minimum of 3 units upper division undergraduate or graduate level classes in an outside area or study. These units may be used to fulfill part of the course requirements for electives. The students will identify a faculty member (usually outside of GGI) that can examine the student in that subject area. Thus, taking a class with subject areas that cover the outside area of study is usually helpful in identifying a suitable examiner. Below is a list of some examples that GGI students have chosen in the past as outside areas for examination during the QE.

Biochemistry  
Biomedical Engineering  
Biostatistics  
Cell Biology  
Genetics

Virology  
Microbiology  
Nutrition  
Neurosciences  
“omics”  
Pathology

## Focus Areas in Immunology

In addition to general immunology, the PhD student is required to identify two sub-specialties in Immunology that s/he will defend during the qualifying examination. Below is a list of defined areas in Immunology that faculty members in GGI are actively engaged in for their research that can be chosen. Additional areas may be identified. Those should be chosen following discussion with the Graduate Advisor.

**Autoimmune Diseases:** Research being performed by Graduate Group in Immunology faculty is aimed at determining the molecular basis for several autoimmune diseases, including autism, arthritis, chronic liver disease, diabetes, kidney disease and systemic lupus erythematosus.

**Cancer Immunology:** Faculty research related to cancer ranges from basic mechanisms of carcinogenesis to targeting novel drugs to tumors using combinatorial chemistry and immunotherapy.

**Comparative Immunology:** Exploiting the presence of a School of Veterinary Medicine and one of only a handful of National Primate Research Centers, ongoing research in faculty laboratories includes comparative studies of immune responses, including allergy and infection, in humans and non-human primates, avian, bovine, equine, feline, marine mammals, and zoo animal species.

**Host-Pathogen Interactions:** A broad array of research projects explore how viral, bacterial and protozoan pathogens, interact with their hosts to cause diseases including AIDS, malaria, influenza, Lyme disease, salmonellosis and vascular disease. The nature of projects ranges from the molecular interactions underlying disease processes and host immune response regulation, to development of vaccines and diagnostics.

**Immune Signaling:** Research in this area includes studies on signaling pathways within immune cells and how they are perturbed during disease. A second area of investigation is cell-to-cell communication within the immune system. Approaches to study of these areas range from studies of molecular interactions in and between individual cells, immune regulation of inflammation to computational modeling of immune responses.

**Mucosal Immunology:** Faculty research projects cover a diverse range of topics, including defense mechanisms to maintain mucosal barrier function, reactions of the respiratory mucosa to allergens and pollutants, and how viral and bacterial pathogens subvert the defenses of the intestinal mucosa to cause disease.

**Nutritional Immunology:** Faculty research in this area includes the effects of nutrition on the immune response, how ongoing immune responses affect the host's nutritional

requirements, the effects of micronutrients such as Vitamins A and D and omega fatty acids on immunity, and characterization of food allergens causing anaphylaxis.

## The Qualifying Examination

**Requirements.** After successful completion of all required coursework for the Ph.D. (Study Plan) and the Designated Emphasis (if applicable), students advance to PhD candidacy by passing a comprehensive oral qualifying examination (QE). All PhD students must take this exam. For most students, the examination should be taken no later than the summer of the second year of residence within GGI.

**Overview.** Examination is on the student's knowledge in general immunology, two sub-specialties of immunology, as well as an outside research area chosen in discussion with the major professor. In preparation of the QE the student will be asked to name two sub-specialties in immunology (e.g. innate immunity, cellular immunity, cytokines, autoimmunity) and an outside area of research (e.g. virology, microbiology, molecular biology) in which to be examined. Usually the outside area is connected to the proposed dissertation research, but can be chosen from any discipline taught on the UC Davis campus. The student should have preparation equivalent to an upper division course in the outside area. The student's written research proposal (described below), will serve as context to initiate the QE. For the QE, the student should be prepared to demonstrate adequate background knowledge related to the proposed research and its underlying hypotheses, sound familiarity with the proposed experimental design and execution, knowledge of proposed technologies and alternative technologies, familiarity with appropriate statistical analysis of data, and adequate perspective for interpretation of the anticipated data. Examination of the student in general immunology and the three more specialized areas will ensue both in the context of the research proposal, as well as in subsequent questioning by the QE Committee.

**The Written Research Proposal.** In consultation with their major professor, the student will develop a written research proposal on their dissertation topic. The QE Committee will decline to accept proposals that fail to adhere to the following formatting guidelines.

The proposal should be approximately 5 pages, not including references (single spaced, Arial 11 point font, 1.0 inch margins) and conform to the general format for NIH research (R21) and fellowship (F32) grant applications (<http://grants.nih.gov/grants/funding/424/index.htm#inst>). The proposal should describe the student's: dissertation-specific hypotheses, topic background, rationale for experiments, research aims, experimental approaches, expected outcomes, potential problems, alternative approaches, and progress to date (if any).

The format should follow NIH guidelines and include four sections: Specific Aims (3/4-1 page), Significance (briefly state why the investigation being done, 1/4-1/2 page), Innovation (briefly comment: a new hypothesis? a new technique? a new model?, 1/4-1/2 page), and Experimental Approach (remainder up to 5 pages total).

**Specific Aims.** The Specific Aims section should begin with one or two brief paragraphs of project background and include an introduction of the scientific issues to be addressed. State the hypotheses explicitly. Succinctly state the specific aims, usually including one or two sentences describing the general experimental approach for each aim. This section then typically concludes with

a statement about how the field will benefit from the successful completion of the proposed studies.

The preliminary data (if any) can be incorporated into any of the four sections. Each literature citation must include the names of all authors, the article title, journal (or book) title, volume number, page numbers, and year of publication. Please note that discussion of the expected outcomes, potential problems, and alternative approaches are especially important for QE proposals, although sometimes mistakenly not given adequate attention.

The student should provide the finalized written proposal to all members of the QE Committee at least ten days prior to the scheduled exam date.

Tip: NIH posts examples of properly formatted grant applications (<http://www.niaid.nih.gov/researchfunding/grant/pages/appsamples.aspx>).

**The QE Committee.** The QE is administered by a committee of five members appointed by the Dean of Graduate Studies on the recommendation of the GGI Executive Committee. Members will be selected to represent general immunology as well as two sub-specialties in immunology identified by the student as their focus areas and one “outside area”. In accordance with the guidelines and policies (Service on Advanced Degree Committees and Doctoral Qualifying Examinations) set forth by Graduate Council, the QE Committee consists of 5 faculty members, of which 4 are members of the Graduate Group in Immunology and one is from outside of the graduate group. The student will identify a timeframe during their second year in the program in which they will take their QE, and provide the name of a faculty member who has agreed to act as Chair of the QE Committee. The student will provide the name of at least one faculty member who can test the student in the outside area of research. While the Chair is to be selected from the faculty members of the GGI, the faculty member examining the outside area does not have to be a member of the group. The GGI Executive Committee will identify three additional faculty members to serve on the committee. The GGI Executive Committee will assign one (or more) faculty member to examine the student in general immunology and the sub-specialties in immunology. The student's major professor may not participate in the QE. The student is encouraged to meet with each QE Committee member prior to the exam in order to discuss his or her dissertation research proposal, as well as potential topics for the exam to help the student prepare.

**The Process.** The QE is approximately 3 hours in length. All QE Committee members must be present for the entire duration of the exam. In the first part of the exam, the student will be asked to briefly outline the dissertation research proposal. QE Committee members will test the student on his/her preparedness to embark on the proposed research, including depth and breadth of knowledge associated with that proposal. In addition, the student will be tested on their understanding of the soundness of the underlying hypotheses, experimental design and execution, technologies and alternative technologies, statistical analysis of data and interpretation of the anticipated data. During the second part of the exam, the student will be tested on the depth and breadth of knowledge in general immunology and chosen sub-specialties in immunology as well as the identified outside area of research.

**The Outcomes.** Students will be informed of the outcome immediately after the QE Committee has had a chance for brief deliberations at the conclusion of the exam. The outcome of the exam is: PASS, NO PASS or FAIL. A “Fail” terminates the Ph.D. program for the student. A “No Pass” requires remediation of areas found to be deficient in the exam.

This can either mean a re-examination of all or select topics by a second qualifying examination, or execution of other work specified by the QE Committee. "Pass" - successful passing of the exam means that the student can advance to candidacy. For advancement to candidacy the student must submit to Graduate Studies the required form (Candidacy for the Degree of Doctor of Philosophy, Plan C) signed by the Chair of the QE Committee and the student's GGI graduate adviser.

## **The Dissertation Committee**

After advancement to candidacy, the student then works toward completion of his or her research and dissertation. The student, in consultation with their Major Professor and Graduate Advisor, will identify a dissertation committee. The student's Major Professor acts as the Chair of the Dissertation Committee. Two additional committee members are identified by the student, nominated by the GGI graduate adviser and approved by the Dean of Graduate Studies. The Dean of Graduate Studies must approve the members of the dissertation committee. This should be done as soon as possible following passing of the qualifying examination by submission of the Candidacy for the Degree of Doctor of Philosophy, Plan C form, signed by the Chair of the qualifying examination committee and the GGI graduate adviser.

