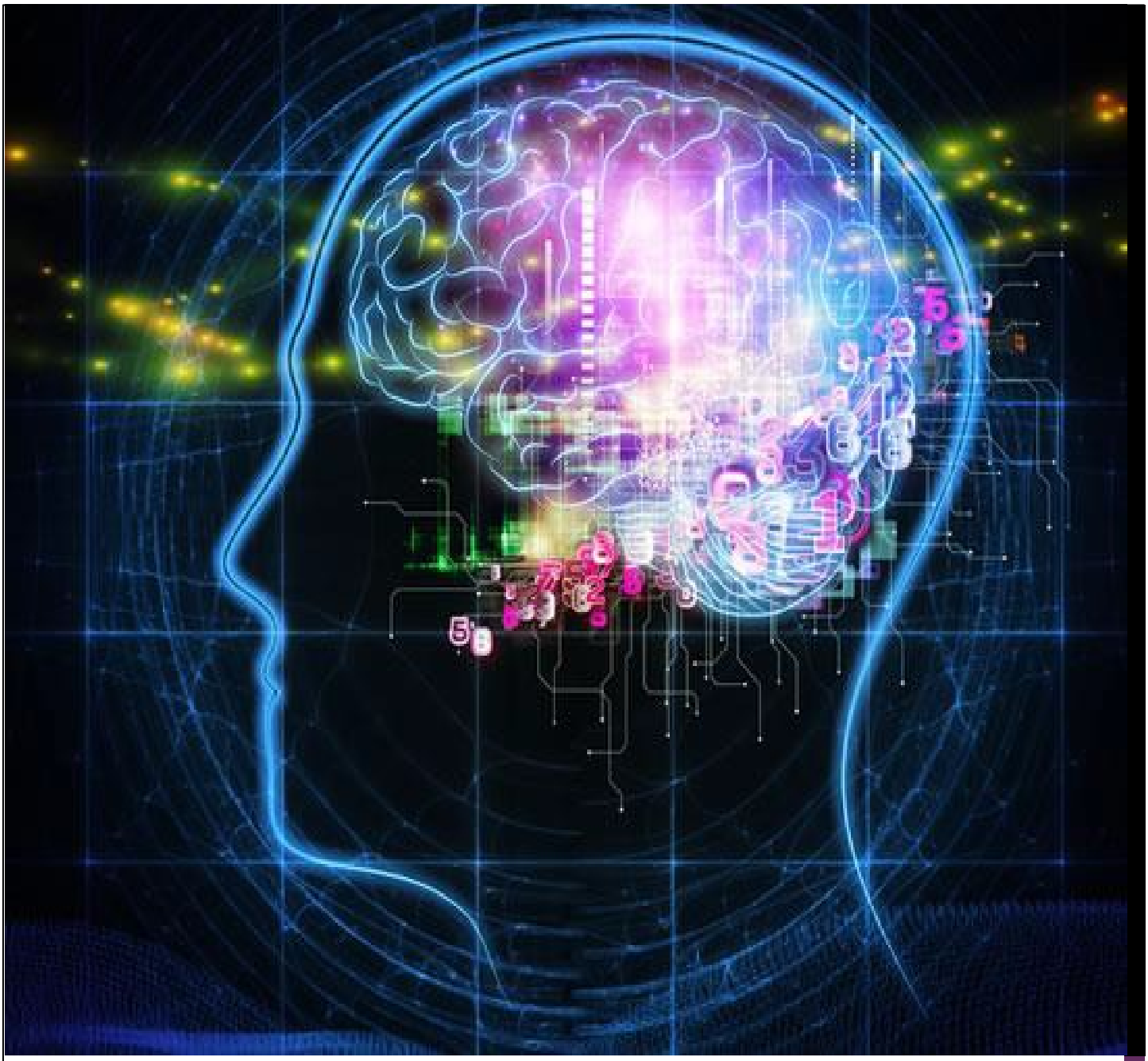

NEUROSCIENCE GRADUATE PROGRAM

STUDENT HANDBOOK

2020-21

UC RIVERSIDE UNIVERSITY OF CALIFORNIA

NEUROSCIENCE GRADUATE PROGRAM

STUDENT HANDBOOK

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PREPARING FOR THE FUTURE

Neuroscience is a multidisciplinary approach to understanding nervous systems at levels ranging from the molecular and cellular to the behavioral and cognitive.

INTRODUCTION

Neuroscience is a multidisciplinary approach to understanding nervous systems at levels ranging from the molecular and cellular to the whole organism. The goal of the Neuroscience Graduate Program is to prepare students for careers in research, teaching and/or scientific administration. Students are expected to learn the fundamentals of neuroscience, starting with a required course sequence to become knowledgeable concerning a range of research methods, and to demonstrate capability in original research. The specific research training received by a graduate student is the responsibility of the faculty supervisor/mentor, under whose guidance and in whose laboratory the student carries out research projects leading to the degree. Our students benefit from an interdisciplinary training approach, tailored by the faculty supervisor but enriched by the readily available expertise and laboratory facilities of program faculty with backgrounds ranging from chemistry through molecular biology to psychology. In addition to this training, regular Neuroscience Colloquia (NRSC 287) make students aware of current scientific advances as well as the range of opportunities open to neuroscientists whose interests and talents can lead to careers in academia as well as the biotechnology industry and science administration. This handbook is designed to guide your development as a graduate student in the Neuroscience Program at the University of California, Riverside.

THE ACADEMIC PROGRAM (Ph.D.)

Requirements for conferral of the Ph.D. in Neuroscience include completion of:

1. Basic coursework
2. Two quarters as a Teaching Assistant
3. Research Proposal (Written Qualifying Exam) and the Oral Qualifying Exam
4. Ph.D. Dissertation
5. Dissertation defense

Normative time for completion of the Ph.D. degree requirements is fifteen quarters (5 years), although this is somewhat flexible, depending upon the specific research area and preferences of the faculty supervisor. Incoming students are strongly encouraged to participate in 2-3 laboratory rotations during the first 3 quarters of residence with the objective of choosing a Ph.D mentor by end of the Spring quarter of the first academic year. Most coursework and preparation for qualifying examinations is completed during the first two years, while maintaining research as the highest priority. The remaining 2-3 years are devoted to research and to the writing and defense of the dissertation, although students continue to participate in graduate seminars and may take additional coursework during this period.

MILESTONES

Beginning of 1st quarter	•Plan 3-5 laboratory rotations in consultation with the Graduate Advisor for Enrolled Students and/or Director of the Neuroscience Program •Please refer to the timetable found at the end of this handbook.
End of 3rd (Spring) quarter	•Finish rotations •Identify your faculty supervisor •Set up the faculty guidance committee. Review the Guidance Committee Form on page 29.
Beginning of 4th (Summer) quarter	•Begin work on the research proposal in consultation with the faculty supervisor
End of 6th quarter	•Complete coursework •Complete the written research proposal. Please review •Set up the oral qualifying committee
7th-10th quarter	•Pass the qualifying examination
End of 15th quarter	•Finish dissertation and file with Graduate Division

MILESTONE DETAILS AND OTHER REQUIREMENTS:

Schedule your laboratory rotations	You are strongly encouraged to engage in rotations during the first year as a way of learning more about Neuroscience research underway at UCR and to broaden your perspective regarding different scientific problems, questions, and experimental approaches. During the first 3 quarter in the Program, lab rotations may be 5-10 weeks in duration, based on mutual agreement with the faculty member involved. A minimum of 2 rotations is required, unless special circumstances are identified and approved by the Guidance Committee and the Program Director.
Choose your Faculty Supervisor.	Choice of a faculty supervisor is critically important and must be done thoughtfully and carefully. This is the faculty member who will be primarily responsible for your scientific training. Your research direction will be shaped by the direction of research conducted in the laboratory of this faculty member. In addition to providing the critical role of mentor in your scientific development, the faculty supervisor will serve as Chair of your Guidance and Dissertation Committees and provide research facilities,

	intellectual guidance, and financial support required to complete the dissertation. Since you cannot truly begin your own research until you have selected a faculty supervisor, it is critical that you make this decision as soon as possible, by the end of the 3rd quarter at the latest. There are two important principles to understand: (1) you need the commitment of a faculty supervisor to work in their lab, and (2) you are permitted to switch labs and faculty supervisor, provided that you reach agreement with the new supervisor and Graduate Advisor for enrolled students. It is also strongly recommended that new students **join the Society for Neuroscience (SFN)** before the end of their first quarter. See the SFN webpage for membership benefits and applications: *http://web.sfn.org/*.
Meet with your Guidance Committee as soon as possible	Preferably during your initial quarter of study. Guidance committees typically are composed of the faculty supervisor and two additional faculty members with expertise in your area of interest. Formation of this committee is accomplished in consultation with the faculty supervisor and approved by the Graduate Advisor for enrolled students. The Guidance Committee is chaired by the student's faculty supervisor. The committee provides advice on coursework and research approaches and monitors progress during the quarters preceding the qualifying examination. More specifically, the committee provides guidance and evaluation regarding: (a) satisfaction of any course deficiencies, (b) fulfilling Program course requirements, (c) preparation of the student for research, (d) student performance. The Committee should meet minimally once per year and more often as the need arises. The Graduate Advisor is not expected to attend Guidance Committee meetings, but should receive a written summary following each meeting. In addition, the Graduate Advisor and/or Program Director have the right to attend these meetings.
Complete course requirements	1. Fundamentals of Neuroscience 200A, B and C 2. Two elective courses selected by the student in consultation with the major professor and/or guidance committee. Elective choices are flexible and meant to enhance and strengthen the student's expertise in the research area of interest. Graduate classes are preferred, however, undergraduate courses can be taken with the approval of the Graduate Advisor or Program Director. 3. Enrollment and participation in the Colloquium in Neuroscience (NRSC 287) each quarter in academic residence. 4. Enrollment and participation in Special Topics in Neuroscience (NRSC 289, 2 units) during Fall and Spring Quarters ➢ Following completion of the qualifying exam, students are required to enroll in NRSC 289 only once per year. 5. Students in the Ph.D. program must normally have completed a Bachelor's degree in one of the biological sciences, with a preparation

