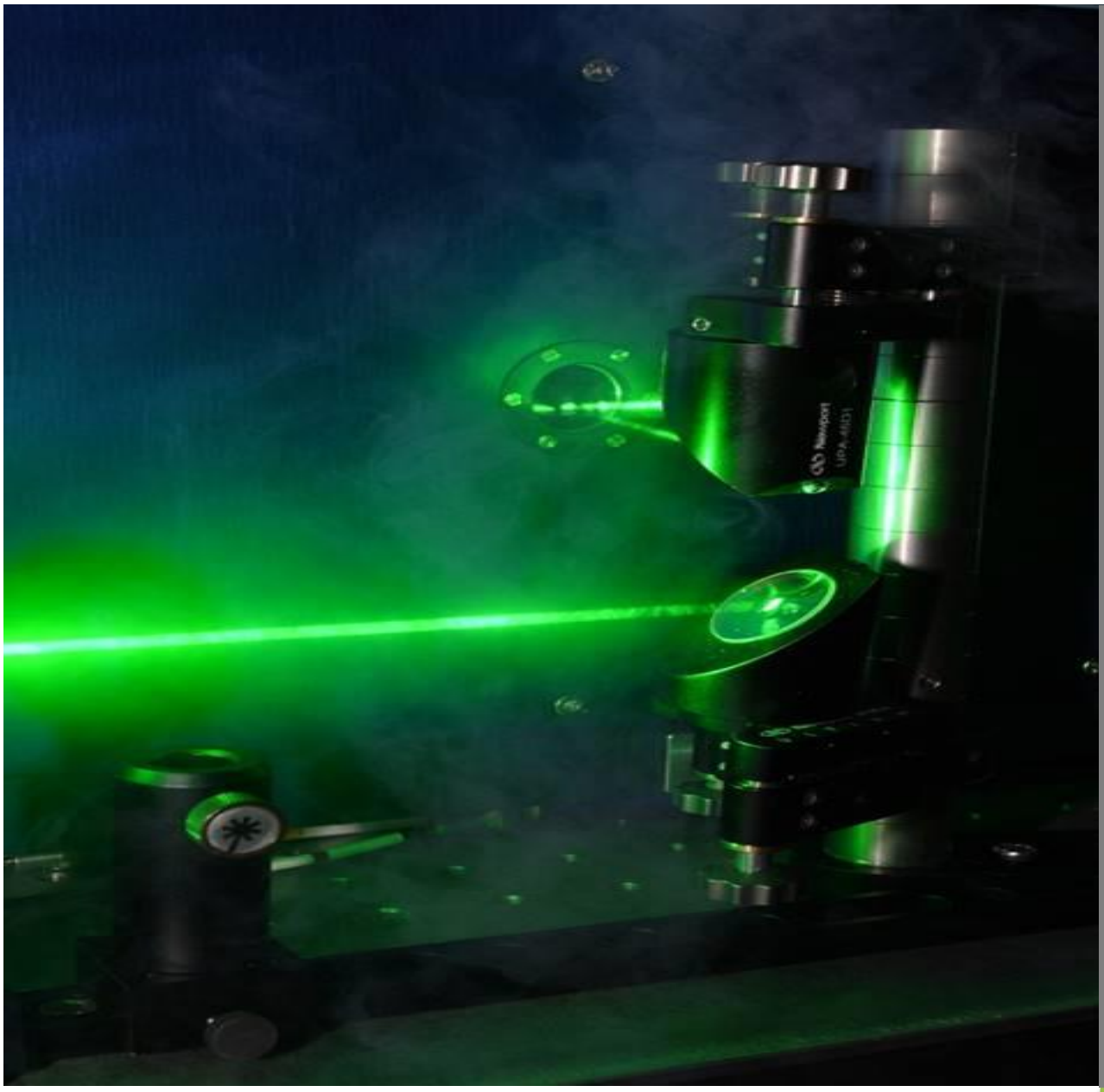

Biophysics

GRADUATE STUDENT HANDBOOK

2022-2023

UNIVERSITY OF CALIFORNIA
UCRIVERSIDE

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I. INTRODUCTION AND CONTACT INFORMATION

A. Graduate Program in Biophysics

The Graduate Program in Biophysics (BPHY) is an interdisciplinary program with participating faculty from the departments of Biochemistry; Botany and Plant Sciences; Chemistry; Evolution, Ecology and Organismal Biology; Mathematics; Physics and Astronomy. Areas of current research include:

- Biological Electron Transfer
- Biological Imaging
- Computational Modeling of Biological Systems
- Macromolecular Structure Determination
- Neurobiophysics and Protein Engineering
- Spectroscopic Methods

Given the diversity in BPHY, graduate students have the opportunity to incorporate a wide range of disciplines into their training experience. Programs of study are tailored to the interests and goals of individual students.