Students are encouraged to seek out faculty for their dissertation committee who they feel comfortable with and can provide scientific guidance to their project. In addition, students should consider identifying faculty who could help in any potential disputes with the major professor. While such disputes are rare, having an advocate and trusted faculty member on the dissertation committee can greatly help the student in overcoming any problems, particularly those pertaining to differences in expectations between student and Major Professor when it comes to timelines and extent of work required for the dissertation/thesis.

The student is expected to meet at least once a year with the dissertation committee to report on progress and to receive feedback from the committee. Upon completion of the research component, the candidate will report the significant research findings in the context of the existing literature and with discussion on the implication of the findings in form of a written dissertation. Following approval of the dissertation by each member of the dissertation committee, the student will submit the dissertation to Graduate Studies. Note the deadline dates for filing of the dissertation (<http://www.gradstudies.ucdavis.edu/students/calendar.html>).

## **Exit Exam**

The motivation behind adopting a Plan C (Exit Exam) format was to bring more formality and celebration to the conclusion of a student's PhD degree. All GGI students are expected to attend all GGI Exit Seminars.

Per the GGI Degree Requirements:

### **Final Examination Committee**

The three-member Dissertation Committee will serve as the Final Examination Committee. The committee shall conduct a final oral examination following an oral presentation of the dissertation by the student. Each member of the committee signs the dissertation after successful completion of the oral examination.



### **The final examination**

Prior to the final examination, the student shall provide to the Final Examination (Dissertation) Committee an oral presentation of the dissertation. The oral presentation shall be open to the campus community, while the final examination itself shall be restricted to the members of the Final Examination (Dissertation) Committee. Requests (with justification) for attendance by others at the closed final examination shall be made *in writing* to the Chair of GGI no later than 2 weeks prior to the date of the examination - otherwise, only the Dissertation Committee will attend.

Thus, in accordance with these Degree requirements, the expectation for the two-part final examination will occur as follows:

**Part One - Exit Seminar.** A roughly 40-minute student presentation of his/her dissertation research, which is open to the public (including the student's family). The seminar will conclude with a brief question and answer session with the public.

**Part Two - The Formal Examination.** The public will be asked to step outside of the room, and the student will field questions about the seminar from the Dissertation Committee in private. Since the Committee has worked with the student for >3 years, there should not be any surprises for anyone. Given the circumstances of supervision for 3+ years, it is the expectation of the GGI that final examinations will be scheduled only after all Dissertation Committee members are satisfied with the progress of the PhD student and convinced that the dissertation fulfills the requirements as set forth by the University of California's requirement for a PhD.

[http://academicsenate.ucdavis.edu/bylaws\\_and\\_regulations/regulations.cfm? - 519-](http://academicsenate.ucdavis.edu/bylaws_and_regulations/regulations.cfm? - 519-)

Following the examination, the student will be asked to leave the room and the committee will vote. Because the final examination will commence only after the Dissertation Committee has approved the dissertation, the Major Professor and the Dissertation Committee members should be in a position to sign the dissertation at the conclusion of the examination. What the formal examination provides is an opportunity for our graduating students to proudly address questions and provide research perspective to their thesis committee, AND an opportunity for the major professor to congratulate the graduating student with a handshake (or hug) as the Thesis Committee emerges from the examination (seminar) room.

**Scheduling.** We would like for these exit seminars to be held at the beginning or end of the day, when possible, to make it easier for students and faculty to carve out time to attend. We would encourage the use of seminar rooms of optimal size (not too big and not too small). Examples are GBSF 1005 (first floor seminar room) and perhaps the first-floor seminar room in the Cancer Center.

## **Designated Emphasis**

Graduate students in Immunology may participate in a Designated Emphasis, a specialization that might include a new method of inquiry or an important field of application, which is related to two or more existing Ph.D. programs. The Designated Emphasis is awarded in conjunction with the Ph.D. degree and is signified by a transcript designation; for example, "Ph.D. in Immunology with a Designated Emphasis in Biotechnology".

The Graduate Group in Immunology is associated with four inter-graduate programs: Biotechnology, Biology of Vector-Borne Diseases, Translational Research, and Animal Host-Microbe Interaction.

Students have to fulfill additional courses and other requirements specified by these programs before the qualifying exam can be taken. For more information on the additional requirements contact those programs directly.

## The Dual-Degree Program (DVM or MD/PHD)

### Overview

The Schools of Medicine (SOM) and Veterinary Medicine (SVM) offer programs leading toward dual M.D./Ph.D. and D.V.M./Ph.D. degrees. The Graduate Group in Immunology has established a Memorandum of Understanding for students in both of these programs. See below for the current M.D./Ph.D. (PSTP) Memorandum. Students enter these programs by first matriculating in the professional schools (SOM or SVM), and typically enter the graduate studies phase after completing two years of basic science curriculum in the respective professional school. The aims of these programs are to train physicians and veterinarians capable of addressing the broad diversity of interdisciplinary problems facing human and animal health, and who are especially well prepared to help meet evolving scientific, social, and ethical challenges in these areas. To complete the requirements of both degrees, students usually need seven to eight years. For further descriptions of these programs, please see:

Dual-Degree Program in Medicine  
([http://www.ucdmc.ucdavis.edu/mdprogram/MD\\_Ph.D/about.html](http://www.ucdmc.ucdavis.edu/mdprogram/MD_Ph.D/about.html))

Dual-Degree Program in Veterinary Medicine  
(<http://www.vetmed.ucdavis.edu/vstp/index.cfm>)

### Study plan and degree requirements for dual-degree programs

Completion of course requirements for the PhD and advancement to PhD candidacy are typically achieved within 3 quarters for dual-degree students, as outlined in the dual-degree study plan in Appendix 2. The basic science curriculum in the SOM or SOVM fulfills much of the requirement for elective coursework of traditional single degree GGI students. In addition, most students in the dual-degree programs will have completed 2 laboratory rotations prior to starting the GGI Curriculum.

After successful completion of all required coursework outlined in the Dual-Degree Study Plan, students advance to PhD candidacy by passing a comprehensive doctoral qualifying examination, usually in the summer of their first year in the GGI program (third year of the dual-degree program). The exam follows the same content, format, guidelines and policies as for the traditional GGI PhD students.

### Other Degree Requirements for dual-degree programs

The study plan and degree requirements for the dual-degree program only differ in the types and number of classes that the student has to take and a greater degree of flexibility in the rotation program. For all other requirements, including but not limited to the Qualifying Examination, Dissertation Committee and Exit Seminar please refer to the PhD Program.

In the dual-degree program the student may identify a Major Professor before entering the graduate portion of their PhD through rotations conducted during their first 2 years of Medical School. The student will then join that laboratory upon entering the PhD program but still enroll in IMM201L. Course requirements of IMM201L will be fulfilled by presenting work conducted in the laboratory of the Major Professor, instead of the rotation laboratory.

## **Memorandum of Understanding between the UC Davis Physician Scientist Training Program (PSTP) and the Graduate Group in Immunology (GGI)**

1. MCAT vs GRE: The GGI will accept MCAT scores in lieu of GRE scores to meet admission requirements.
2. Application: PSTP students are expected to apply to the Graduate Group at the end of their first year of medical school and participate fully in the two-day recruitment interview "weekend" (typically held on a Friday-Saturday in February). At a minimum, PSTP students are required to participate in the formal interviews, as conducted for the other GGI applicants. PSTP students will compete on equal footing with other GGI applicants for admission to the graduate group, where quality and rigor of previous research experience is given high priority. Thus, the GGI is not obligated to accept PSTP students if more highly qualified students are in the applicant pool. Likewise, PSTP students are not obligated to accept an offer of admission into the GGI. As appropriate, students may petition for early admission to begin graduate school the following Spring after Board exams.
3. Initial Funding: Funding and logistics of students admitted early will remain the responsibility of the PSTP until the start of the Fall Quarter. Thus, the School of Medicine will provide, in the absence of other support, funding for tuition, fees and stipend of PSTP students for their initial Spring and Summer quarters of graduate school. The GGI will offer assistance in coordinating logistics prior to start of the Fall Quarter.
4. Curriculum Requirements: Students are expected to fulfill the course requirements for the GGI, according to the Graduate Council Approved GGI Degree Requirements. Those Degree Requirements can be found on the GGI Website and in the GGI Handbook. A specific Study Plan for PSTP students is included in the Degree Requirements. Typically, PSTP (and VSTP) students can complete required coursework in 3 quarters (taken in the order of Fall-Winter-Spring), as this sequence allows the student to acquire basic graduate level knowledge in immunology before enrolling in the more challenging coursework that builds on the prerequisite classes. Medical school courses serve to fulfill elective coursework requirements, as stated in the Degree Requirements.
5. Qualifying Exam: Students are expected to pass the qualifying exam as outlined in the Degree Requirements of the GGI.
6. Laboratory Rotations: PSTP students are expected to have conducted at least two laboratory rotations before the Fall Quarter start of graduate school classes; a third rotation is optional. PSTP students will enroll in IMM201L in the Fall Quarter of their first year in Graduate School, typically fulfilling oral and written course requirements by reporting on initial work done in their chosen mentor's laboratory.

