UC RIVERSIDE | Neuroscience Graduate Program

STUDENT HANDBOOK

2024-2025

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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.

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INTRODUCTION

Neuroscience is a multidisciplinary approach to understanding nervous systems at levels ranging from the molecular and cellular to behaviors of 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 2-4 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. At least 2 quarters of lab rotations are required. 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 THE 1ST QUARTER	• Plan 2-4 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 THE 3RD (SPRING) QUARTER	• Finish rotations • Identify your faculty supervisor (this is mandatory) • Set up the faculty guidance committee. Review the Guidance Committee Form on page 25
BEGINNING OF THE 4TH (SUMMER) QUARTER	• Begin work on the research proposal in consultation with the faculty supervisor
END OF THE 6TH QUARTER	• Complete coursework • Complete the written research proposal. • Set up the oral qualifying committee
7TH-10TH QUARTER	• Pass the qualifying examination
END OF THE 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 quarters 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 the student's responsibility to identify a faculty supervisor/mentor and find a laboratory to carry out their doctoral work before the end of the first academic year.** It is the prerogative of the program to dismiss students that are unable to find a lab and/or faculty mentor by the end of Spring Quarter of the first year. 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 advise 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. First year students must enroll and participate in the weekly Research Lunch series during Fall quarter. 4. Enrollment and participation in the Colloquium in Neuroscience (NRSC 287) each quarter in academic residence. 5. Enrollment and participation in Special Topics in Neuroscience (NRSC 289, 2 units) during Fall and Spring Quarters a. Following completion of the qualifying exam, students are required to enroll in NRSC 289 only once per year. 6. 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. a. 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.
English proficiency	● Any student who was born in a country where English is not the official language (if you are unsure if English is considered the official language of the country, please refer to this resource), or is born in the US but indicates on their application that English is not their first language, must demonstrate English proficiency before performing duties as a TA or Associate In. ● Click here for more information on ways to demonstrate english language proficiency
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 time4table 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 (see Appendix) 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

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 meetings, enabling neuroscience graduate students to take a proactive role in their education. Graduate students interested in the neurosciences are encouraged to join NGSA.

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: https://graduate.ucr.edu/regulations-and-procedures

FILING FEE

Students who have completed all degree requirements except for filing their dissertations/theses or sitting for their master's comprehensive exams are eligible for Filing Fee status during their final quarter of residence in lieu of paying student services fees. Students do NOT have to use Filing Fee status. For students writing dissertations or theses, the dissertation/thesis advisor must certify that the committee has read and approved a draft of the manuscript, that only minor revisions need to be made, and no more than 12 hours of faculty time will be required. Students on Filing Fee status pay only one-half of the Student Services Fee. Visit Office of the Registrar for current fees: https://registrar.ucr.edu/tuition-fees/quarterly-fees.

Only one quarter on Filing Fee status is allowed. Students who fail to complete their degree programs must register and pay full fees for the following quarter. Students on Filing Fee status may purchase Health Insurance Separately through the Student Health Insurance Section of the Campus Health Center (https://studenthealth.ucr.edu/) if they wish to be covered.

A candidate on Filing Fee status cannot be employed with any student employment title code (such as GSR, TA, or Associate). Since a candidate on Filing Fee status does not pay registration fees or enroll in units, they are not entitled to University student privileges or use of University facilities except for the Library.

Applications for Filing Fee can be found on R'Grad and accessed through rweb.ucr.edu.

LEAVE OF ABSENCE

A Leave of Absence is intended to allow the temporary interruption of the student's academic program. Leaves are granted for the following reasons:

- Serious illness or temporary disability.
- The need to concentrate on a job or occupation not directly related to the degree program.
- Family responsibilities.

To be eligible for a Leave of Absence, students must have the approval of their Graduate Advisor, be in good standing, and have been enrolled for at least one quarter. Leaves are not normally granted for more than one year. Since students on leave do not pay fees, they may not use University facilities or make demands on faculty time. Students on leave are ineligible for fellowships, research grants, or financial aid. A student on leave may not work on any other UC campus. Students on leave cannot take qualifying exams or receive credit for academic work done during the leave period.