	deemed equivalent to that required for the bachelor's degree from UCR. ➢ Students who are admitted to graduate standing with deficiencies in preparation may be required by their faculty supervisor and Guidance Committee to take appropriate courses to correct such deficiencies.
Complete the teaching requirement	A minimum of two quarters of service as a Teaching Assistant is required regardless of whether financial support comes from Fellowship or Research Assistantships, etc. ➢ All students will participate in the Teaching Assistant Development Program (TADP) sponsored by the Graduate Division. ➢ Prior to the TAship assignment, you are required to attend (1) the New TA Orientation and (2) the TADP's TA training seminars and workshops. See the TADP website for schedules and contact information.
SPEAK test	All international students must take the SPEAK test and obtain a passing grade before they can be appointed as TA. ➢ Students receiving a *"clear pass"* on the SPEAK test (scores ≥ 50 out of 60) have no further requirements and can be appointed to TA positions. ➢ Students receiving a *"conditional pass"* (scores of 40-45) can be appointed as a TA for three quarters, but are required to take English classes at the Learning Center and retake the test. Their TA appointment is on a probationary basis with the approval of the Graduate Dean. ➢ Students receiving a *"no pass"* (scores of 20-35) may not be appointed as a TA until they have retaken the test and obtained a clear or conditional pass. ➢ Click here to learn more information regarding the SPEAK test.
Qualifying Exam	After completing course requirements and no later than the 7th quarter in residence, the student will be given a qualifying examination in two parts. Work on Part I will begin by the 4th quarter in residence. For details see the Oral Qualifying Exam Process in this handbook.
Work on the Dissertation	Once a student has advanced to candidacy by passing the Qualifying Examinations, a Dissertation Committee of three faculty members will be nominated by the student and supervisor and appointed by the Graduate Dean. This committee replaces the guidance committee. Please see the Dissertation process in this handbook for additional details. Please refer to the timetable found at the end of this handbook.

ACADEMIC PROGRESS

SATISFACTORY ACADEMIC PROGRESS

Normative time for the Ph.D. degree in Neuroscience is fifteen quarters (five years). Normative time is defined as the period of full-time registration required to earn the degree, assuming the student enters with a bachelor's degree and has no course deficiencies or needs to take any remedial work. For most programs at UCR, this falls between five and seven years. Because the Ph.D. is a research degree, the University gives programs considerable latitude in establishing degree requirements. As stated above, the program of study for Neuroscience students is planned in consultation with the Guidance Committee, which supervises the student's progress prior to the appointment of the dissertation committee. After the student advances to candidacy, the Dissertation Committee oversees student progress during final stages of the degree program.

ANNUAL PROGRESS REPORTS

For all students, evaluations of progress are carried out each Spring/Summer by the Guidance or Dissertation Committee. Ideally, the Guidance or Dissertation Committee meets with the student and assesses progress over the past year. A written progress report is prepared by the faculty supervisor in consultation with the student and Guidance Committee. It is then submitted to the Graduate Advisor for Enrolled Students. All evaluations are reviewed by the Graduate Advisor, who is responsible for making specific recommendations to the Graduate Division concerning the student's progress. The Graduate Advisor may also approve exceptions to the normal time schedule occasioned by unusual circumstances. Students are notified in writing of the results of the annual evaluation, and copies are forwarded through the Graduate Secretary to the Graduate Division.

UNSATISFACTORY ACADEMIC PROGRESS

Reasonable progress in achieving necessary milestones in the degree program is expected. Failing to do so may have profound consequences for your career in graduate school. If you do not meet suggested deadlines such as qualifying exams in a timely fashion, if your GPA drops below the minimum level of 3.00 (3.50 for Fellowship recipients), if you have 12 or more units of "I" grades, or if your faculty advisor feels that you are not advancing as you should, the Graduate Division can and will block your registration. In addition, opportunities for receiving funding through the Program become severely limited.

M.S. DEGREE

A Thesis Plan (Plan I) or Non-Thesis Plan (Plan II) M.S. degree in Neuroscience is available under exceptional circumstances, when work leading to the Ph.D. degree cannot be completed. Whether either of these options is appropriate will be decided by the Guidance Committee. See General University requirements for Plan I and Plan II M.S. degrees: http://graduate.ucr.edu/masters.html.

NEUROSCIENCE GRADUATE STUDENT ASSOCIATION (NGSA)

Neuroscience graduate students, with the support of the faculty, have formed the Neuroscience Graduate Student Association (NGSA). This association is intended to provide a means for graduate

students to become involved in institutional issues and to promote social and scholarly activities amongst members of the UCR neuroscience community. A NGSA representative is a full member of the Neuroscience Graduate Program's Admission and Seminar Committees, and is invited to attend and vote on issues in Program faculty meeting, enabling neuroscience graduate students to take a proactive role in their education. Graduate students interested in the neurosciences are encouraged to join NGSA.

GENERAL ADMISSION REQUIREMENTS

Applicants must meet the general admissions requirements of the Riverside Division of the Academic Senate and the UCR Graduate Council as set forth in the Graduate Studies section, including completion of an undergraduate degree (B.S. or B.A.). Applicants should have adequate background in biological sciences and physical sciences, ideally including courses in the following or equivalent areas: General Biology (1 year), Genetics, General Chemistry (1 year), Organic Chemistry, Physics, Calculus, and Statistics. Additionally, at least 20 quarter-units of courses distributed among the following areas are required, although applicants may be admitted with limited course work deficiencies and required to make up deficiencies as specified by the admissions committee: Biochemistry; Cell Biology; Molecular Biology; Physiology; Animal Behavior; Learning and Memory; Perception; Computer Science; and Neuroscience, Neurobiology, or Physiological Psychology, with laboratory.

GRADUATE DIVISION

- Graduate Division website
- Graduate Student Handbook, published by the Graduate Division
- Graduate Studies section of the UCR General Catalog

GRADUATE TUITION AND FEES

Please visit the Office of the Registrar online to view the 2017-18 academic year, per quarter fees.

NON-RESIDENT PH.D. STUDENTS

After advancing to candidacy, nonresident tuition is waived for a maximum of 9 academic quarters.

GRADUATE STUDENT FINANCIAL ASSISTANCE

Graduate Students are supported from a variety of sources. Information on various types of funding is provided below:

FELLOWSHIPS

UCR offers a variety of multi-year fellowship packages for incoming students that may include stipends, full or partial payment of tuition and fees, and appointment as TA or GSR. An applicant is judged on the quality of previous academic work, on evidence of ability to do research and other creative accomplishments, and on promise of becoming a productive scholar. Contributions to campus goals of achieving a diverse student body may also be considered.

GRADUATE DIVISION STIPEND

Usually awarded as part of a larger fellowship package, these funds are provided by Graduate Division through the R' Web. The student receives paychecks at the beginning of each quarter starting October 1.

GRADUATE STUDENT RESEARCHER (GSR)

An employment title for graduate students conducting research (either independent or directed). Student appointments may not exceed 49% during the academic year. During academic breaks and summers, students may be appointed up to 100%.

GSR appointments at 25% or more during the academic year are entitled to GSHIP and PFR (see below). Financial support for GSR employees is provided by faculty extramural grants and departmental general funds. Students are paid in arrears (just like other university employees) and receive their first check after their first month of work. (I.e. a student who begins work in fall quarter does not get a check until November 1)

TEACHING ASSISTANTSHIPS (TA'S)

Also known as ***Academic Student Employee (ASE)***. This employment title is for graduate students who are teaching part of a course (normally labs or discussion sections) under the guidance of a faculty member/instructor. Students may not be appointed at more than 50% during the academic year. If they are appointed at 25% or more time during an academic quarter, they are entitled to GSHIP and PFR (see below). There are many rules that are associated with this title now that there is an employee contract. See the United Auto Workers Union Contract for more information. TA funds are distributed to the Departments by the CNAS Dean's Office. Students are paid in arrears (just like other university employees) and receive their first check after their first month of work. (I.e. a student who starts work in fall quarter does not get a check until November 1)

SUMMER SUPPORT

Students conducting research during the summer months typically receive financial support through grant funding from the Faculty Supervisor.