7. Dissertation: The PSTP requires students to submit their committee-approved dissertation, complete their exit seminar and Plan C Final Examination before re-entry into medical school.
8. PSTP Student Funding: As for other PhD students in the GGI, the Major Professor, once identified (and agreed by joint decision of the student and faculty member), will be the individual responsible for funding the PSTP student during graduate school, including tuition, fees and stipend.

Charles L. Bevins MD PhD  
Chair, Graduate Group in Immunology  
Training

Saul Schaefer MD  
Director, Physician Scientist

Program

Date: November 2014

## **The Masters of Science Programs in Immunology**

### **Overview**

There are two plans under which a student may pursue a master's degree at UC Davis: Plan I (by thesis), and Plan II (by comprehensive examination). The Graduate Group in Immunology currently only offers admission to the Master Plan I (by thesis). Masters by comprehensive examination (Plan II) is available only under exceptional circumstances. To receive the Master's degree, students are required to be in residence a minimum of three quarters. Two regular six-week summer sessions may count as the equivalent of one quarter. Usually, all work for the master's degree is done in residence on the Davis campus. With the consent of the Graduate Adviser and the Dean of Graduate Studies, however, some work taken elsewhere may be credited toward your degree. A MS Plan I degree is usually obtained within 2 years.

### **Plan I (Master of Science degree by thesis)**

Students must identify a sponsoring faculty member for admission to the Master's degree program. Upon entering the program the student will conduct coursework and research under the guidance of the identified Major Professor. The degree requires completion of course work as outlined in the Degree Requirements (see study plan at Appendix 3) and a written thesis. A minimum of 30 units of course work is required of which at least 12 must be in graduate level (200) courses with not less than 12 units in graduate research (courses numbered 299). As soon as possible but no later than spring quarter of the first year the student, in consultation with their Major Professor and Graduate Advisor, will identify a Thesis Committee.

### **Plan II (Master of Science degree by comprehensive examination)**

GGI currently does not admit students to the MS Plan II. However, students that may want to change from the PhD to the MS degree will be considered for the MS II after discussion with their mentor and graduate advisor. The program requires completion of 36 units of upper division and graduate course work; at least 18 of the 36 units must be earned in graduate courses in the major field; however, no more than 9 units may be in research courses. Under this plan passing of a comprehensive final examination is required of all students in order to obtain the M.S. The exam consists of two components: preparation of a written scientific essay and an oral examination on materials covered in the curriculum. Please refer to the GGI Degree Requirements for details regarding the MS Plan II..

### **General Master of Science Degree requirements**

M.S. graduate students in immunology are required to maintain a grade point average of at least 3.0 (4.0 scale) throughout their graduate studies.

Degree requirements for required coursework are outlined in the study plan for Masters Plan I students (see Appendix 3).

In addition, Master's students in immunology are expected to:

- Present yearly a research poster at the Annual Graduate Group Retreat (2<sup>nd</sup> year and above).
- Participate in the events organized by the graduate group and actively engage in the various activities of the program.
- Form their thesis committee no later than the end of spring quarter of the first year in the program and meet regularly, but at least once a year, with the committee.
- Make adequate progress in their research project.
- Submit a written thesis to Graduate Studies following approval by all members of the thesis committee in a timely manner, usually within 2 years of study.

## Advancement to Candidacy

Every student must file an official application for *Candidacy for the Degree of Master of Science in Immunology* after completing one-half of their course requirements and at least one quarter before completing all degree requirements. The *Candidacy for the Degree of Master* form can be found online at: <http://www.gradstudies.ucdavis.edu/forms/>. A completed form includes a list of courses the student will take to complete degree requirements. If changes must be made to the student's course plan after s/he has advanced to candidacy, the Graduate Adviser must recommend these changes to Graduate Studies.

Students must have their Graduate Adviser and thesis committee Chair sign the candidacy form before it can be submitted to Graduate Studies. If the candidacy is approved, the Office of Graduate Studies will send a copy to: the Thesis Committee Chair, the appropriate graduate staff person, and the student. If the Office of Graduate Studies determines that a student is not eligible for advancement, the department and the student will be told the reasons for the application's deferral. Some reasons for deferring an application include: grade point average below 3.0, outstanding "I" grades in required courses, or insufficient units.

## The Masters Thesis Committee (Plan I)

The Masters Plan I student, in consultation with his/her Major Professor and Graduate Adviser, nominate 3 faculty to serve on the Thesis Committee. The major professor serves as the Chair of the committee. These nominations are submitted to the Office of Graduate Studies for formal appointment in accordance with Graduate Council policy (DDB 80, Graduate Council B.1.)

An example of a Masters Thesis can be obtained from the GGI administrator Jessica Drushell. In contrast to the PhD dissertation, a Masters Thesis does not necessarily have to contain chapters that are of sufficient quality to warrant peer-reviewed publication. However, it has to demonstrate a piece of novel scholarly activity. The thesis must be given to the entire committee for review and approval. All committee members must sign the thesis title page to certify their satisfaction. Please note the deadlines for submission:

<http://www.gradstudies.ucdavis.edu/students/calendar.html>

### **The Master's Comprehensive Exam (Plan II)**

Under exceptional circumstances a student enrolled in the GGI PhD or Masters in Science Plan I program might request to change the degree objective to a Masters in Science Plan II. If recommended by the student's advisor, in consultation with the major professor, a three faculty member Comprehensive Examination Committee will be assembled to conduct a comprehensive examination that covers depth and breadth of knowledge in Immunology, and includes both a written and oral component. The Masters Plan II student, in consultation with his/her major professor and graduate advisor, nominate the Examination Committee to the Executive Committee for approval.

A Graduate Studies-approved PhD qualifying examination committee (see PhD program) can serve as the Masters Plan II Comprehensive Examination Committee. If the qualifying examination committee fails the PhD student relative to PhD criteria, they may deem performance sufficient to meet the requirements of a Master's level exam. For details on the M.S. Plan II examination requirements, please refer to the GGI Degree Requirements.



## ENROLLMENT AND ENROLLMENT STATUS

### Filing Fee Status

Filing fee was established to assist you when you have completed all requirements for your degree except to take the M.S. comprehensive examination, file your M.S. thesis, or Ph.D. dissertation. Filing fee is a one-time fee equal to half the Registration Fee.

To be eligible for filing fee status:

- you must be advanced to candidacy
- you may not use university facilities including lab space. (You can buy library and Rec Hall privileges, and the health insurance)
- you cannot use faculty time other than the time involved in the final reading of the thesis or dissertation or in holding the M.S. comprehensive exam
- you are not eligible to hold any academic appointment title for more than 1 quarter (unless you have previously used that 1 quarter while on PELP or an earlier filing fee)
- you cannot receive a fellowship or financial aid

Filing fee applications are available in the Graduate Studies office. There is more information on the form and online in the Graduate Studies Web site <http://gradstudies.ucdavis.edu/forms/>.

The form requires the signature of your graduate adviser, and the chair of your thesis/dissertation committee (for M.S. Plan I and Ph.D. candidates). The fee must be paid before Graduate Studies will process the form.

You must either be registered or on filing fee when you submit your dissertation or thesis, or take your M.S. comprehensive exam.

If students do not file their thesis or dissertation by the end of the filing fee period, they are required to register and pay full fees. If they do not fulfill all degree requirements, take the required additional coursework and/or examinations, and re-advance to candidacy, they may be disqualified from the program.

### Planned Educational Leave Program (PELP)

The Planned Educational Leave Program is designed to allow you to suspend your program of study for good cause (illness, temporary departure from the University, employment or research away from the campus, financial problems, etc.). You can leave the campus and return at the end of your PELP to enroll and continue your study and research.

PELP is recommended if you are certain which quarter you will return and if you will be away a maximum of 3 quarters. (If you are not certain of your return date, it is suggested that you use the readmission application when you are ready to continue your study.) The form requires the signature of your graduate advisor, Student Accounting, SISS (for international students), and a non-refundable fee.

Your PELP can be lengthened or shortened with the approval of your graduate advisor and the dean of Graduate Studies. Extension of PELP is considered on the basis of extenuating

circumstances. More information about PELP is available from your Graduate Advisor and the GGI Administrator, Jessica Drushell [jdrushell@ucdavis.edu](mailto:jdrushell@ucdavis.edu).