Applications for Leave of Absence can be found on R'Grad and accessed through rweb.ucr.edu.

LAPSE OF CANDIDACY

Candidacy for the degree may be lost after withdrawing or failing to register at the end of a leave of absence. Unless a Leave of Absence has been granted, students are expected to register for every academic quarter

once their graduate studies begin. For the quarter in which the degree is actually awarded, students must either be registered or on Filing Fee status.

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. Applicants might also be considered if they have a strong background in Cognitive and/or Psychological Science. 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 Psychology, with laboratory.

GRADUATE DIVISION

- Graduate Division Website: https://graduate.ucr.edu/
- Graduate Regulations and Procedures: https://graduate.ucr.edu/regulations-and-procedures
- Graduate Petitions and Forms: https://graduate.ucr.edu/petitions-and-forms
- Review the Graduate Studies Section of the UCR General Catalog: https://registrar.ucr.edu/registering/catalog

GRADUATE TUITION AND FEES

Please visit the Office of the Registrar online to view the current academic year fees per quarter.

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 50% 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). See the United Auto Workers Union Contract for more information.

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 or they should consult with their Supervisor to TA in the summer.

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, their 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

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

Students may be nominated for the following fellowships, if and when they become available:

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

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

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

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 Doctoral 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. Martin Riccomagno Graduate Advisor for Enrolled Students	martinmr@ucr.edu 1111 Biological Sciences Bldg. (951) 827-4682	Responsible for oversight and advising of enrolled students, including annual progress reports.
Dr. Kelly Huffman Graduate Advisor for Admissions/Recruitment	kelly.huffman@ucr.edu Psychology Bldg. (951) 827-4805	Responsible for recruitment of incoming graduate students and assembly of financial packages in consultation with the Graduate Dean. Organizes recruitment weekend (February).
Dustin Domingo Graduate Student Services Advisor (GSAC/CNAS)	dustin.domingo@ucr.edu Batchelor Hall 1140 (951) 827-0897	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	TBD	

CNAS GRADUATE STUDENT AFFAIRS CENTER

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. Find the Center staff directory here: https://cnasgrad.ucr.edu/people/staff.

GRADUATE DIVISION REQUIREMENTS

For more 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 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: https://gsa.ucr.edu/.

UCR GRADUATE COMMUNITY COURSE/eLEARN

You will be enrolled in the UCR Graduate Community course through eLearn. This course is used to post announcements regarding funding opportunities, campus workshops and events pertinent to graduate students. The discussion 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.

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.

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 (https://ehs.ucr.edu/training). 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: https://ucrcard.ucr.edu/.

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 the Graduate Division website: https://studentforms.ucr.edu/app/home.

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 https://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 expired 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.

ENGLISH LANGUAGE PROFICIENCY

To be appointed a TA, any student whose native language is not English must demonstrate English proficiency.

- Any student who was born in a country where English is not the official language (if you are unsure if English is considered the official language of the country, please refer to this resource), or is born in the US but indicates on their application that English is not their first language, must demonstrate English proficiency before performing duties as a TA or Associate In. This requirement includes not only international students but also citizens and permanent residents.
- Students with an Undergraduate or Graduate Degree in the US or English-Speaking Institution.
    - A student can demonstrate proficiency if they have earned their undergraduate or graduate degree from an institution where English was the sole language of instruction according to the World Higher Education Database within 5 years prior to admission to a graduate program at UCR.
    - Students who have graduated a higher education institution in the US or another English-speaking institution will need to complete the following steps:
        - Go to the World Higher Education Database website.