FUNDING DEFINITIONS

Partial Fee Remission (PFR): Students who are appointed at 25% or more time during an academic quarter as a GSR or TA are entitled to PFR. This entitlement pays part (but not all) of the students' mandatory university fees. The Graduate Student Affairs Officer provides Graduate Division with a list of the students who are eligible for this entitlement before the student bills are printed. If an award is placed on the system after bills are printed, the student's bill will not reflect the correct fees they owe.

Graduate Student Health Insurance (GSHIP): Students who are appointed at 25% or more time during an academic quarter as a GSR or TA are entitled to have their GSHIP fees paid for them. The Graduate Student Affairs Officer provides Graduate Division with a list of the students who are eligible for this entitlement before the student bills are printed. If an award is placed on the system after bills are printed, the student's bill will not reflect the correct fees they owe. The actual dollar amount of GSHIP changes as the insurance prices change from year to year. Students who have private Health Insurance comparable to the University's coverage can apply for waivers of the GSHIP fees. If a student has comparable health insurance coverage s/he may apply for an exemption of the GSHIP premium by filing the appropriate paperwork with the Health Center. Deadline dates for petitioning for exemption from GSHIP are firm. Contact the Student Health Insurance coordinator at (951) 827-5683 or (951) 827-3031 for information.

Non-Resident Tuition Remission (NRT or NRTR): Non-residents of California (either Domestic or International) who are appointed at 45% or more as a GSR or TA are entitled to have their Non-

Resident Tuition waived. Once a student advances to candidacy, his/her Non-Resident Tuition remains waived for a period of nine quarters, after which NRT payment is required.
Domestic non-resident students must establish California residency by the second year of study. You must petition in person at the Office of the Registrar, Student Services Building, for a change of classification from nonresident to resident status. All changes of status MUST be initiated before the first day of classes for the term for which you intend to be classified as a resident. Students planning to file for residence status after their first year should talk with the Residence Deputy well before the appropriate residence determination date, preferably during their first few weeks in California.

***Fee Differential**:* The left-over university mandatory fee amount for a student with a PFR and GSHIP and NRTR entitlements. This dollar amount changes as GSHIP and PFR go up. Most students are required to pay this.

***Departmental Grant in Aid (DGIA)**:* Departments or individual faculty members with unrestricted funds (many federal grants will not allow payment of student fees) can grant fellowship-like awards to individual students. This is most often used to pay the student's Fee Differential. The Graduate Student Affairs Officer provides Graduate Division with a list of the students who are to receive these awards indicating the account and fund information. Graduate Division then pulls the money out of the account and awards it to the student through the Financial Aid System.

NOTE: TAs and GSRs must be making acceptable progress toward their degree objective, must advance to candidacy within 12 quarters after entry, and must have fewer than 8 units of incomplete grades. In addition, TAs and GSRs must maintain a 3.00 GPA. Graduate students may not be employed more than 50% time or 20 hours per week during the academic year in any combination of appointments. During quarter breaks and in the summer, they may be employed full-time.

Graduate Student Association (GSA) Mini-grants help to pay the travel expenses of students who have been invited to present scholarly papers or posters at regional and national professional conferences. The program is administered by the Graduate Student Association and requires that departments agree to provide matching funds. Contact the GSA or the graduate student affairs officer for mini-grant applications.

CAMPUS FUNDING

Dissertation-Year Fellowships
Graduate Diversity Programs

The Dissertation-Year Fellowship Program provides financial support during the final year of dissertation work. Recipients must demonstrate high potential, promise and the desire for an academic career. Faculty mentors assist fellows in acquiring skills necessary to become candidates for faculty positions at major universities. Support is also provided to enable fellows to present their research at other UC and CSU (California State University) campuses.
Students may be nominated for the following fellowships:

- Graduate Research Mentorship Programs (GRMP)
- Dissertation-Year Fellowship Awards (DYFA)
- Chancellor's & College Dissertation Fellowships (C&CDF)

Students may be nominated for the following fellowships:

- Graduate Research Mentorship Programs (GRMP)

- Dissertation-Year Fellowship Awards (DYFA)
- Chancellor's & College Dissertation Fellowships (C&CDF)

Dissertation Research Grants
Dissertation Research Grants provide funds to doctoral candidates for research expenses associated with the dissertation. Applicants must be advanced to candidacy and plan to be registered during the period of the award. These funds may not be used for preparing the dissertation copy or as a stipend for personal support.

Other Sources of Funding
In addition to the fellowships, assistantships, grants, and loans administered by the University, graduate students may also be eligible for other types of support provided by federal agencies and private foundations. Organizations that have awarded fellowships and research support to UCR students include the National Science Foundation and National Institutes of Health, U.S. Department of Education, Fulbright Program, Phi Beta Kappa Alumni Scholarships for International Scholars, and Sigma Xi. If students wish to explore these sources of support for study, they should consult the *Annual Register of Grant Support* and other similar directories either at the reference department of the Science library or through Funding Opportunities listed by Graduate Division. There are many sites on the World Wide Web devoted to various sources of aid for graduate students.

- Financial Aid Office at UCR
- California Student Aid Commission
- FASTWEB
- National Science Foundation
- U.S. Department of Education Student Guide
- The Foundation Center
- Fellowship Office-The National Academies of Sciences, Engineering, Medicine

For additional information please contact Karen Smith at (karen.smith@ucr.edu) in Graduate Division at UCR.

Extramural Support
There are many opportunities for Graduate Students from outside funding sources from federal agencies and private foundations. UCR subscribes to several searchable databases listed through Research and Economic Development at UCR.

UCLA also offers a comprehensive database called GRAPES (Graduate and Post Doctorate Extramural Support).

NRSC PROGRAM OFFICERS

Dr. Khaleel Razak Program Director	khaleel@ucr.edu 2123 Psychology Bldg. (951) 827-5060	Overall responsibility for ensuring that the Neuroscience Program meets its goals of recruiting and providing the best possible training for its graduate students. Administers Program resources, makes committee appointments and provides leadership in setting policy as well as oversight of recruitment.
Dr. Todd Fiacco Graduate Advisor for Enrolled Students	todd.fiacco@ucr.edu 1109 Biological Sciences Bldg. (951) 827-7865	Responsible for oversight and advising of enrolled students, including annual progress reports.
Dr. Anupama Dahanukar Graduate Advisor for Admissions/Recruitment	Anupama.dahanukar@ucr.edu 2234c Genomics (951) 827-5742	Responsible for recruitment of incoming graduate students and assembly of financial packages in consultation with the Graduate Dean. Organizes recruitment weekend (February).
Antonio Knox Graduate Student Services Advisor	antonio.knox@ucr.edu 1140D Batchelor Hall (951) 827-6746	Program coordinator, processing admissions, financial support, enrollment, tracking of student advancement, maintains student records, program event planning, interpreting and implementing of University policies and regulations.
NGSA President	Riley Bottom	

CNAS GRADUATE STUDENT AFFAIRS CENTER

1140 Batchelor Hall

Housed in the College of Natural & Agricultural Sciences, the CNAS Graduate Student Affairs Center supports many of the graduate programs in the college. We assist you with all aspects of completing your graduate program (class registration, program requirements, Graduate Division policies, and fellowship and employment matters (TA/GSR)). We will often be your first stop when you need help or are just looking for a good listener. We work with Faculty Graduate Advisors and Major Professors to ensure your success. You usually see the staff member who supports your graduate program, but feel free to contact any Center staff when your Student Services Advisor is unavailable.

CENTER STAFF MEMBERS

Kathy Redd **Director and Student Services Advisor**	kathy.redd@ucr.edu 951-827-5621	Oversees the operation of the Center and is the primary contact for the **Entomology** graduate program and Staff Support for TA appointments in the Life Sciences.
Dawn Loyola **Director and Student Services Advisor**	dawn.loyola@ucr.edu 951-827-4116	Is the primary contact for the **Joint Doctoral Program in Evolutionary Biology (SDSU/UCR)** graduate program.
Antonio Knox **Student Services Advisor**	Antonio.knox@ucr.edu (951) 827-5913	Is the primary contact for the **Neuroscience**, **Biophysics**, and **Environmental Toxicology** graduate programs.
Katherine Van Horn **Graduate Student Services Advisor**	mroman@ucr.edu (951) 827-4716	Is the primary contact for the **Evolution, Ecology, and Organismal Biology Program** graduate program.
John Herring **Graduate Student Services Advisor**	john.herring@ucr.edu 951-827-2441	Is the primary contact for the**, Environmental Sciences, Genetics, Genomics and Bioinformatics** and **Geological Sciences**
Julio Sosa **Graduate Student Services Advisor**	Julio.sosa@ucr.edu 951-827-7378	Is the primary contact for the **Cell, Molecular, and Development Biology, and Biochemistry and Molecular Biology** graduate programs.
Laura McGeehan **Graduate Student Services Advisor**	Laura.mcgeehan@ucr.edu 951-827-5688	is the primary contact for the **Microbiology, Plant Biology** and **Plant Pathology** graduate programs.

GRADUATE DIVISION REQUIREMENTS

For information on specific Graduate Division requirements, please refer to the Graduate Studies section of the University of California, Riverside General Catalog and visit Graduate Division's online.