### **What is the difference between PELP and FILING FEE Status?**

PELP is for those students who have not completed all their requirements, who still need to use University facilities, and will be away from campus up to 3 quarters. This is for students who intend to return to campus and enroll in classes. Filing fee is for students who have advanced to candidacy, no longer need University facilities, and only need to take their M.S. comprehensive exam, or submit their thesis or dissertation.

## **Childbearing Leave**

Graduate Council is deliberating about a campus-wide childbearing leave policy to ensure graduate students in GSR positions are financially supported for a period of time before and after childbearing. Teaching Assistants (T.A.s) are currently eligible for up to four weeks of paid maternity leave. Please review the Graduate Studies website for up-to-date information and discuss your options with your Major Professor and your Graduate Advisor.

## **FUNDING GRADUATE SCHOOL**

Financial support for graduate study at UC Davis is available in several forms. It is very important that each student discusses with their Major Professor about availability of funding for stipend and fees in form of a Graduate Student Research position or other funding opportunities prior to joining the laboratory, so that there is a clear understanding about the financial situation at the time of entering and for the duration of their studies. However, students should keep in mind that most grant support is subject to fluctuation and in times such as these (2014/2015) funding can often not be guaranteed. Past success of a mentor to attract funding is often the best indication of future success, but never a guarantee.

While GSR positions are convenient way to pay for your graduate education – in the end you are paid for the work you do in the laboratory earning your degree – students are strongly encouraged to apply for intra and extramural fellowships and scholarships whenever they can. This is not only to help your mentor pay the bills, but more importantly increases your competitiveness when you are finished with your degree and try to get the next position, be it in industry or academia.

Below is some information on the various types of financial support. Most students use a mix of support throughout their studies, these include **Financial Aid; Teaching Assistantships; Research Assistantships; Fellowship; Scholarships, and Grants**. There are different procedures for applying for each type of financial assistance. It is essential that you apply as early as possible for financial support and keep yourself informed about the various opportunities (large and small).

Fees and Non-resident Tuition Costs are subject to yearly adjustments, as are stipends. The Graduate Group in Immunology follows the NIH guidelines for student stipends. The current (2014/2015) level of student stipend support expected to be paid by the Major Professor for students in GSR positions is \$27,320.21 per year, plus full fees.

## UC DAVIS CAMPUS-WIDE INTERNAL FELLOWSHIPS

Each year the Office of Graduate Studies calls for applications for over 100 fellowships and scholarships across the disciplines. Awards are made once per year for the following academic year based on academic merit. Applications are available online at <http://gradstudies.ucdavis.edu/current-students/financial-support/internal-fellowships/about>. **Final date for online filing of all applications is December 1st.** You are strongly encouraged to apply each year. The Graduate Group in Immunology Executive Committee ranks each applicant from GGI students and submits this ranking to the Campus. A group of faculty reads and further ranks applications from students across all the graduate programs.

Awards are made as a mark of honor, primarily on the basis of scholarship and promise of outstanding academic and professional contribution. In evaluating applications, consideration is given to the extent and quality of previous undergraduate and graduate work, evidence of ability in research or other creative accomplishment, evidence of intellectual capacity, and promise of productive scholarship. Items to be included in this evaluation are: graduate grade point average, academic transcripts, statement of purpose, letters of recommendation, and other documentation, such as publications and awards.

The minimum cumulative graduate grade point average required for a stipend, in-state fee award, or is nonresident tuition fellowship is 3.0. The minimum required grade point average to hold an academic appointment is 3.0. Financial need or the availability of other sources of support in your graduate program is not relevant to the evaluation of academic merit. Financial need is a component of the eligibility criteria for many fellowships, and for all forms of financial aid (including work-study).

One of these fellowships is the **Dissertation Year Fellowship**. It is open to domestic graduate students, in their final stages of doctoral work, who demonstrate strong potential for university teaching and research. It includes a stipend of \$20,000 for the dissertation year, plus in-state fees, a research allowance of \$500, and a \$500 travel allowance. Please refer to the Graduate Studies webpage for specific information on this fellowship: (<http://gradstudies.ucdavis.edu/about/gsadinfo.html>).

Another fellowship is provided through **The Research Mentorship Program**. It provides research assistant support to PhD students who are in the early stages of their graduate research. Recipients will hold a 50% research assistant appointment for up to one year (you may apply for a second year). You may download and print the application for the Research Mentorship Program or obtain one from the Office of Graduate Studies <http://gradstudies.ucdavis.edu/ssupport/>.

### The Henry A. Jastro Graduate Research Scholarship program

This program makes awards to students with outstanding research proposals who's Major Professors are either in the College of Agricultural and Environmental Science or who are working with a major professor with an appointment to the Agricultural Experimental Station. Awards are available in the summer. Applications are usually available in spring quarter

(deadline for submission usually May 1<sup>st</sup>). The amount of the award is based upon the allocation given to GGI by the College of Agricultural and Environmental Science.

### **Graduate Student Travel Awards**

These awards are for travel to professional meetings. There are fall and spring awards. ([http://gradstudies.ucdavis.edu/ssupport/internal\\_travel.html](http://gradstudies.ucdavis.edu/ssupport/internal_travel.html)). Download application from the web and submit to the Graduate Group in Immunology Administrator. Each program ranks the applicants and submits this to the Campus. Be aware of the bi-yearly deadlines!

### **Graduate Group in Immunology Fellowship Support**

Each entering graduate student in the PhD program who conducts laboratory rotations during the Fall and Winter of their first year is given two quarters of financial support covering both stipend and fees and if applicable, non-resident tuition costs. Students in the Masters Degree program are not usually supported financially by the group, or their mentor.

GGI will usually call for applications for additional short-term scholarship support. First year students are not eligible for this additional fellowship support. If you are in your second year, your statement of purpose should describe your proposed research activities. If you have prepared a full research proposal, you may submit it. If you are in your second year (or beyond), your statement of purpose should be a research proposal and references are not necessary.

### **FAFSA & Financial Aid**

If you need advice or information concerning federal financial aid call 752-9246 or visit the following website for contact information:  
<http://financialaid.ucdavis.edu/graduate/Contact/gcontacts.html>

**NOTE:** Graduate students who are US citizens, permanent residents or immigrants are required to file a “Free Application for Federal Student Aid” (FAFSA) as early as possible, but no later than March 1. This form, submitted directly to the Federal Student Aid Program Office, Iowa City, Iowa, is used to determine financial need only. Financial need is a component of the eligibility criteria for many fellowships, and for all forms of financial aid. The FAFSA may be obtained from the Financial Aid Office or online: <http://www.fafsa.ed.gov>.

### **Work-Study Support**

The Graduate Group in Immunology receives each year from the Office of Graduate Studies a certain number of “work-study units” to support Graduate Students with demonstrated financial need. Financial need is established by the filing of FAFSA. This support pays for CA-resident fees (international students are not eligible) and roughly 75% of stipend support. The Major Professor of the student receiving work-study support is strongly urged

to provide the additional support to bring the student to the expected level of financial support. Should the number of students requesting work-study support exceed the number of work-study allocations made to GGI, overall GPA of the students is used to identify the best candidates. However, GGI will consider “need” as the overriding selection criterion for this award. Simply indicate your desire to be considered for work-study support when asked to do so by GGI. Calls usually go out during the Spring quarter.

## EXTRAMURAL FUNDING OPPORTUNITIES

Funding for graduate education is available from many sources, including the National Science Foundation (NSF), The National Institutes of Health (NIH) and the American Association for the Advancement of Science (AAAS). Another good source are smaller organizations such as “The American Association for Immunologists (AAI)” and the American Society for Microbiology (ASM). Ask your Major Professor what organizations s/he belongs to – and check out their websites! Further information can also be obtained from:

The Office of Graduate Studies: <http://gradstudies.ucdavis.edu/ssupport>.

The **FULBRIGHT GRANTS FOR GRADUATE STUDY ABROAD** and the **FULBRIGHT-HAYS DOCTORAL DISSERTATION RESEARCH ABROAD PROGRAM** are administered through Graduate Studies office in Mrak Hall. The campus deadlines for these awards are usually in the fall. <http://www.iie.org/fulbright>.

The purpose of Fulbright scholarship program is to increase mutual understanding between the people of the United States and other countries through the exchange of persons, knowledge and skills. Full grants provide round trip travel, maintenance for the tenure of the award, a research allowance, and tuition waivers, if applicable. Travel grants provide round-trip transportation to the country of study. Selection is based on the applicant's academic or professional record, language preparation, feasibility of the proposed study project and personal qualifications.

## T32 – NIH Training Grant Positions

Individual faculty in the Graduate Group in Immunology are associated with a number of NIH-supported graduate (and post-graduate) training grants that support graduate training in various aspects of immunology on this campus. Financial support is given in the form of full fee and stipend support for one, and up to 3, years. Below is contact information for faculty who lead these training grants (i.e. act as Principal investigators (PI)). Ask your Major Professor with which of these programs s/he is affiliated with so that you can apply if you are a US citizen, permanent resident or refugee. Be aware that many training grants will support students only AFTER they have advanced to PhD candidacy. Application deadlines vary.