        - On the right-hand side under “HEI Quick search,”select the country where you earned your degree.
        - Select the university the degree was earned. Under “Language” it should say English. If it does not, the student will need to take an English Competency Exam (see below).
        - Email a screenshot of the university, with the “Language” section showing English, to Patrick Napier (patrick.napier@ucr.edu).
- English Competency Exam
    - Students who have not completed an undergraduate or graduate degree in the US or English-Speaking Institution, must take one of the following English competency exams: TOEFL iBT Scores, TSE/SPEAK, IELTS, or Versant. The following chart describes the language proficiency designation of the student based on the score:
    - Those who score a conditional pass can be appointed as a TA but may be required to complete additional English Pronunciation remediation should there be documented substantiation of poor pronunciation performance.
        - Individuals with a conditional pass can be appointed as TAs for up to three quarters (four under unusual circumstances) 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 based on:
            - 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, videos);
            - Evidence of a good-faith effort to improve English skills; and
            - Relative proximity to the level of competence represented by a clear pass.

For more information please refer to this link.

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 they are 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. Please consult with Environmental Health & Safety (https://ehs.ucr.edu/) for updated recommendations and policies

1. **Proper Attire in a Teaching 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. Shorts are not allowed. Wear eye protection when appropriate. Safety glasses should have side shields.

2. **Research Laboratory Safety Training:**

    Safety standards are established by your supervisor in consultation with Environmental Health and Safety (EH&S, https://ehs.ucr.edu/). Your Supervisor is ultimately responsible for lab and lab personnel safety. It is important you understand your lab specific rules and ask specific questions to your supervisor to be fully aware of lab safety in your lab. Any injury, accident or spill should be immediately reported to your supervisor.

As an employee of the University, you are required to attend Lab Safety Training provided by EH&S. Please enroll in a session via their online website: https://ehs.ucr.edu/training. 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 the business office. For minor cuts and abrasions, treat with first aid and send student to Student Health Center. For major accidents, call 911 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. Contact 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" 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:**
   Please refer to the https://ehs.ucr.edu/ website for an up to date list on how to dispose of different 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.
   e. *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. https://ehs.ucr.edu/
   f. *Chemical Waste*: Note that laws exist that regulate the 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 new 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.
   g. *Microorganisms*: When human pathogens are used, check with Esther Valdez in Lab Prep.
   h. *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.

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

Most rooms can be reserved online at frs.ucr.edu.

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.

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 contacts below.

For general inquiries, you may contact labprepbiology@ucr.edu. Otherwise, you may direct your concerts 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 the service you need, please contact Silvana in BNN front office at x25903 and she will direct you.

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 V 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 https://microscopycore.ucr.edu/.

VIVARIA

Hours are 8:00 am - 12:00 pm and 1:00 pm - 5:00 pm, 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.

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 University Office Building). Email: akiko.sato@ucr.edu, x25845.

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). Email: gloriag@ucr.edu, (951) 827-6332.

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

GENOMICS, PROTEOMICS, METABOLOMICS AND BIOINFORMATICS CORE FACILITIES

Keen Hall's instrumentation facilities are run by a PhD-level Academic Coordinator, who conducts training workshops and seminars on a regular basis and may participate in the research of our principal investigators. Please refer to this website for updated information.

PH.D. DEGREE - TARGET OUTLINE FOR 5 YEAR COMPLETION

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	Second Quarter	_____
Annual review of progress by major professor	Third Quarter	_____
Year 2 - Establish Home Lab		
Name guidance committee	Fall Quarter	_____
Name qualifying committee	Winter Quarter	_____
Annual Review of progress by guidance committee	Spring Quarter	_____
Name dissertation committee	Spring Quarter	_____
Oral qualifying examination (Optional timeline)	Summer Quarter	_____
Year 3		
Meet with dissertation committee	Spring Quarter	_____
Annual review of progress by guidance committee	Spring Quarter	_____
Year 4		
Meet with dissertation committee	Fall Quarter	_____
Annual review of progress by guidance committee	Spring Quarter	_____
Year 5		
Meet with dissertation committee	Fall Quarter	_____
Dissertation to committee	Winter Quarter	_____
Annual review of progress by guidance committee	Spring Quarter	_____
Defend dissertation	Spring Quarter	_____

Neuroscience Graduate Program Guidance Committee Approval Form

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

Name:_____ Date:_____

I request the following members to 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 GRADUATE 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), and use the long grant format (not the fellowship grant format). 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.