GRADUATE STUDENT ASSOCIATION

All graduate students are automatically members of the Graduate Student Association (GSA), which seeks to represent their views and promote their interests with the faculty and administration, both at the campus level and system wide. They are responsible for negotiating and reviewing healthcare insurance coverage. Their Grievance Mediation Officer acts as an advocate on grievance matters. It also administers the Mini-grant Program, to provide travel grants to graduate students who represent GSA at professional conferences. For a more detailed description of GSA activities and services, call (951) 827-3740 or visit them online.

UCR GRADUATE COMMUNITY COURSE/ILEARN

You will be enrolled in the UCR Graduate Community course through iLearn. This course is used to post announcements regarding funding opportunities, campus workshops and events pertinent to graduate students. The discussions boards are also available, including a "student exchange" where you can post items for sale or rooms for rent, etc.

R'MAIL ACCOUNTS

The University requires that you read your UCR web mail account regularly. The University and Graduate Student Services Advisors use e-mail to remind students of upcoming deadlines and share important messages. The UCR e-mail address is considered the official means of contact.

MAILBOXES

Ask your Student Services Advisor about the location of your mailbox. **Find out now where it is and check it on a regular basis.**

COMPUTER ACCESS AND OFFICE SPACE

Some programs provide offices for their PhD-level graduate students, some only desk space in a lab. If your program does not have a computer room, there are computer labs on campus that you are free to use. **Find out now what's available to you.**

LABORATORY SAFETY TRAINING

As an employee of the University, you are required to attend Lab Safety Training provided by Environmental Health & Safety (EH&S). Please enroll in a session via their online website: http://www.ehs.ucr.edu/. If you have any questions or problems enrolling, please contact the EH&S office at 951-827-5528. Please attend this training as soon as possible. Some graduate students will need to attend additional training depending on their research project. It is very important that you maintain your own records of any training you take in addition to providing proof to your lab manager or faculty member. In the past, students have had to repeat training if they did not have their own proof that they completed it due to unreliable computer records.

UCR IDENTIFICATION CARD

The UCR Card is a multi-functional Campus ID card. It is the Official photo ID of UCR and it provides you with Library privileges as well as access to the Recreation Center.

The cost of your card is billed directly to your student account. For information on how to obtain the card, as well as optional card services, please visit Card Services.

ESTABLISHING CALIFORNIA RESIDENCY

Domestic California Non-resident students must establish California residency by the beginning of the second year of study. Students should start planning for this as soon as they arrive. For more information, please see the Rules on Residency Status on Graduate Divisions website.

ENROLLMENT

It is the student's responsibility to initially enroll in courses and to confirm course enrollment. Failure to enroll by the scheduled deadlines may result in the lapse of student status or delay financial aid. The R' Web system is the web service for enrolling in courses. Using R' Web, students can enroll in classes, confirm course enrollment, view grades, check their financial aid, billing, degree progress, view their Student ID, change their address or PERM PIN number, update privacy restrictions, and get help. R'Web is accessed at http://rweb.ucr.edu/.

CHANGE OF ADDRESS

Please keep your local address and phone number current. You must update your addresses (local, billing, next of kin) on R' Web.

INFORMATION FOR TEACHING ASSISTANTS (TA'S)

TEACHING ASSISTANT DEVELOPMENT PROGRAM

UCR has a long history as a distinguished teaching campus and regards Teaching Assistant (TA) training as a crucial part of graduate instruction. TA orientation is required of TAs in all departments. It is offered every fall during the first week of the quarter, as well as at the beginning of the winter quarter. Focus workshops are required of all Teaching Assistants who scored a 4.0 or below on any single question on their Teaching Evaluations. Students who score low on their "overall effectiveness as a TA" question must be observed in class by a Mentor TA and prepare an Action Plan for improvement. Students who score low on their English language skills must attend a communication workshop and schedule six half hour sessions to use language software in the TADP Office. Registration is available on the TADP home page beginning Monday of the first full week of classes for the current quarter. TADP provides services to the more experienced TA as well, including a teaching resource library, teaching portfolio development and assessment consultations, seminars on professional development, and the University Teaching Certificate Program. Contact your department or TADP online or at 951-827-3386 for further information on training requirements and upcoming seminars.

THE SPEAK EXAM (TOEFL ACADEMIC SPEAKING TEST)

To be appointed a TA, any student **whose native language is not English** must pass an English proficiency exam. This includes not only international students but also **any** student whose first

language is not English. The SPEAK exam is scheduled by the International Education Programs in University Extension approximately two weeks before the beginning of every quarter.

Those who score a conditional pass can be appointed as a TA but are required to participate in the appropriate English language classes at the Extension Center and retake the test. Individuals in this range may be appointed as TAs for up to two quarters on a probationary basis with the approval of the Graduate Dean. For those students within the probationary range, a determination of their continuing eligibility to serve as TAs will be made by the Graduate Dean on the basis of:

- Departmental recommendation, including an assessment of the student's academic ability.
- Student teaching evaluations;
- Other evidence of commitment to/performance in teaching (e.g., faculty evaluations or statements of support, videotapes);
- Evidence of a good-faith effort to improve English skills; and Relative proximity to the level of competence represented by a clear pass

MONITORING EXAMINATIONS

1. The final responsibility for monitoring of examinations rests with the instructor in charge of the course. A faculty member should be present or immediately available if TAs are proctoring exams. There should always be at least two proctors in the room. If additional proctors are needed, the course instructor should attempt to arrange for faculty or TAs not assigned to the course to serve in this capacity.

2. Proctors should attempt to minimize the opportunity (temptation) for cheating:
   a. Clearly announce the expected disposition of books, papers, etc. (if they are allowed in the examination room). Make the consequences of violation of the announced procedure clear (see #3 below).
   b. Space students as far apart as possible.
   c. Use randomized seating arrangements, seating charts, or multiple versions of exams if appropriate.
   d. Ask students to move to a different seat if suspicious behavior is observed.

3. If suspicious behavior is observed, it should be confirmed by another instructor/TA, if possible. Suspicious materials present at an examination (i.e., notes, open books not used or disposed of according to announced policy; see #2a) should be taken by the instructor (or by the TA and turned over to the instructor). If suspected of cheating, a student should be informed by the instructor as soon as possible. It is up to the discretion of the instructor whether a student should be allowed to finish an examination if s/he is suspected of cheating. TAs SHOULD NOT MAKE SUCH A DECISION. These incidents should immediately be reported to the Department Chair and the Department Administrator.

CLASSROOM/LABORATORY SAFETY

You should familiarize yourself with the Biology IIPP (Injury, Illness and Prevention Program), the Department CHP (Chemical Hygiene Program), and the Emergency Procedures for Spieth Hall/Biology. Copies are available in the Business Office as well as in each major teaching and

research laboratory. See Dan Rios or Paula Southard if have any questions or need additional information.

1. **Proper Attire in a Laboratory Environment** - As a TA in a lab environment, you must set a good example for students. You are required to wear closed toe shoes, no sandals. Short shorts are not allowed. Wear eye protection when appropriate. Safety glasses should have side shields.

2. **Laboratory Safety Training**
   As an employee of the University, you are required to attend Lab Safety Training provided by Environmental Health & Safety (EH&S). Please enroll in a session via their online website: http://www.ehs.ucr.edu/. If you have any questions or problems enrolling, please contact the EH&S office at 951-827-5528. Please attend this training as soon as possible. Some graduate students will need to attend additional training depending on their research project. It is very important that you maintain your own records of any training you take in addition to providing proof to your lab manager or faculty member. In the past, sometimes students have had to repeat training if they did not have their own proof that they completed it (unreliable computer records).

3. **Classroom/Laboratory Accidents** - Report all lab accidents to the business office. Fill out a "Report of Injury" form and give the completed form to Valerie in the business office. For minor cuts and abrasions, treat with first aid and send student to Student Health Center. For major accidents, call 9911 Emergency. From the phone in the Teaching Labs call x2-5222 (Campus Police). Hallway and elevator phones are connected directly to Campus Police and may be used for any emergency. Use the shower and/or eye wash if necessary. In case of a serious injury, you should prepare an outline of the circumstances that led to the injury as well as your responses to the accident. This should be done as soon as possible after the class meeting so that the memory of the chain of events is clear in your mind. This outline should include as much detail as possible.

4. **Small Chemical Spills** - A spill kit is provided in each training laboratory. If a spill kit is not found in the lab on the first day, see Jon Allen. As a Teaching Assistant, be knowledgeable about hazardous materials used in the lab. Read the appropriate "Material Safety Data Sheet," commonly referred to as MSDS. In the event of a chemical or radioactive spill or laboratory accident resulting in a potential hazard to personnel or the environment, call EH&S at x2-5528 immediately. After hours/weekends, call University Police at x2-5222. In either case, responsible officials will be dispatched to you as soon as possible.

5. **Right to Know Law** - The "Material Safety Data Sheet" is required from vendors whenever chemicals are ordered. If such materials required an MSDS, it is sent to the ordering person and must be kept in the lab. The law stipulates that MSDS must be available to users of hazardous chemicals. See your faculty member for the binder or contact Dan Rios (x2-3600), or Environmental Health & Safety (x2-5528) for the materials if you have any questions.