- Animal Models of Infectious Disease, T32AI060555, Jay Solnick\*, PI
- Training in Comparative Lung Biology and Medicine, T32HL007013, Reen Wu\*, PI
- Veterinary Student Training in Advances Research, T35OD010956, Isaac Pessah, PI
- Comparative Medical Science Training Program, T32RR007038, Nicole Baumgarth\*, PI
- Training Program in the Biology of Disease Vectors, T32AI074550, Gregory Lanzaro, PI
- Training Program in Biomolecular Technology, T32GM008799-03, Bruce Hammock, PI

- Training in Molecular and Cellular Biology, T32GM007377-27, James Trimmer, PI
- Pharmacology Training: Bench to Bedside, T32GM099608, Donald Bers, PI
- Training Program in Basic & Translational Cardiovascular Science, T32HL086350, Nipavan Chiamvimonvat, PI
- Advanced Training in Environmental Health Sciences, T32ES007059, Pam Lein\*, PI
- Interdisciplinary Training for Autism Researchers, T32MH073124, Sally Rogers, PI
- [MD/PhD](#) & [DVM/PhD](#) Training Programs, Saul Schaefer and Fern Tablin, Directors, respectively.

### **Graduate Student Researcher (GSR)**

These positions are usually paid for from extramural (and sometimes intramural) grant support your Major Professor has received. Information and application materials for GSRs are therefore available from the department of the mentor you wish to work with. Availability of GSR positions in a mentor's laboratory is an important factor for the selection of a Major Professor. Be aware that funding can and does occasionally run out and communicate with your mentor about the timeframe that you can be ensured of support.

## **SPECIAL OPPORTUNITIES AT UC DAVIS FOR HIGHLY QUALIFIED STUDENTS FROM UNDERREPRESENTED MINORITIES**

### **National Institutes of Health-Initiative for Maximizing Student Diversity (NIH - IMSD)**

<http://biosci.ucdavis.edu/academics/graduate-education/imsd.html>

Outstanding minority graduate students entering doctoral programs in the life sciences at UCD are eligible for financial support through the NIH-IMSD program. Each NIH-IMSD award provides a stipend for living expenses plus all tuition and student fees and support during a summer bridge program. During the summer bridge program, which starts in August, NIH-IMSD fellows spend seven weeks conducting research in the laboratory of a faculty member. During the academic year, a seminar class includes faculty presentations on emerging areas in research, a journal club, and instruction on computer and library search techniques and scientific writing and speaking. Throughout the year, a member of the program's steering committee will serve as a student advisor.

#### **HOW TO APPLY**

Once you have applied for admission to the Graduate Group of your choice, contact the IMSD Program Director by e-mail, indicating the Graduate Group to which you have applied and your interest in the IMSD program. Applications will be considered in the order submitted, so it is in your interest to apply early.

Program Director: Professor Barbara Horwitz, Department of Neurobiology, Physiology & Behavior, College of Biological Sciences (530-752-2072, [bahorwitz@ucdavis.edu](mailto:bahorwitz@ucdavis.edu)).

#### **PLEASE CONTACT US**

*For additional information, phone or e-mail:*  
Professor Barbara A. Horwitz

530-752-2072

[bahorwitz@ucdavis.edu](mailto:bahorwitz@ucdavis.edu)

## TEACHING ASSISTANTSHIPS (TAs)

Teaching assistantships (TA-ships) are offered for graduate students to gain experience in teaching, and as a mechanism for financial support. TA-ships pay for resident tuition and stipend support. However, not all courses offer 50% employment. Check the application. Large numbers of TA-ships are available to qualified students for a variety of undergraduate courses. Immunology students usually obtain TA-positions in the life sciences; particularly the Division of Biological Sciences teaches many undergraduate classes that need TA-support. TA-positions are offered through individual departments rather than through the graduate group. Therefore, interested students need to contact these departments directly. Adequate command of the English language and a GPA of 3.0 are required for teaching assistantships. Information about availability and the department-specific application forms are best obtained directly from the individual department.

Most deadlines are two quarters before TA-ship is to be started.

### **TA-ships in the Division of Biological Sciences**

Evolution and Ecology

Exercise Biology

Microbiology

Molecular and Cellular Biology

Neurobiology, physiology and behavior

Plant biology

## MENTORING GUIDELINES

Developed by the UC Davis Graduate Council June 24, 1999

Graduate Council recognizes that the mentoring of graduate students by faculty is an integral part of the graduate experience for both mentor and mentee. Faculty mentoring is broader than advising a student as to the program of study to fulfill coursework requirements and is distinct from formal instruction in a given discipline. Mentoring encompasses more than serving as a role model. Because of the uncertainty as to the nature of mentoring, the UC Davis Graduate Council has outlined the following mentoring roles to guide the relationship between faculty and graduate students. Faculty and graduate students must realize that, while the major professor will be the primary mentor during a student's career at UCD, many of the mentoring "functions" defined below may be performed by program faculty other than the major professor. An important corollary to this recognition is that faculty members must realize that much of their interaction with all students has an important mentoring component to it. Graduate students also have responsibilities to insure successful mentoring and these are also indicated below.

Faculty have a responsibility to mentor graduate students. Mentoring has been defined as....



- I. Guiding students through degree requirements. This means:
  1. Providing a clear map of program requirements from the beginning, making clear the nature of the coursework requirements and qualifying examination, and defining a timeline for their completion.
  2. Providing clear guidelines for starting and finishing dissertation or thesis work, including encouraging the timely initiation of the dissertation or thesis research.
  
- II. Guiding students through thesis or dissertation research. This means:
  1. Evaluating clearly the strengths and weaknesses of the student's research.
  2. Encouraging an open exchange of ideas, including pursuit of the student's ideas.
  3. Checking regularly on progress.
  4. Critiquing written work.
  5. Providing and discussing clear criteria for authorship of collaborative research.
  6. Assisting in finding sources to support dissertation research; such as, teaching assistantships, research assistantships, fellowships, etc.
  7. Being aware of student's research needs and providing assistance in obtaining required resources. For example, serve as the student's advocate for necessary desk and/or laboratory space.
  
- III. Guiding students through professional development. This means:
  1. Providing guidance and serving as a role model for upholding the highest ethical standards.
  2. Treating students respectfully.
  3. Encouraging and critiquing oral and written presentations.
  4. Encouraging participation in professional meetings of regional groups as well as of learned societies.
  5. Facilitating interactions with other scholars, on campus and in the wider professional community.
  6. Assistance with applications for research funding, fellowship applications, and other applications as appropriate for the respective discipline.
  7. Being the student's advocate in academic and professional communities.
  8. Providing career guidance, specifically assistance in preparation of CV and job interviews, and writing letters of recommendation in a timely manner.
  9. Recognizing and giving value to the idea that there are a variety of career options available to the student in her/his/your field of interest and accepting that the student's choice of career options is worthy of your support. For example, guiding the student to teaching opportunities when appropriate for the student's goals.

*As partners in the mentoring relationship, graduate students have responsibilities. As mentees, students should:*

- I. Be aware of their own mentoring needs and how they change through their graduate tenure. Graduate students should discuss these changing needs with their mentors.
  
- II. Recognize that one faculty member may not be able to satisfy all of a student's mentoring needs. Seek assistance from multiple individuals/organizations to fulfill the mentoring roles described above.



- III. Recognize that their mentoring needs must respect their mentor's other responsibilities and time commitments.
- IV. Maintain and seek regular communication with their mentors, especially their major professor.

While we have tried to provide examples of what mentoring means, we recognize that each discipline will provide its own special set of mentoring needs and challenges.

## UC DAVIS GRADUATE STUDENT BILL OF RIGHTS & RESPONSIBILITIES

### UC Davis Graduate Student Bill of Rights and Responsibilities

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#### PREAMBLE

Graduate student rights and responsibilities rest on their roles as junior colleagues who are critical to the university's mission of teaching and research. All members of the university community are responsible for securing and respecting the general conditions conducive to a graduate student's unique role as student, researcher, and teacher. This document is a revised and updated version of the 1990 UC Davis Graduate Student Bill of Rights and Responsibilities, produced by the UC Davis Graduate Student Association, and endorsed in principle by the Graduate Council and Graduate Division of the UC Davis campus on November 7, 1990.

#### GRADUATE STUDENTS HAVE THE FOLLOWING RIGHTS

1. **Graduate students have the right to information about specific and concrete degree requirements as approved by the Graduate Council.** These requirements shall be communicated clearly upon entrance to the graduate program.<sup>i</sup> No graduate student shall be held to program requirements instituted after their initial acceptance,<sup>ii</sup> unless the student so chooses.<sup>iii</sup>

Prospective and current graduate students have the right to know the "normative time to degree" and the "average time to degree" within a specific graduate program<sup>iv</sup>; a program's student attrition rate and, if available, the predominant reasons for lack of program completion; and a program's placement record.