BMSC 260 A, B, C: Topics in Biomedical Research
The course will lead graduate students through the process of developing skills in communicating with peers, reading scientific literature and learning how to apply the information to the project. Students led by a faculty facilitator will explore the theoretical and practical aspects of developing hypothesis, designing and interpreting experimental models of disease, collecting data and analyzing/validating results in support of their research projects. This course will also provide graduate students with training in written skills: BMSC 260A focuses on writing a review article; BMSC 260B and C focus on writing an NIH grant proposal. 2 units/quarter. OPTIONAL, NOT REQUIRED.

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.

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 IN FALL AND SPRING BEFORE QUALIFYING EXAM IS SUCCESSFULLY COMPLETED. REQUIRED YEARLY IN **EITHER** FALL OR SPRING AFTER ADVANCING TO CANDIDACY.

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. In 1999 the NRSC program faculty organized social and educational events during Brain Awareness Week that engaged the UCR community. More recently, graduate students have been empowered to assist and, in 2012, plan and conduct these events. Since March 2012, Brain Awareness Day (BAD) is entirely a UCR student-led endeavor: BAD is conceived, organized, and executed by UCR students at every level. Since 2022, NGSA has partnered with UCR Youth Programs at the UCR Student Recreation Center to expand our event offerings beyond science demonstrations and lab tours to include physical activities such as rock climbing, ropes course, and outdoor games. The executive planning committee consists of UCR Neuroscience Graduate students who manage cross-campus collaborations with UCR Recreation, solicit participation from local schools, recruit UCR student volunteers, and secure funding to make the event happen. On the day, nearly 100 UCR student volunteers consisting of graduate and undergraduate students from the Biomedical Sciences, Entomology, and Neuroscience programs man booths with scientific demonstrations, lead students on campus tours, and show participants the inside of working research labs. Teachers from each participating school accompany their student groups as chaperones. A number of UCR faculty also participate in Brain Awareness Day through our “Talk to a Professor” booth, as well as hosting tours of their research areas to give students a look at scientific laboratories.

Purpose: The purpose of Brain Awareness Day is to provide local middle and high school students in the Riverside community, typically underrepresented in the sciences, the opportunity to tour UCR research labs, interact with scientists, and engage in exciting science experiment demonstrations. Brain Awareness Day highlights neuroscience principles through hands-on activities designed to get students thinking critically about the power of their own brains. Participants will get the chance to meet, talk to, and form connections with scientists from their local community to see firsthand the rewarding opportunities afforded by the pursuit of higher education. By combining tours of research labs, interactive science demonstrations, and engaging physical activities into an educational, immersive science festival, this event inspires participants to pursue higher education by showing students how interesting science can be outside of the classroom.

Impact and Reach: In 2022, we had 120 students from the Riverside community attend Brain Awareness Day. In 2023, that number increased to roughly 400 students. The students that Brain Awareness Day 2024 will serve primarily come from Title I schools with high percentages of socioeconomically disadvantaged students. For instance, 95.1% of students from Badger Springs Middle School (BSMS) are socioeconomically disadvantaged, and 26% of them are English learners, and 1% are foster youth. University Heights Middle School has 92.1% of students who are socioeconomically disadvantaged, 23.1% are English learners, and 1.1% are foster youth. 89.2% of students from Palm Middle School are socioeconomically disadvantaged, 12.5% are English learners, and 1.2% foster youth. Corona High School students are 80.7% socioeconomically disadvantaged, 19.5% are English learners, and 0.4% are foster youth (all data from 2022 California Dashboard).This event enables the participation of students from low-income families who would not be able to attend otherwise due to scheduling, transportation, and other challenges.