   While working with hazardous materials (either chemicals, micro-organisms or isotopes) in the teaching lab, your knowledge and familiarity with these materials is extremely important! In the event of an accident, your knowledge and understanding of the hazards associated with these materials will determine the appropriate response and, most importantly, may prevent injury to your students and yourself.

6. **Emergency Evacuation Procedures** - Refer to the evacuation procedures in the "Emergency Procedures for Spieth Hall/Biology" located in each laboratory. Know the best evacuation route. Bring your list of students with you. Assist those who need help. Shut the door where room is

located. Guide your students to the designated assembly area and check in with your Building Supervisor for Emergency Conditions (BSEC). Remain in assembly area and await further instructions.

7. **Disposing of Hazardous Waste**
   a. Glass: Each lab facility has a separate trash container labeled "GLASS ONLY." Place glass in these containers.
   b. Sharps: Other sharp objects (i.e., razor blades, etc.) are to be disposed of in designated containers only!
   c. Recyclable: Please deposit waste in proper containers. ("Recyclable" waste consists of paper, cardboard, etc. No food wrappers should be put into these containers.)
   d. Non-recyclable: Please deposit waste accordingly into proper containers.

Organic Waste/Animals: Make arrangements through your PI or faculty advisor to burn the material. Use double plastic bags and deposit into the freezer in the pathological incinerator room in the Spieth basement (Room 328). Carcasses contaminated with infectious organisms must be sterilized before they are packaged and placed in the freezer. Check with Environmental Health & Safety about the method to be used to sterilize the carcasses. DO NOT USE YOUR OWN METHOD. http://www.ehs.ucr.edu/

Chemical Waste: Note that laws exist that regulate disposal of hazardous material; disposal of "unknowns" is prohibited. To minimize unknowns, it is strongly recommended that you label and date the items and dispose of them before labels peel off or become illegible. Non-radioactive, hazardous waste must be placed in containers marked with the identity of the material. Also, the "Chemical Storage/Disposal Record" of Environmental Health & Safety must be completed, and is available in the Business Office. Use of radioactive materials requires users to obtain a permit through Environmental Health & Safety (see your faculty advisor). Environmental Health & Safety issues special containers to dispose of radioactive waste.
Again, consult the Department Chemical Hygiene Plan and Radioactive Waste Manuals.

Microorganisms: When human pathogens are used, check with Esther Valdez in Lab Prep.

Syringes: Laws exist establishing procedures for purchasing, storing, using, and disposing of syringes. Teaching Assistants and lab workers should be particularly careful about accountability and use of syringes in lab courses and projects under their supervision. Syringes and needles shall be stored under lock and key. After use, a hypodermic safety device should be used to destroy the needle and the plastic barrel. Broken syringes must be double-bagged and labeled "CAUTION." Place the labeled bag into the broken glass container, or other designated container, for disposal by the Custodian.

GRADUATE STUDENT FINANCIAL ASSISTANCE

Graduate Students are supported from a variety of sources. Here is information on the various types of funding and definitions of the commonly-used acronyms:

***Graduate Division Stipend**:* Usually awarded as part of a larger fellowship package, these dollars go directly from Graduate Division to the student through the Financial Aid System. The student receives a stipend payment at the beginning of the quarter.

***Graduate Student Researcher (GSR)**:* An employment title for graduate students conducting research (either independent or directed). Students may not be appointed at more than 49% during the academic year. During academic breaks and the summer, a student may be employed up to 100%.

GSR appointments at 25% or more during the academic year are entitled to GSHIP and PFR (see below). Financial support for GSR employees is provided by faculty extramural grants or departmental general funds.

Students are paid in arrears (just like other university employees) and receive a monthly check after each month of work. For example, a student who begins work in fall quarter does not receive a check until November 1.

***Teaching Assistant (TA)**:* Also known as ***Academic Student Employee (ASE)**.* This employment title is for graduate students who are teaching part of a course (normally labs or discussion sections) under the guidance of a faculty member/instructor. Students may not be appointed at more than 50% during the academic year. If they are appointed at 25% or more time during an academic quarter, they are entitled to GSHIP and PFR (see below). There are many rules that are associated with this title now due to the employee contract. See the United Auto Workers Union Contract for more information.
TA funds are distributed to the Departments by the CNAS Dean's Office. Students are paid in arrears (just like other university employees). Students are paid in arrears (just like other university employees) and receive a monthly check after each month of work. For example, a student who begins work in fall quarter does not receive a check until November 1.

***Partial Fee Remission (PFR)**:* Students who are appointed at 25% or more time during an academic quarter as a GSR or TA are entitled to PFR. This entitlement pays part (but not all) of the students' mandatory university fees. he Graduate Student Services Advisor provides Graduate Division with the names of students who are eligible for this entitlement before the student bills are generated. If an award is placed on the system after bills are generated, the student's bill will not reflect the correct amount until after the system updates.

***Graduate Student Health Insurance (GSHIP)**:* Students who are appointed at 25% or more time during an academic quarter as a GSR or TA are entitled to have their GSHIP fees paid for them. The Graduate Student Services Advisor provides Graduate Division with a list of the students who are eligible for this entitlement before the student bills are generated. The actual dollar amount of GSHIP changes as the insurance prices change from year to year. Students who have private health insurance comparable to the University's coverage can apply for waivers of the GSHIP fees. If a student has comparable health insurance coverage they may apply for waiver of the GSHIP premium by filing the appropriate paperwork with the Health Center. Deadline dates for petitioning for exemption from GSHIP are firm. Contact the Student Health Insurance coordinator at (951) 827-5683 or (951) 827-3031 for information. Please be aware that if a student is receiving any form of financial support (excluding loans), the amount of the health insurance is returned to that funding source, not the student.

***Non-Resident Tuition Remission (NRT or NRTR)**:* Non-residents of California (either Domestic or International) who are appointed at 45% or more as a GSR are entitled to have their Non-Resident Tuition paid for them.

International Students cannot establish residency and will owe Non-Resident Tuition for their entire student careers. However, when a student Advances to Candidacy, the Non-Resident Tuition is waived for a period of nine quarters, not including summer quarters.

Domestic non-resident students must establish California residency by the beginning of the second year of study. You must petition in person at the Office of the Registrar for a change of classification from nonresident to resident status. All changes of status MUST be initiated before the first day of classes for the term for which you intend to be classified as a resident. Students planning to file for residence status after their first year should talk with the Residence Deputy well before the appropriate residence determination date, preferably during their first few weeks in California.

***Fee Differential**:* The fee differential is the left-over university mandatory fee amount for a student with a PFR and GSHIP and NRTR entitlements. This covers the Graduate Student Association Fee, Recreation Center Fee, and other miscellaneous fees. This dollar amount fluctuates as these fees change. Most students are required to pay this.

***Departmental Grant In Aid (DGIA)**:* Departments or individual faculty members with unrestricted funds (many federal grants will not allow payment of student fees) can grant fellowship-like awards to individual students. This is most often used to pay the student's Fee Differential. The Graduate Student Services Advisor provides information to Graduate Division on the students who are to receive these awards, indicating the account and fund information. Graduate Division then processes the award through the Financial Aid System.

TAX INFORMATION FOR GRADUATE STUDENTS

Teaching Assistantships, Research Assistantships, and Fellowships are considered taxable income. Refer to the UCR Graduate Student Handbook for more information. Each year the Rivera Library and the Graduate Division have IRS publication materials available to students.

International students should visit the International Students and Scholars Office website for information about tax workshops and filing help.

ROOM RESERVATIONS:

Spieth/BSB/LSP Locations	➢ **Reserve online at frs.ucr.edu** o **1239 (Darwin Room)** o **3365 (Moore Room)** o **1103 and 2550 Biological Sciences (CBNS Conference room)**
Biological Science Building (additional rooms)	➢ Are reserved by emailing bnnadmin@ucr.edu. o 2101 (Conference Room) o 2101 (Conference Room)
Graduate Students and Academic Appointments:	Bev assigns office space.

BIOLOGY SHOP:

LAURIE GRAHAM – Constructs, redesigns and repairs mechanical, electronic and refrigeration equipment for teaching and research on a recharge basis - x22117 or laurie.graham@ucr.edu

FACILITIES:

LAURIE – Contact for any equipment of mechanical problems.

SYLVANA - 25903 - For problems such as lights, plumbing, or other building maintenance. Or, you can also submit a Trouble Ticket to Physical Plant through rSpace unto the “Tools” section.

HEATHER– Backup contact for the above.

TBA/BEV – Contact for any renovation or other Physical Plant billable work order.

LAB PREP STAFF:

Assistance with instructing personnel on autoclave use (Spieth), requesting service/repair on autoclaves (Spieth), short term loan of lab equipment, use of teaching labs outside of scheduled classes, trouble tickets for teaching labs. Primary receiving of purchased goods. Located in Spieth 1229; Phone: x23830 and email contact: For general inquiries: labprepbiology@ucr.edu or you can direct your concerns to a specific person: jon.allen@ucr.edu, mikyong.kim@ucr.edu, xinxia.li@ucr.edu, cora.sargent@ucr.edu, diana.diaz@ucr.edu.

If you do not find service you need, please contact Silvana in BNN front office at x25903 and she will direct you.