2. **Graduate students have the right to an accurate description of the availability and the likelihood of financial and resource support within their programs.** Programs shall provide a thorough description of the requirements, qualifications, and applicable deadlines necessary for academic employment, training or financial support at the university.<sup>v</sup>

Assignments of office or lab space, or any necessary materials for teaching and research, should consider the need for adequate graduate student space and resources.<sup>vi</sup>

3. **Graduate students have the right to receive objective evaluations of progress based on criteria that are understood by the Graduate Adviser and the student.** Evaluations shall be factual, specific, and shared with the student within a reasonable period of time.<sup>vii</sup> Annual progress reports and reports of split decisions on oral examinations should be in writing. Graduate students should be given a fair opportunity to correct or remedy deficiencies in their academic performance, and the reasons for unsatisfactory

performance on programmatic examinations shall be stated clearly to the student in a written evaluation.<sup>viii</sup> Any intent to disqualify a student from a graduate program for academic reasons must be preceded by specific, written performance information, well in advance of actual disqualification. Only the Dean of Graduate Studies can disqualify a student from a graduate program for academic reasons.<sup>ix</sup>

When presented with the opportunity to evaluate their professors, graduate students have the right to do so without fear of retribution and with the assurance of confidentiality.

4. Graduate students have the right to accurate information in selecting a major professor and in recommending other members of their committees. Graduate students have the right to change their major professors if necessary. If a graduate student's major professor departs from the institution once the student's work is under way, the program shall strive to provide the student with alternative supervision, external to the institution if necessary. If a degree program is to be discontinued, provisions shall be made for students already in the program to complete their course of study.
5. **Graduate students have the right to expect reasonable training opportunities, and have the right to refuse to perform tasks if those tasks are not closely related to their academic or professional development.** The student's lesser status, authority and/or experience should not be exploited to the personal advantage of a faculty member.<sup>x</sup>

Graduate students have the right to accurate and timely information pertaining to the conditions of their employment at the university, including vacation and sick time, work-study policies, and the impact of their wages on eligibility for student loans and stipends.

The university should strive to provide training and/or direct teaching experience appropriate for each student's career focus. Graduate students have a right to explore professional development opportunities for a range of academic and non-academic careers, not limited to research positions, and to expect access to accurate information about the job market and placement assistance.

6. **Graduate students have the right to co-authorship in publications involving significant contributions of ideas or research work from the student.** Where applicable, students shall receive "senior authorship" for publications comprised primarily of their creative research and writing. As early as possible, faculty and graduate students shall agree upon authorship positions commensurate with levels of contributions to the work.<sup>xi</sup> Ideas derived from seminar discussion or lab meetings should be treated as shared intellectual property between the faculty, postdoctoral scholars and students involved. Graduate students have the right to work with faculty mentors to develop original research and work toward independent scholarship.
7. **Graduate students have the right to expect that graduate programs incorporate student representatives into decision-making processes.** This provides for increased communication of student ideas and concerns, as well as evidence that graduate students are "in training" as future academicians. Graduate students have the right to raise concerns with the program administration and to be given reasonable policy explanations without fear of unprofessional response. If a satisfactory explanation is not given, the student has a right to raise the concern at the level of the Dean of Graduate Studies.<sup>xii</sup>
8. **Graduate students have the right not to be discriminated against,** such as actions based on a student's race, color, national origin, religion, political beliefs, economic standing, sex, gender identity, pregnancy (including pregnancy, childbirth, and related medical conditions), disability, age, medical condition, ancestry, marital status,

citizenship, sexual orientation, or status as a Vietnam-era veteran or special disabled veteran in admissions and throughout their education, employment, and placement.<sup>xiii</sup>

Graduate students have the right to “be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.”<sup>xiv</sup> Graduate students have the right to be free of reprisals for exercising their rights.

9. **Graduate students have the right to reasonable confidentiality in their communications with faculty and staff.**<sup>xv</sup> The performance of a graduate student shall not be discussed with other students by professors or staff. Discussion of the student’s performance among faculty shall be of a professional nature, being limited to academic performance. The substance of the communication shall be based on a need to know relevant information.

In accordance with the Federal Family Education Rights and Privacy Act, graduate students have the right to review their academic records and files, to know which authorized personnel have access to their file, and to seek amendments to their files. Graduate students should have the right to direct that items be added to or removed from their placement center dossiers as facilitated by the Internship and Career Center.<sup>xvi</sup>

10. **Graduate students have the right to appeal for cause any decision affecting their academic standing, to file complaints against the graduate program or members thereof, and to petition for redress of grievances.** Where a graduate student presents reasonable evidence regarding misconduct by a faculty member or probable cause that such misconduct took place, the program shall attempt to provide a way by which the student can avoid working directly with the accused faculty member. Graduate students have a right to file grievances outside the university structure with an appropriate regional association.<sup>xvii</sup>
11. **Graduate students have the right to form clubs and organizations** within their programs, colleges, ethnicities, shared interests, or any other constituencies, for the purposes of academic, professional, or social networking, sharing, and advocacy. Graduate student employees have the right to join a collective bargaining unit that has been authorized to represent them.

## **GRADUATE STUDENTS ARE RESPONSIBLE FOR THE FOLLOWING**

1. **Graduate students have a responsibility to conduct themselves, in all educational activities, in a manner befitting a junior colleague.** Graduate students’ behavior should be a credit to themselves, the higher academic unit and the university. They have the responsibility to respect and uphold all relevant university policies regarding professional conduct, including but not limited to the Code of Academic Conduct and the University Policy on Nondiscrimination, Sexual Harassment and Student Records and Privacy. Graduate students have the responsibility to uphold and respect all of the aforementioned rights for fellow graduate students.

Graduate students have a responsibility to provide accurate and honest reporting of research results and to uphold ethical norms in research methodology and scholarship.

Graduate students are responsible for informing the university of changes in address, phone number, enrollment changes which might affect financial aid or assistantship awards, and/or any other circumstances which could affect satisfactory progress towards a degree.

2. **Graduate students have a responsibility to fulfill their teaching and/or research obligations to the best of their knowledge, training and ability.** Graduate student employees should carry out their job responsibilities in a conscientious and timely manner. They have the responsibility to inform the university of any changes or circumstances that would prevent them from carrying out these obligations, and to do their best to ensure stability for faculty, programs and departments. Graduate student employees have a responsibility to seek accurate information about the conditions of their employment contract, including vacation and sick time, work-study policies, and the impact of their wages on eligibility for student loans and stipends.

Graduate students holding Graduate Student Researcher (GSR) positions have a responsibility to maintain regular communication with their employer, to maintain integrity in their research activities and to perform their research duties as outlined and in accordance with institutional guidelines and policies.

They have a responsibility to report any questionable or unethical research procedures.

Graduate students holding Teaching Assistant (TA) or Associate Instructor (AI) positions have a responsibility to maintain regular communication with the Instructor of Record. TAs and AIs have a responsibility to uphold the highest level of academic integrity in their teaching practices. This includes maintaining student confidentiality, avoiding any exploitation of student vulnerability, and avoiding personal relationships with students. TAs and AIs have a responsibility to foster academic integrity in their students, including timely and accurate reporting of any academic misconduct, and serving as mentors to undergraduates when possible and appropriate.<sup>xviii</sup>

3. **Graduate students have a responsibility to participate in the campus community to the extent that each is able, and to enrich the campus in whatever ways possible.** This may include contributing to the academic development and the social and intellectual environment of their particular program or involvement in decision-making and policy creation relative to graduate student issues at the program and campus-wide levels.

Graduate students have a responsibility to uphold the public service aspects of the mission of a public university, at a level appropriate to their ability and graduate program. They have the responsibility to provide high quality and ethical teaching to undergraduate students, and to provide valuable research and support to the faculty and other graduate students.