APPENDIX: REQUIREMENTS, QUALIFYING EXAM AND FORMS

NEUROSCIENCE GRADUATE PROGRAM
REQUIREMENTS FOR GRADUATION

- **Complete core course requirement**: NRSC 200 A, B and C
- **Complete and pass two elective courses** - selected by the student in consultation with the major professor and/or guidance committee.
- **Enroll and participate in the weekly Research Lunch series** during Fall quarter of the first year.
- **Enroll and participate in the Colloquium in Neuroscience (NRSC 287)** each quarter in academic residence.
- **Enroll and participation in Special Topics in Neuroscience (NRSC 289)** during Fall and Spring Quarters. Following completion of the qualifying exam, enroll in NRSC 289 once per year.
- **Complete the teaching requirements:** A minimum of two quarters of service as a Teaching Assistant is required.
- **Pass Qualifying Exam**
- **Write and successfully defend doctoral thesis.**

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 NIHR01 type or NSF research grant. The short fellowship type grant format should not be used. 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 the end of **the third academic year** in residence. It is mandatory to take the qualifying exam by the end of the tenth quarter (Fall quarter of the fourth year). 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. Under extenuating circumstances the graduate advisor, in consultation with the Program Director will approve an extension.

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 R01 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, following the R01 format (12 pages). Additional pages can be used to provide more extensive background.
4. Bibliography (no limit).

   Margins and font: All margins should be 0.5 to 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 12-20 single-spaced pages in total.

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 possibl*e. 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

ACADEMIC YEAR:	**Annual Research Progress Evaluation (ARPE)** **Dissertation/Thesis Committee Report**

Last Name:	**First Name:**

Graduate students must consult with and prepare a report for their Thesis/Dissertation Committee at least once yearly. The Chair in consultation with the committee shall use the form below to evaluate the student.

Overall Performance	*Please evaluate the student in each of the following areas:*				
	Acquired	***Being Developed***	***Needs Improvement***	***Not Applicable***	***Not Yet Able to Assess***
Background knowledge of the field	☐	☐	☐	☐	☐
Ability to critically assess the literature	☐	☐	☐	☐	☐
Ability to independently broaden the relevant knowledge base	☐	☐	☐	☐	☐
Continuing acquisition of theory and skills	☐	☐	☐	☐	☐
Knowledge of relevant language(s)	☐	☐	☐	☐	☐
Ability to develop a research plan	☐	☐	☐	☐	☐
Ability to carry out the research plan	☐	☐	☐	☐	☐
Skill in analysis/interpretation of data	☐	☐	☐	☐	☐
Skill in applying appropriate research method	☐	☐	☐	☐	☐
Ability to develop an argument in sustained passages of writing	☐	☐	☐	☐	☐
Ability to prepare and give a conference presentation	☐	☐	☐	☐	☐
Understanding the peer review process	☐	☐	☐	☐	☐
Ability to develop & write grant proposals	☐	☐	☐	☐	☐
Understanding of career options and ability to develop a career plan	☐	☐	☐	☐	☐
	Satisfactory	***Being Developed***	***Needs Improvement***	***Not Applicable***	***Not Yet Able to Assess***
Quality of writing	☐	☐	☐	☐	☐
Quality of oral presentations	☐	☐	☐	☐	☐
Making adequate Research Progress	☐	☐	☐	☐	☐

Comments	*Please complete each section with detailed information and comments:*

Are there any concerns about the research project?	
Are there any concerns about the student's performance?	
Have any concerns and recommendations from the previous ARPE been addressed?	
Specific recommendations and plans for the next academic year	

Guidance/Dissertation/Thesis Committee

Name	Signature	Date

Graduate Student

Name	Signature	Date

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 hypothesis 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).
10th Quarter	If the examination has not been scheduled prior to the start of the tenth quarter (Fall of 4th year), a detailed justification must be provided to the Graduate Advisor.
Written Qualifying Exam Procedure	See pages 31-35 of the NRSC Student Handbook for a more detailed description of the Written Qualifying Exam procedure.

Part II

The oral qualifying examination is 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.

NRSC QUALIFYING EXAM PROCESS

Go to R'Web and Select R'Grad to complete the "Nomination for Oral Qualifying Exam Committee" Form (At least 4 weeks in advance.)

⇩

Review your Degree Audit in R'Web (Notify Dustin Domingo of Any Discrepancies.)