CENTRALIZED FACILITY FOR ADVANCED MICROSCOPY AND MICROANALYSIS (CFAMM) (B116 BOURNS HALL)

The campus has excellent resources for conducting many types of microscopy including electron microscopy. The centralized electron microscopy facility provides state-of-the-art facilities for doing transmission and scanning electron microscopy. The centerpieces of the facility are Philips scanning electron microscopes and transmission electron microscopes, which are capable of digital imaging. The facility is managed by Krassimir Bozhilov (x2- 2998 E-mail: krassimir.bozhilov@ucr.edu), who is assisted by Steve McDaniel, the biological specialist. The staff offers training on both instruments. Steve McDaniel can also train students to prepare tissue for both scanning and transmission electron microscopy on a recharge basis. The facility provides all ancillary equipment needed for tissue preparation for these instruments. You may learn more about these microscopes by visiting the microscope web-site: http://micron.ucr.edu.

MICROSCOPY CORE FACILITY

The campus has an outstanding light microscopy core facility. This facility, run by Dr. David Carter, maintains a comprehensive suite of instrumentation for fluorescence imaging and interactive experimentation, including two high resolution confocal systems (Leica SP2 UV and Zeiss 510), a high speed ocular viewing system (Meridian InSight Point) and a fully automated confocal workstation for chemical compound screening (Atto Pathway HT). In addition, the facility supports an inverted Zeiss microscope equipped for micromanipulation and microinjection and a workstation for image processing and analysis Several high performance software packages are available for image analysis. Free workshops are offered periodically for training on these instruments. For more information about the light microscopy core and training, please see http://www.cepceb.ucr.edu/facilities/facilities.htm#Microscopy

VIVARIA

Hours are 8:00 a.m.-12:00 p.m. and 1:00p.m.-5:00 p.m., M-F.

All Vivaria are under the Management of the Campus Veterinarian 200 University Office Building, (951) 827-5535

If you need to order, receive, or transport animals, you should work closely with your Vivarium Manager. Strict policies exist within the University with respect to guidelines and standards imposed by the National Institutes of Health (NIH) and the Animal Welfare Act.

Biology Vivarium - Leslie Karpinski is Manager of the Biology Vivarium (Spieth basement). E-mail: leslie.karpinski@ucr.edu. x2-5912.

Psychology Vivarium – Jim Sinclair is Manager of the Psychology Vivarium. (LSP B418) and assists in the Spieth Hall Vivarium. E-mail: james.sinclair@ucr.edu. x2-4528.

Boyce East Vivarium – Linda McCloud is Manager of the Boyce East Vivarium (Boyce Hall, 6th floor). E-mail: linda.mcloud@ucr.edu. x2-4620.

Boyce West Vivarium - Sally Scott is Manager of the Boyce West Vivarium (Boyce Hall, 6th floor). E-mail: sally.scott@ucr.edu x1-5319.

Campus Veterinarian – Dr. Akiko Sato , V.M.D., Diplomate ACLAM is our campus-wide Veterinarian, in charge of overseeing all animal care on campus (215 Univ. Office Bldg). E-mail: akiko.sato@ucr.edu. x2-5845.

Campus Vet Administrative Assistant – Gloria Gallego is the Administrative Assistant for the UCR office of the Campus Veterinarian and is responsible for issues of billing for vivarium services. She is located in room 216 University Office Building (UOB). E-mail: gloriag@ucr.edu (951) 827-6332.

Vivarium Operations Manager – Dierk Biggs, dierk.biggs@ucr.edu, (951) 827- 4812.

PH.D. DEGREE - TARGET OUTLINE

Name _____

Chair of guidance committee _____

Entered degree program _____

	Target Date	Date Completed:
Year 1 – Lab Rotations		
Meet with guidance committee	first quarter	_____
Meet with guidance committee	third quarter	_____
Annual review of progress by Major Professor	third quarter	_____
Year 2 – Establish Home Lab		
Name qualifying committee	Fall quarter	_____
Research proposal to committee	Winter quarter	_____
Annual review of progress by Major Professor	Spring quarter	_____
Oral qualifying examination	Spring or summer	_____
Name dissertation committee	Spring quarter	_____
Year 3		
Meet with dissertation committee	Spring quarter	_____
Annual review of progress by Major Professor	Spring quarter	_____
Year 4		
Meet with dissertation committee	Fall quarter	_____
Annual review of progress by Major Professor	Spring quarter	_____
Year 5		
Meet with dissertation committee	Fall quarter	_____
Dissertation to committee	Winter quarter	_____
Annual review of progress by Major Professor	Spring quarter	_____
Defend dissertation	Spring quarter	_____

Neuroscience Graduate Program Guidance Committee Approval Form

This form is to be completed by end of the Spring quarter in residence.

Name :_____ Date:_____

I request the following members be appointed to my Guidance Committee. They have all agreed to serve on this committee.

_____, Chair

_____, Committee Member

_____, Committee Member

Approval:

Guidance Committee Chair: _____

Graduate Advisor: _____

NRSC GRADAUTE PROGRAM-PROFESSIONAL DEVELOPMENT REQUIREMENT

GRANT AND PROFESSIONAL WRITING

Part 1 (Written) Qualifying Exam
Students prepare a research proposal assigned by the Guidance Committee on topics relevant to the student's research area. The format should follow those of major funding agencies (e.g., NIH or NSF). The student is required to demonstrate an ability to integrate material from original research papers and review articles and to discuss avenues for future research. **The grant proposal must be given to members of the oral exam committee at least two weeks prior to the oral exam** (Part II). See pg. 3 for further details. DEGREE REQUIREMENT.

ENTM 242
Development of Hypotheses and Research Design (3) F, W, S. Lecture, 1 hour; discussion, 1 hour; written work, 3 hours. Teaches fundamentals of research topic selection, development of hypotheses, and selection of experimental designs. Students prepare full-length federal grant proposals, then review and rank them in grant panel review format. OPTIONAL, NOT REQUIRED.

Fellowship Application Preparation and Research Proposal Writing
In Fall 2011 Maggie Curras-Collazo (Graduate Advisor, Recruitment & Admissions) and Mike Adams (Director of NRSC Graduate program) organized a workshop on fellowship proposal writing aimed at NSF Graduate Research Fellowship program, EPA STAR and Ford fellowship programs. The workshop targeted first- and second-year students in the NRSC Graduate program primarily. However, one student in MA lab and 4 from the Graduate Student Mentoring Program, sponsored by the Graduate Division, that were mentees or peer mentors of MCC also participated. Altogether, 11 students were provided training over 2 meeting times (about 8 hrs total). The workshop involved presentation of written proposals by applicants and evaluation and critiques by all participants, and instructors. Instructors also provided one-on-one feedback before and after the workshop. After and before One NRSC student, Matt Valdez, received an NSF GRFP Fellowship award. This activity is being planned for 2012 and faculty have suggested that it be continued in subsequent years as a formal course in professional development for graduate students.

PUBLIC SPEAKING

NRSC 289
Special Topics in Neuroscience (Seminar). Students take this seminar twice per year. During Fall, students are required to give oral presentations of papers related to a topic chosen by the instructor. During Spring, they are asked to present their own laboratory research, serving as practice for their oral Qualifying Exam (Part II). REQUIRED COURSE.

NRSC 200A
Fundamentals of Neuroscience: Molecular and cellular mechanisms (3) F. Lecture, 3 hours. In addition to submitting a written term paper, students are required to give an oral presentation to the class on their term paper topic. This is often a student's first oral presentation in the graduate program. REQUIRED COURSE.

NRSC 200C
Students are required to make a presentation on a behavioral neuroscience model system not covered in class. The presentations occur during the last few classes of the quarter. Each presentation should be designed to last a maximum of 40 minutes. The student is responsible for providing at least 1 original article about the model at least 1 week prior to the presentation. Everyone is required to read the papers and should actively participate in discussions.
REQUIRED COURSE.

PEDAGOGY

TADP training and 2 quarters of required TA experience. As is other UCR graduate programs, all NRSC students are required to complete TADP training prior to their first TA assignment. Two quarters of TA experience are required for the Ph.D. DEGREE REQUIREMENT.

OTHER

Outreach to K-12
NRSC faculty have promoted and facilitated opportunities for graduate student involvement in outreach. Since 1999 NRSC program faculty have organized social and educational events during Brain Awareness Week that have engaged the UCR community. More recenltly, graduate students have been empowered to assist and, in 2012, plan and conduct these events. In March 2012 graduate students under the auspices of the NRSC Graduate Student Association (GSA) organized social and educational events associated with the 2012 Brain Awareness Week. This event included poster presentations, games and activities, and free food/drinks, activities that targeted the local neuroscience community of faculty, graduate students and graduate students and postdocs. Faculty members K.R. and MCC assisted the graduate students in planning and MA provided subsidies that made this large scale event possible. Over 100 persons (of which 60 were UG students) attended this event. These outreach activities by graduate students provides a framework and culture addressing the broader impact requirements of research proposals funded by NSf and other extramural agencies.