4. **Graduate students are responsible for devoting an appropriate amount of time and energy toward achieving the advanced degree** within “normative time,” except when special circumstances apply. They are responsible for attending class and completing all assignments in accordance with the expectations established by their instructors and programs of study.<sup>xix</sup>

Graduate students have a responsibility to take the initiative in asking questions that promote their understanding of the academic requirements and the financial particulars of their specific graduate program. They have a responsibility to take the initiative in accessing any necessary resources for mental and physical well-being, to optimize their academic achievement and their contribution to the university overall.<sup>xx</sup>

5. **Graduate students have a responsibility to understand their role in the development of the professional relationship between faculty mentor and graduate student,** including having an awareness of time constraints and other demands imposed on faculty members and program staff. Graduate students should recognize that one faculty member may not be able to fulfill all of a student’s mentoring needs, and have the responsibility to seek assistance from multiple individuals and organizations as needed. Furthermore, graduate students are responsible for communicating regularly with faculty mentors and advisers, especially in matters related to research and progress within the

graduate program and/or for maintaining a mutually agreeable schedule of evaluative/supervisory conferences with Major Professors and Graduate Advisers.<sup>xxi</sup>

**Endorsed by the UC Davis Graduate Council and the Graduate Student Association.**



Dean, Graduate Studies



Chair (2006-2008), Graduate Council



President, Graduate Student Association

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<sup>i</sup> *Graduate Studies Adviser's Handbook*, Prepared by the Office of Graduate Studies, February 2008. *Graduate Student Guide*, University of California Davis, 2008. UC Davis Graduate Council Policy GC2005-04 (rev. 1): <http://gradstudies.ucdavis.edu/gradcouncil/degreerequire.pdf>.

<sup>ii</sup> *Graduate Student Guide*, p.29.

<sup>iii</sup> Graduate Council Grandfathering Policy for Degree Requirements, April 2000.

<<http://gradstudies.ucdavis.edu/gradcouncil/grandfathering.pdf>>

<sup>iv</sup> Graduate Council Policy GC2005-04 (rev. 1). UC Davis Graduate Council Time to Degree Policy <http://www.gradstudies.ucdavis.edu/gradcouncil/timetodegree.pdf>.

<sup>v</sup> *Graduate Studies Adviser's Handbook*. *Graduate Student Guide*.

<sup>vi</sup> UC Davis Policy and Procedure Manual, 360-21.

<sup>vii</sup> Faculty Code of Conduct, *Academic Personnel Manual*, University of California Davis, Section APM-015. Grading Policies, Faculty Guide from University of California Davis Office of the Registrar, 2007-08, p.9-14.

<sup>viii</sup> *Graduate Studies Adviser's Handbook*, p.51-56. *Graduate Student Guide*, p.31-33.

<sup>ix</sup> Graduate Studies Policy GS2005-01. UC Davis Graduate Studies Disqualification and Appeal Policy [http://www.gradstudies.ucdavis.edu/facstaff/policies/disqual\\_appeal.pdf](http://www.gradstudies.ucdavis.edu/facstaff/policies/disqual_appeal.pdf).

<sup>x</sup> Faculty Code of Conduct, *Academic Personnel Manual*, University of California Davis, Section APM-015.

<sup>xi</sup> *Graduate Studies Adviser's Handbook*, p.56-58. *Graduate Student Guide*, p.32.

<sup>xii</sup> *Graduate Student Guide*, p.34-36.

<sup>xiii</sup> University Policy on Nondiscrimination: <<http://registrar.ucdavis.edu/UCDWebCatalog/appendix/nondesc.html>>.

<sup>xiv</sup> American Association of University Professors, "Joint Statement on Rights and Freedoms of Students," <http://www.aaup.org/AAUP/pubsres/policydocs/contents/stud-rights.htm>.

<sup>xv</sup> Faculty Code of Conduct, *Academic Personnel Manual*, University of California Davis, Section APM-015.

<sup>xvi</sup> UC Davis Policy and  
 Procedure Manual, 320-21. <sup>xvii</sup>  
 UC Davis Policy and Procedure  
 Manual, 280-05. <sup>xviii</sup> UC Davis  
 Code of Academic Conduct.  
<sup>xix</sup> *Graduate  
 Student Guide,*  
 p.29-31.  
<sup>xx</sup> *Graduate  
 Student Guide,*  
 p.44-48.  
<sup>xxi</sup> *Graduate  
 Student Guide,*  
 p.27-29.

## ADDITIONAL CAMPUS RESOURCES

### Establishing California Residency

If you are a U.S. citizen, originally from out-of-state, it is important that you file for California residency at the conclusion of your first year of study at UC Davis. The information about becoming a California resident for fee purposes can be found at <http://registrar.ucdavis.edu/tuition/residence/>. If you have questions, contact the Residence Deputy in the Registrar's Office at [residence deputy@ucdavis.edu](mailto:residence deputy@ucdavis.edu). You are required to file a petition with the Registrar's Office to change your status from nonresident to resident.

### Support for International Students

The best source of information for international students is the Services for International Students and Scholars Office (SISS), 100 University House, 752-0864, [siss@ucdavis.edu](mailto:siss@ucdavis.edu), <http://siss.ucdavis.edu>. It is important that you contact SISS before Changing Major, Changing Degree Objective, going on PELP (Planned Educational Leave Program), and going on Filing Fee. Changes in your academic status could change your visa.

### E-mail Accounts & IT Support

One of the very first things you will want to do once you arrive is open your email account. This is easily done at the Information Technology (IT) office on the first floor of Shields Library. Most campus addresses consist of your first and middle initials and your last name, followed by @ucdavis.edu.

While at IT, be sure and ask about any communications software you may pick up. Both Mac and PC versions are available. For more information visit this website: <http://studentcomputing.ucdavis.edu/>

## Car and Parking Passes

If you should ever need to drive your car into the campus core to pick up something that won't fit on your bike rack or in your backpack, there are one-day car passes available for this purpose. If you need one-day parking passes for guest speakers or off-campus research collaborators, you can request them from your home department.

Quarterly/Yearly permits can be purchased through the Transportation and Parking Service (TAPS) located on Hutchison Drive, next to the parking structure, or online:

<http://taps.ucdavis.edu/about>

## CAMPUS-WIDE PROGRAMS AND CENTERS

The UC Davis campus offers a wide range of organizations, benefits, and activities to complement your academic work, to entertain you, and to give you support. Below are a **small** sample of campus resources and information that might interest you. All of these organizations and dozens more can be accessed through the UC Davis Web site at <http://www.ucdavis.edu>.

### The UC Graduate Student Health Insurance Plan (GSHIP)

The UC Graduate Student Health Insurance Plan (GSHIP) is designed specifically for UC graduate students with both Davis area and worldwide coverage. GSHIP combines primary care services offered by Student Health and Counseling Services (SHCS) at the UC Davis Student Health & Wellness Center with medical, dental, and vision benefits that cover services not available on campus. Together, the medical, dental, and vision insurance form GSHIP. GSHIP now offers a voluntary dependent plan. More information can be found at: <http://shcs.ucdavis.edu/>

### Campus Violence Prevention Program

Fire/Police Building, Kleiber Drive, 752-3299, <http://cvpp.ucdavis.edu/>

### Writing in the Disciplines (formerly the Campus Writing Center)

378 Voorhies Hall, 752-8024, <http://writing.ucdavis.edu/course-information/graduate-courses>

**Cross Cultural Center**, corner East Quad and Shields Avenue, 752-4287,

<http://ccc.ucdavis.edu>

### Counseling and Psychological Services

219 North Hall, 752-0871, <http://shcs.ucdavis.edu/services/caps.html>

The Counseling Center offers support groups for graduate students.

### Disability Resource Center

160 South Silo, 752-3184, 752-6833 TTY, <http://drc.ucdavis.edu>

### Harassment & Discrimination Resources

<http://shep.ucdavis.edu/>

This includes Student Judicial Affairs and the Sexual Harassment Education Program

**Information Technology**

Student Computing Guide, <http://studentcomputing.ucdavis.edu/>

**Internship and Career Center**

Second Floor, South Hall, 752-2855, <http://icc.ucdavis.edu>

**Learning Skills Center**

2205 Dutton Hall, 752-2013

**Lesbian, Gay, Bisexual, Transgender Resource Center**

University House Annex, Room 105, 752-2452, <http://lgbcenter.ucdavis.edu/>

**Libraries**

<http://www.lib.ucdavis.edu>

**Center for Excellence in Teaching and Learning**

17 Wellman Hall, 752-6050, <http://cetl.ucdavis.edu/>

**Transportation and Parking Services (TAPS)**

752-8277. Bike licenses, parking permits, and the bus to the Sacramento Medical Center.

<http://www.taps.ucdavis.edu>

**Women's Resource and Research Center**

First Floor, North Hall, 752-3372, <http://wrrc.ucdavis.edu>. The WRRC offers discussion groups including a support group for women graduate students.

## INFORMATION ABOUT LABORATORY AND ANIMAL USE

### Animal Use and Care Protocols

If you plan to conduct research that uses live, vertebrate animals, you must first obtain approval from the ANIMAL USE AND CARE ADMINISTRATIVE ADVISORY COMMITTEE (AUCAAC). You cannot initiate your project, nor can you purchase your animals until you and your Major Professor/Principal Investigator have received written documentation that your protocol has been approved. AUCAAC review takes an average of 30 days, but can take as long as six weeks. You can get blank Animal Use and Care Protocol forms from the Environmental Health and Safety Office (TB 30; 752-2364), or from their web site: <http://ehs.ucdavis.edu/>

The completed protocol must be signed by your Principal Investigator (usually your Major Professor) and the chair of your department. You then submit your completed form to the AUCAAC Secretary in care of the Campus Veterinarian (TB 30). Questions about animal protocols should be directed to the AUCAAC Secretary, 752-2364. Once your protocol has been approved, you should post the first page of the protocol form in the facility where your animals are housed.