⇩

Provide your research proposal to all members of the Qualifying Exam Committee (At least 2 weeks prior to the oral exam.)

⇩

Wait to receive approval from Graduate Division and then schedule your Oral Qualifying Exam.

⇩

Tale your Oral Exam

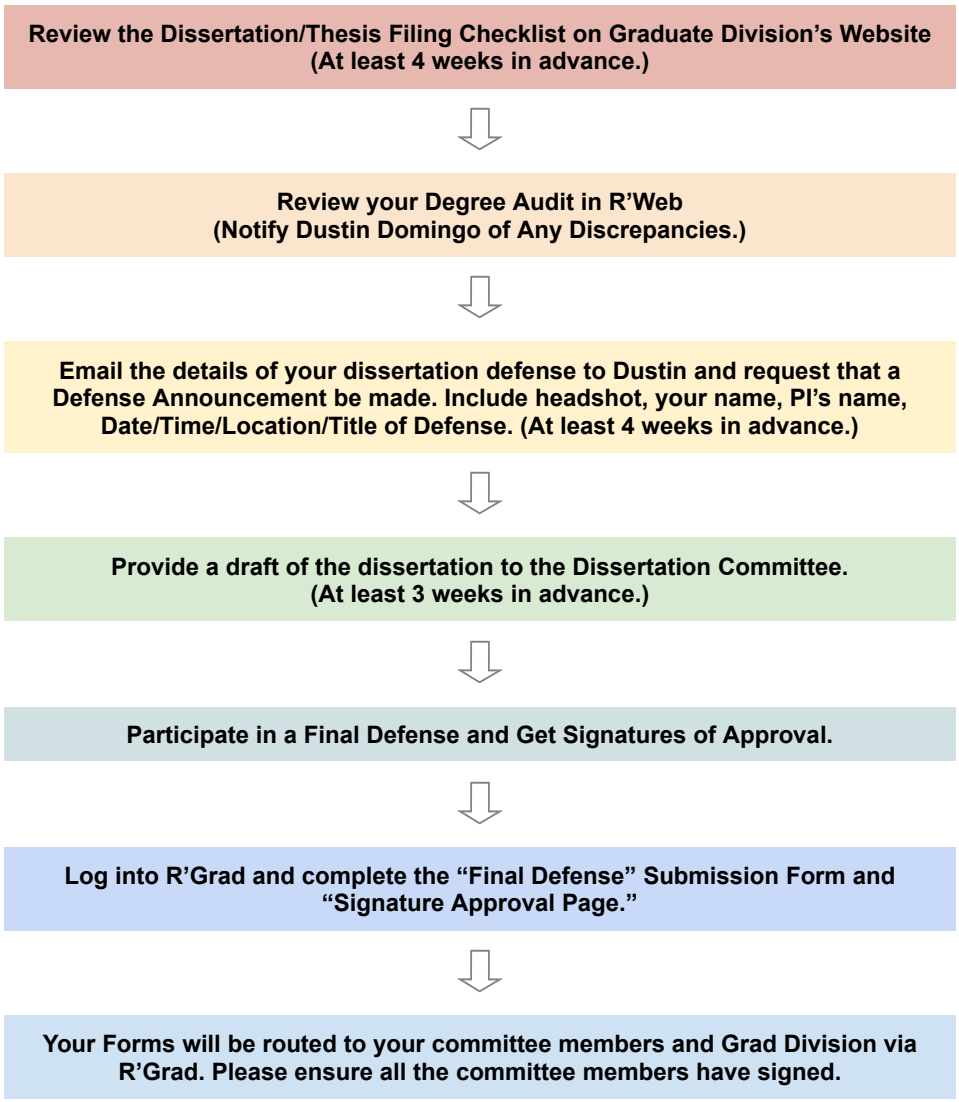
⇩

After you complete your Oral Qualifying Exam, log into R'Grad and complete the "Report of Oral Qualifying Exam" and the "Report of Exam or Degree Requirement" (to report written qualifying exam results).

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.