THE NEUROSCIENCE GRADUATE PROGRAM

-REQUIREMENTS-

ENTRANCE REQUIREMENTS:

___Calculus (Math 9A-9B)
___Physics (Phys 2A-2B-2C)
___General Chemistry (Chem 1A-1B-1C)
___Organic Chemistry (Chem 112A-112B)
___General Biology (Biol 5A-5B)
___Genetics (Biol 102)
___Statistics (Stat 100A-100B)

_____at least 20 quarter-units among the following areas: Biochemistry; Cell Biology; Molecular Biology; Physiology; Behavioral Biology; Learning and Memory; Perception; Computer Science; and Neuroscience; Neurobiology; Physiological Psychology, with laboratory.

SPEAK TEST:
Clear Pass ☐
Conditional Pass ☐

REQUIREMENT I (Core Courses)

_____NRSC/PSYC 200A_____NRSC/PSYC 200B_____NRSC/PSYC 200C – Fundamentals of Neuroscience

REQUIREMENT II
At least one course from the following:

RESEARCH METHODS

_____NRSC 201 – Graduate Neuroscience Laboratory (preferred)
_____PSYC 233 – Research Methods in Cognitive Science
_____PSYC 211 – Statistical Inference

_____CBNS/PSYC 120L – Undergrad, Neuroscience Laboratory
_____CBNS/PSYC 130L – Undergrad, Computational Neuroscience Laboratory

_____CHEM 221C
_____CHEM 221D
_____CHEM 125 – Instrumental Methods

_____CHEM 221A – Advanced Analytical Chemistry
_____PHYS139L –Electronics for Scientists

At least two courses or one course sequence from any of the following three areas:

1.BEHAVIORAL SCIENCE AREA
_____CBNS/PSYC 127 – Behavioral Control Systems
_____PSYC 112 – Neural Mechanisms of Animal Behavior
_____PSYC 203A – Experimental Psychology
_____PSYC 203B
_____PSYC 203C

2. PHYSIOLOGY AND PHARMACOLOGY AREA
_____BMSC 210A_____BMSC 210B Human Physiology
_____ENTM 201 – Insect structure and function
_____BMSC 220 – Neurosciences
_____CBNS 120 – Cellular Neuroscience

3.BIOCHEMISTRY, CELL & MOLECULAR BIOLOGY AREA
_____BCH 110A,_____BCH 110B,_____BCH 110C General Biochemistry
_____BIOL/CMDB 200,_____BIOL/CMDB 201 Molecular Biology and Physiology
_____CHEM221B

_____BCH/CHEM 241 Bioorganic Chemistry
_____BIOL 203 – Cellular Biophysics
_____GEN 203 – Genetics
_____CMDB 203 – Developmental Biology

REQUIREMENT III – Must enroll in the Colloquium in Neuroscience each quarter it is offered in residence.

_____NRSC 287 – Colloquium in Neuroscience

REQUIREMENT IV – Must enroll in two seminars Special Topics in Neuroscience per year until passing the oral qualifying exam. One seminar per year is required after passing the qualifying exam.

_____NRSC 289 – Special Topics in Neuroscience

REQUIREMENT V – Teaching Assistant service is required for two quarters.

1. Course_____Quarter/Year_____; (2) Course_____Quarter/Year _____

WRITTEN QUALIFYING EXAM PROCEDURE
NEUROSCIENCE GRADUATE PROGRAM

After completing course requirements, the students will be given a qualifying examination in two parts. Work on Part I, the written exam, should begin by the 4th quarter in residence. The written exam consists of a research proposal relevant to the research area of the student. The format should follow current guidelines provided by either the NIH or NSF. Guidelines provided below are examples based on the NIH format. Forms and information having to do with budget, resources, animal protocols, hazardous waste management, etc. are not included. Students must demonstrate an ability to integrate material from primary research literature, provide information regarding background and significance, and delineate a detailed experimental research plan with clearly defined hypotheses and a consideration of potential pitfalls and alternative approaches. The proposal must be provided to all members of the qualifying exam committee at least two weeks prior to taking Part II, the oral exam. Students are expected to discuss at least the broad outlines of their research proposal with each of their qualifying exam committee members well in advance of submitting their written proposals.

Students are encouraged to complete the qualifying examination by end of the third academic year in residence. If the examination has not been scheduled prior to the start of the tenth quarter, a detailed justification must be provided to the Graduate Advisor for enrolled students.

After completing course requirements, the students will be given a qualifying examination in two parts. Work on Part I, the written exam, should begin by the 4th quarter in residence. The written exam consists of a research proposal relevant to the research area of the student. The format should follow current guidelines provided by either the NIH or NSF. Guidelines provided below are examples based on the NIH format. Forms and information having to do with budget, resources, animal protocols, hazardous waste management, etc. are not included. Students must demonstrate an ability to integrate material from primary research literature, provide information regarding background and significance, and delineate a detailed experimental research plan with clearly defined hypotheses and a consideration of potential pitfalls and alternative approaches. The proposal must be provided to all members of the qualifying exam committee at least two weeks prior to taking Part II, the oral exam. Students are expected to discuss at least the broad outlines of their research proposal with each of their qualifying exam committee members well in advance of submitting their written proposals.

Students are encouraged to complete the qualifying examination by end of the third academic year in residence. If the examination has not been scheduled prior to the start of the tenth quarter, a detailed justification must be provided to the Graduate Advisor for enrolled students.

Specific Instructions for Research Proposals:

The research proposal, which serves as the written portion of the Qualifying examination, should be an original proposal written by the student in cooperation with the faculty supervisor. Supervisors are encouraged not to contribute significantly to writing of the proposal, but rather to provide advice and guidance.

The format should be consistent with the current NIH or NSF format for grant proposals, except for items specified below such as page limits. The following format is an example template:

1. Project summary or abstract (0.5-1 page single spaced).
2. Specific Aims (1 page single spaced).
3. Research Strategy, which has three divisions: Significance, Innovation and Approach (15-25 pages single-spaced).
4. Bibliography (no limit).

Margins and font: All margins should be 1 inch. Font size should be 11 or 12 pt.

The official new format for NIH proposals has much shorter page restrictions, but the Neuroscience faculty require the student to provide an IN-DEPTH discussion of the background literature relevant to the project, a thorough description of preliminary data, and an in depth research design and methods. Consequently, the page limit is extended to 15-25 single-spaced pages.

Synopsis of section content:

1. The project summary should summarize the goals of the project, the hypotheses and potential significance as it pertains to human health or advancement of scientific research.
2. Specific Aims: this section starts with an introductory paragraph describing the overall topic and stating why the proposal is novel and significant. Make a clear statement regarding the overarching goal of the project. Follow with a list of Specific Aims with relevant hypotheses. End with a summary (short few sentences) describing what is to be learned from the project's results and how this could lead to a future direction.
3. Research Strategy: Thoroughly describe why the research is important, what the goals and hypotheses are, preliminary data, exactly how experiments will be conducted, including a precise description of the experimental design, proposed analyses, statistical procedures (including a consideration of power and, if applicable, corrections for multiple comparisons), and detailed methods. This includes a thorough literature review (background).

4. Bibliography is Literature Cited anywhere within the proposal.

SUGGESTIONS FOR WRITING THE GRANT:

ABSTRACT/SUMMARY: The purpose of the Project Summary/Abstract is to describe succinctly every major aspect of the proposed project. It should contain a statement of objectives and methods to be employed, the significance and innovation of the proposed research, relevance to public health (for NIH-format proposals), and broader impacts. Use plain language that can be understood by a general, lay audience.

The abstract should include:

-a brief background of the project;

-specific aims, objectives, or hypotheses for the ENTIRE proposal;

-the significance of the proposed research (all proposals) and relevance to public

health (NIH format proposals)

- the unique features and innovation of the project;

-the methodology (action steps) to be used;

-expected results; description of how your results will affect other research areas.

SPECIFIC AIMS: The purpose of the specific aims is to describe concisely and realistically the goals of the proposed research and summarize the expected outcome(s), including the impact of the proposed research will exert on the research fields involved.

Content: The Specific Aims section should cover:

- broad, long-term goals;

- the specific objectives and hypotheses to be tested;

- summarize expected outcomes; and

-describe impact on the research field.

Suggestions:

1. Generally, the Specific Aims section should begin with a brief narrative describing the long-term goals or objectives of the research project and the hypothesis to be tested. This is followed by a numbered list of Aims.

2. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice,

address a critical barrier to progress in the field, or develop new technology.

3. Make sure your specific objectives or hypothesis are clearly stated, are testable, and adequately supported by citations and preliminary data. Be sure to explain how the results to be obtained will be used to test the hypothesis.

4. *Be as brief and specific as possible*. For clarity, each aim should consist of only one sentence. Use a brief paragraph under each aim if detail is needed. Most successful applications have 2-4 specific aims.

5. Include a brief statement of the overall impact of the research studies.

6. This is the most important page of the entire application since it may be the only section the unassigned reviewers (when this is actually submitted to an agency for funding) read to understand approach, impact, and innovation.

RESEARCH STRATEGY (Overview)

Purpose: The Research Strategy/Plan is organized into three sections: Significance, Innovation, and Approach.

Content: The Research Strategy should answer the following questions:

- What do you intend to do?
- Why is this worth doing or the significance of the research? How is it innovative?
- What has already been done in general, and what have other researchers done in this field? Use appropriate references. What will this new work add to the field of knowledge?
- What have you (and your collaborators) done to establish the feasibility of what you are proposing to do?
- How will the research be accomplished? Who? What? When? Where? Why?