## **Animal Handling Course**

If you are interested in learning how to handle and use lab animals, you can sign up with the Campus Veterinarian (752-2364) for the LABORATORY ANIMALS SKILLS COURSE. Offered in response to demand, this course may be given as often as monthly during the academic year, and includes two to three hours of instruction on the care and handling of rabbits, rats, mice, guinea pigs, and hamsters. Records are kept on file of all students who have completed the training.

## **Campus Animal Facilities**

There are animal facilities located throughout the campus. In general, the procedures enforce at each facility vary with the type of animals housed in that facility, the type of experiments that are to be conducted with these animals, and the usual protocol requirements. Your best sources for information about animal facilities are your Major Professor, the faculty member who supervises the facility, and the facility supervisor and support staff.

## **Laboratory Safety Information**

Students have the right and responsibility to know what hazards they may encounter while pursuing their education and what measures to take to protect themselves and others. Campus policy requires all UCD employees and students to receive safety information and training. This training encompasses chemical, biological, animal, physical and radiation hazards, including specific safety training in unit unique protocols and instrumentation.

You will be required to familiarize yourself with the Injury/Illness Prevention Program (IIPP) and take the Hazardous Chemical Class at EH&S. Your Major Professor, supervisor, unit safety officer, or the Department Safety Coordinator will be able to assist you in required training, EH&S classes, and documentation requirements for your projects and safety. If you TA or supervise students, you will be responsible for their safety and safety training. All TA's are to attend the TA Safety Training Class offered each fall. There will be Required Annual Training for Chemical, Biological, Evacuation Procedures and General Safety training for all employees and students. Always remember that you are not only responsible for your own safety, but also the safety of your fellow colleagues and students.

## Appendix 1

### Study Plan for PhD students in the Graduate Group in Immunology

<b>Year 1</b>	<b>Class Code</b>	<b>Classes*</b>	<b>Units**</b>	<b>Other events</b>
<b>Fall</b>	IMM201 IMM201L IMM296 PMI 291A PMI 298	Introductory Immunology (Core) Laboratory Rotations (Core) Non-Participatory Seminar (Adv. Topics in Immunology) Participatory Seminar 1 (Seminar in Immunology) Participatory Seminar 2 (Breakfast Club or other)	4 4 2 1 1	WOW Grad Studies Introduction to GGI Meet your Adviser Welcome BBQ Identify Rotations
<b>Winter</b>	IMM202L IMM293	Laboratory Rotations (Core) Current Concepts in Immunology (or year 2) (Core) *** Elective 1	5 4 3	Annual Retreat Meet your Adviser Identify Major Professor
<b>Spring</b>	Variable Variable Variable	Selective 1 299 Research Units *** Elective 2 or Selective 2	Variable Variable Variable	Start work with identified Mentor Meet the Chair
<b>Summer</b>		Research Seminars		Develop Study Plan Meet with Adviser – clear Study Plan/Identify outside area
<b>Year 2</b>				
<b>Fall</b>	Variable Variable Variable	Selective 2 (Clinical Immunology or other selective) 299 Research Units Elective 3 (Outside area)	Variable Variable Variable	Welcome BBQ
<b>Winter</b>	IMM293 Variable Variable	Current Concepts in Immunology (Core; or year 1) Selective 3 (RAL209 or other selective) 299 Research Units Non-participatory seminar 2	4 Variable Variable Variable Variable	Annual Retreat (prepare first poster) Meet with Adviser – identify potential QE committee members

<b>Spring</b>	Variable Variable PMI298	299 Research Units Participatory Seminar 2 (Immunology Breakfast Club or other) (QE Prep)	Variable Variable	QE – Advance to Candidacy
<b>Summer</b>		Qualifying Examination Research		GGI Chair-Student Town Hall meeting QE – Advance to Candidacy Identify Dissertation Committee
<b>Years 3 – 5</b>	Variable	299 Research Units Seminars	12/qtr	Experimental Work Meet at least once per year with Dissertation Committee Prepare poster for annual retreat Annual GGI Chair-Student Town Hall

\*When a Designated Emphasis (for example Biotechnology, Vector Borne Diseases) is pursued, all required class work (for the DE) must be completed in addition to the required class work for Immunology before sitting the qualifying examination (QE). 1 – 2 classes can still be ongoing in the quarter in which the QE is held. In that case advance to candidacy will occur only after classes are taken successfully.

\*\* Each quarter (FWS) enrollment has to be for a minimum of 12 units

\*\*\* Elective courses to be chosen in discussion with mentor and student adviser. A minimum of 8 units is required. Elective courses can be selectives, in addition to the 3 required selectives and/or courses in outside area or other upper division undergraduate or graduate level courses. Please note that for each laboratory unit (IMM201L or 299 research units), 3 hours of laboratory research time are required/week. Therefore, for 5 units of IMM201L will translate to 15 hours/week during the laboratory rotation. 4 units equal 12 hours/week.

## Appendix 2

### PhD Study Plan for Dual-Degree (MD or DVM/PhD) students in the Graduate Group in Immunology

Year 1	Class code	Class Title*	Units**	Other events
<b>Fall</b>	IMM201	Introductory Immunology	4	WOW Grad Studies
	IMM201L	Work in Progress	4	Introduction to GGI
	IMM296	Non-Participatory Seminar 1 (Advanced Topics in Immunology)	2	Meet your Adviser
	PMI 291A	Participatory Seminar 1	1	Welcome BBQ
	PMI 298	Participatory Seminar 2	1	Develop Study Plan / outside area
<b>Winter</b>	IMM293	¶Current Concepts in Immunology	4	Annual Retreat
	Variable	Selective 1	Variable	Meet with Adviser – identify potential QE committee members
	Variable	***Outside area courses 299 Research Units	Variable Variable	
<b>Spring</b>	Variable	Selective 2	Variable	
	Variable	Selective 3	Variable	
		“299” Research Units Participatory Seminar 3	Variable 1	
<b>Summer</b>		Research Seminars		QE – Advance to Candidacy Identify Dissertation Committee Annual GGI Chair-Student Town Hall
<b>Yrs 2 - completion</b>		299 Research Units Seminars	12/qtr	Experimental Work Meet at least once per year with Dissertation Committee Prepare poster for annual retreat Annual GGI Chair-Student Town Hall

\*When a Designated Emphasis (for example Biotechnology, Vector Borne Diseases) is pursued, all required class work (for the DE) must be completed in addition to the required class work for Immunology before sitting the qualifying examination (QE). 1 – 2 classes can still be ongoing in the quarter in which the QE is held. In that case advance to candidacy will occur only after classes are taken successfully.

\*\* Each quarter (FWS) enrollment has to be for a minimum of 12 units

\*\*\* Non-GGI elective courses are not a requirement for dual-degree PhD students. However, an outside area of study must be defended in the QE and enrollment in additional classes is recommended.

¶ Please note that for each laboratory unit (IMM201L or 299 research units), 3 hours of laboratory research time are required/week. Therefore, for 4 units of IMM201L will translate to 12 hours/week during the laboratory rotation.

### Appendix 3

#### M.S. Plan I Study Plan for students in the Graduate Group in Immunology

Year 1	Class code	Class Title	Units*	Other events
<b>Fall</b>	IMM201	Introductory Immunology	4	WOW Grad Studies
	IMM 201L	Work in Progress	4	Introduction to GGI
	IMM296	Non-Participatory Seminar 1	2	Meet Graduate Adviser
	PMI291A	Participatory Seminar 1	1	Welcome BBQ
	PMI298	Participatory Seminar 2	1	Develop research plan with mentor
<b>Winter</b>	IMM293	Current Concepts in Immunology	4	Annual Retreat
	Variable	Selective 1 (RAL209 or other)	Variable	Meet with Graduate Adviser
	Variable	Elective 1	Variable	
		299 Research Units	Variable	
<b>Spring</b>	Variable	Selective 2	Variable	Meet the Chair
	Variable	Selective 3	Variable	Form Thesis Committee
	Variable	Elective 2	Variable	
		299 Research Units	Variable	
<b>Summer</b>		Research		Meet with Thesis Committee
<b>Year 2</b>		299 Research Units Non-Participatory Seminar Participatory Seminar Electives	12/qtr	Experimental Work Meet at least once per year with Thesis Committee Prepare poster for annual retreat Write and submit thesis

\* Each quarter (FWS) enrollment has to be for a minimum of 12 units

¶ Please note that for each laboratory unit (299 research units), 3 hours of laboratory research time are expected/week. A minimum of 12 units is required for completion of the Master's degree. Course registration numbers (CRN) are unique for each Major Professor.