RESEARCH STRATEGY SECTION 1: SIGNIFICANCE

Purpose: The Significance section should explain the importance of the problem or describe the critical barrier to progress in the field that is being addressed. Explain how the proposed research project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields. Describe how the concepts, methods, etc., that drive this field will be changed if the proposed aims are achieved. PLEASE ALSO DO YOUR BACKGROUND RESEARCH DISCUSSION HERE.

Content: The Significance section replaces the previous Background and

Significance section. It should cover:

-the state of existing knowledge, including literature citations and highlights of relevant data;

-rationale of the proposed research;

- explain gaps that the project is intended to fill; and

-potential contribution of this research to the scientific field(s) (all proposals) and public health (NIH-format proposals).

Suggestions:

1. Make a compelling case for your proposed research project. Why is the topic important? Why are the specific research questions important? How are the researchers qualified to address these?

2. Establish significance through a careful review of published data in the field, including your own. Avoid outdated research. Use citations not only as support for specific statements but also to establish familiarity with all of the relevant publications and points of view. It is worthwhile to remember that this chapter can eventually be written as a review and submitted for publication.

3. Clearly state public health implications (for NIH-format proposals) and provide a timeline for completion of each aim.

RESEARCH PLAN PART 2: INNOVATION

Purpose: Explain how the application challenges and seeks to shift current research or clinical practice paradigms. Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions. Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or interventions.

Content: The innovation section should include the following:

-Explain why concepts and methods are novel to the research field.

-Focus on innovation in study design and outcomes. Summarize novel findings to be presented as preliminary data in the Approach section.

Suggestions

1. Describe how the application differs from current research or clinical practice paradigms.

2. Stress any innovations in YOUR experimental methods (e.g., new strategies, research methods used).

3. Summarize novel findings to be presented as preliminary data in the Approach section.

RESEARCH PLAN PART 3: APPROACH

Purpose: The purpose of the approach section is to describe how the research will be carried out. This section is crucial to how favorably an application is reviewed. THIS SECTION SHOULD INCLUDE PRELIMINARY DATA AND RESEARCH AND DESIGN AND METHODS FROM THE OLD NIH STYLE.

Content: The APPROACH section should include the following:

- preliminary studies and data
- detailed experimental design for each aim
- a description of methods, data collection and analyses to be used to accomplish the specific aims of the project;
- a discussion of expected results, potential difficulties and limitations and how these will be overcome or mitigated;

Suggestions:

1. Preliminary data can be presented as the first part of the Approach section.

2. Number the sections in this part of the application to correspond to the numbers of the Specific Aims. For example: 4. APPROACH/ 4.1 PRELIMINARY DATA/ 4.2 AIM 1 EXPERIMENTAL DESIGN/ 4.3 AIM 1 POTENTIAL PROBLEMS AND ALTERNATE STRATEGIES/ 4.4 AIM 2 EXPERIMENTAL DESIGN/ 4.5 AIM 2 POTENTIAL PROBLEMS AND ALTERNATE STRATEGIES/ 4.6 METHODS. Embed expected results in a subsection under design for each aim. It is a good idea to reiterate your hypotheses here).

Annual Student Progress report
Neuroscience Graduate Program

NAME OF STUDENT:_____**DATE PREPARED:** _____

PROGRAM: M.S. ☐ **Ph.D.** ☐ **DATE ENTERED PROGRAM:** _____

QUALIFYING EXAM: WRITTEN _____ **ORAL**_____

DISSERTATION TITLE:

_____

_____

EXPECTED COMPLETION DATE: _____

ACADEMIC PROGRESS

(Comment on course work, deficiencies, research, etc.)

COURSE WORK (Please comment if student has completed core courses and proposed course work to be taken):

Have deficiencies been satisfied? ☐ **Yes,** ☐ **No, If no please state the deficiencies that need to be met:**

RESEARCH: (Please describe the students research accomplishments this year and indicate goals for next year):

RESEARCH: ***cont.***

ACCOMPLISHMENTS: (Please indicate any special accomplishments, meetings attended, awards, etc. received by the student this year):

SUGGESTIONS/COMMENTS:

_____ _____

STUDENT SIGNATURE **MAJOR PROFESSOR/CHAIRMAN**

_____

GRADUATE ADVISOR

NRSC QUALIFYING EXAM PROCESS

Part I:

The student will prepare a research proposal on questions and specific aims relevant to the research area chosen. The format should follow current guidelines provided by either the NIH or NSF. Forms and information specific to particular agencies are not required (e.g., budget, resources, animal protocols, hazardous waste management). Regarding page limits, the current 12-page limit specified by NIH is flexible for the qualifying exam proposal, and may be exceeded in the interest of providing a thorough literature review relevant to the specific aims proposed.

Students must demonstrate an ability to,

1. Integrate material from primary research literature
2. Provide information regarding background and significance
3. Delineate a detailed experimental research plan with clearly defined hypotheses and a consideration of potential pitfalls and alternative approaches

Vital:	The proposal must be provided to all members of the qualifying exam committee at least two weeks prior to the oral exam.
Expectations:	Students are expected to discuss at least the broad outlines of their research proposal with each of their qualifying exam committee members well in advance of submitting their written proposals.
Graduate Division Resources:	General Requirements and the Qualifying Exam Committee

Timeline	
7th Quarter:	Students are encouraged to take the qualifying examination prior to the seventh quarter in residence (not including summer quarters).
9th Quarter:	If the examination has not been scheduled prior to the start of the ninth quarter, a detailed justification must be provided to the Graduate Advisor.
Written Qualifying Exam Procedure	See pages 30-35 of the NRSC Student handbook for a more detailed description of the Written Qualifying Exam procedure.

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NRSC QUALIFYING EXAM PROCESS

Part II:

The oral qualifying examination conducted by the Qualifying Committee in accordance with the regulations set forth in the UC Riverside Graduate Student Handbook. The Qualifying Committee, consisting of at least five members, will be nominated by the Graduate Advisor in consultation with the student and faculty supervisor and must be approved by the Graduate Dean. The Faculty Supervisor typically is not a member of the Qualifying Committee, although exceptions can be made under appropriate circumstances. Under no circumstances will the faculty supervisor serve as Chair of the Qualifying Committee.

The Committee will consist of:

1. Chairperson (not the PI)
2. Three members
3. Outside Member (not from the Neuroscience Program)

Vital:	The Committee reads and evaluates the research proposal and conducts the examination.
Expectations:	The student is expected to articulate and defend the research proposal as well as answer general knowledge questions.
Graduate Division Resources:	General Requirements and the Qualifying Exam Committee

Presentation	
Duration: ~2-3 hours	Oral exams typically last ~2-3 hours, consisting of a short (20-30 minutes) presentation of the research proposal by the student, followed by a question and answer period.
Attempts:	No more than two attempts to pass the oral examination will be allowed.
Written Qualifying Exam Procedure	See pages 30-35 of the NRSC Student handbook for a more detailed description of the Written Qualifying Exam procedure.

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NRSC QUALIFYING EXAM PROCESS

Go to R' Web and select R'Grad to nominate your Oral Qualifying Committee
At least 4 weeks prior

Complete the NRSC Oral Exam Request Form
(Wufoo Form)
At least 4 weeks prior

Review your Degree Audit in R'Web
Notify Antonio of any discrepancies

Antonio will email the student to stop by and sign
Graduate Division's Form 2

Graduate Division will email you regarding the nomination of your Qualifying Committee

Provide your research proposal to all members of the qualifying exam committee
At least 2 weeks prior to the oral exam.

Antonio will email the student and committee chair **Form 3 and the instructions** for the Oral exam.

Take your Oral Exam

Return Form 3 back to Antonio

Make sure all the committee members have signed

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NRSC DISSERTATION DEFENSE PROCESS

Working on the Dissertation

Once a student has advanced to candidacy by passing the Qualifying Examinations, a Dissertation Committee of three faculty members will be nominated by the student and supervisor and appointed by the Graduate Dean. The Dissertation Committee is chaired by the faculty supervisor. The Dissertation Committee meets with the student at least once per year to review progress and provide advice. It is the responsibility of the Dissertation Committee to evaluate the dissertation, provide advice, and eventually sign off on the completed document. The student must provide a draft of the dissertation at least 3 weeks prior to the Dissertation Defense.

Dissertation Defense

Before the dissertation is given final approval, the student must present a public lecture on the dissertation research to faculty and students in the program. Following the public lecture, the student will meet with the Dissertation Committee for an oral defense in accordance with regulations of the Graduate Division.

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NRSC DISSERTATION DEFENSE PROCESS

Review the
Dissertation/Thesis Filing Checklist on Graduate Division's Website

Review your
Degree Audit in
R'Web
Please notify Antonio if there are any discrepancies
At least 4 weeks in advance

Complete the
NRSC PhD Dissertation Defense Request Form
(Wufoo Form)
At least 4 weeks in advance

Dissertation Defense

Antonio will email you and your committee chair **Form 5** and the instructions for the defense.

Provide a draft of the dissertation to the Dissertation Committee

At least 3 weeks prior

Return Form 5 back to Antonio.

Please ensure all the committee members have signed.

UC RIVERSIDE UNIVERSITY OF CALIFORNIA

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