This handbook is designed to aid BPHY students to adapt to their new academic environment and to design a personalized and stimulating program of study. Because the practices of different graduate programs at UC Riverside often vary, the BPHY student should carefully read this manual and consult with their Graduate Advisor or Student Services Advisor when questions arise. It is also recommended that graduate students refer to the **UCR Graduate Student Handbook**, available on the Graduate Division website for general policies at: http://graduate.ucr.edu/forms/GSHandbook.pdf.

Additional information can be found on the BPHY website: http://biophysics.ucr.edu/. Refer to the Graduate Division website (http://graduate.ucr.edu/) for the Graduate Advisor's Manual, Policies and Procedures Governing Graduate Student Employment, and the Graduate Division Calendar.

B. Program Contact Information

Program Director:

Dr. Roya Zandi, Ph.D. Department of Physics and Astronomy,

roya.zandi@ucr.edu (951) 827-2096

The Program Director is involved in administrative and academic decisions for the BPHY program. The Program Director is responsible for overseeing the processing of graduate student applications, recruitment of admitted students, and chairs the Recruitment and Admissions Committee. The Director also chairs the BPHY Executive Committee.

Graduate Advisor for Continuing Students:

Dr. Roya Zandi, Ph.D. Department of Physics and Astronomy,
roya.zandi@ucr.edu (951) 827-2096

The Graduate Advisor for Continuing Students is responsible for overseeing the academic progress of all BPHY students and chairs the BPHY Curriculum Committee. The Advisor approves Course Programs, Guidance Committees, Qualifying Exam Committees, and Dissertation Committees. The Advisor is also actively involved with students having academic problems (i.e., academic probation), and acts as a mediator to find solutions to nonproductive student-faculty interactions.

BPHY Student Services Advisor:

Marlene Garcia, CNAS Graduate Student Affairs Center, 1140C Batchelor Hall, Marleneg@ucr.edu (951) 827-4429

The BPHY Student Services Advisor supports the faculty and students in the BPHY program. This includes assisting students with enrollment and registration, financial issues, and academic progress. The Student Services Advisor is also the first contact for applicants to the program and manages the files during the admissions process.

BPHY Financial and Administrative Officer:

Melissa Gomez, Statistics, 1337 Olmsted Hall, 951-827-9351, melissa.gomez@ucr.edu

The Financial and Administrative Officer oversees the financial accounts and provides administrative support to the BPHY program.

BPHY Financial Services Analyst:

Lisa Diaz, Statistics, 1337 Olmsted Hall, 951-827-6009, lisa.dia@ucr.edu

The financial services analyst is the primary contact for travel, entertainment, purchasing, and oversees contract and grant management.

II. THE ACADEMIC PROGRAM

A. Guidance Committee

At the beginning of the second quarter of your first year, you should begin thinking about choosing your Guidance Committee immediately after you have a Major Professor. You should have your Guidance Committee before the beginning of your second year in the program. Please speak to your graduate advisor if you are having difficulty finding one. If a student has chosen a major professor, he/she should be the Guidance Committee chairperson. Otherwise, the chairperson for this Committee should be in a field that is closely allied with the student's research interests. The committee is composed of the chairperson and two additional BPHY faculty. The student must ask each faculty member to serve on their committee to ensure participation. Please use the form https://ucrbsgsac.wufoo.com/forms/bphy-guidance-committee-nomination-form/ to send your committee member nominations to the Student Services Advisor. The final Guidance Committee selections will be subject to approval by the Graduate Advisor.

This Guidance Committee advises the student on a course program. In addition, it will evaluate academic progress and research productivity on an annual basis. The committee serves in this guidance role until the student passes the Written and Oral Qualifying Exams. After the qualifying exam, the Dissertation Committee will serve the guidance role for the dissertation research.

Upon choosing a laboratory for Ph.D. research, it may be appropriate for the Guidance Committee Chairperson and members to be changed. If needed, please use the form https://ucrbsgsac.wufoo.com/forms/bphy-guidance-committee-nomination-form/ to send your committee changes to the Student Services Advisor.

B. Course Program

The Graduate Advisor will review each student's previous academic records and offer recommendations to the Guidance Committee; this will ensure that the student has fulfilled all Entry Requirements. If remedial classes are necessary, they will be accommodated in the Course Program.

It is essential that the student meet with the Guidance Committee to ensure that the student is taking the appropriate courses. Core classes are offered every year, so plan accordingly to ensure all required classes are taken within the first two years of study.

The student, in consultation with his/her Guidance Committee, will plan a Course Program consisting of Entry Requirements, Core Classes and Supplemental Classes. A copy of this plan is submitted on the *Course Program Form* to the Student Services Advisor for inclusion in the student file.

C. Laboratory Rotations and Choice of the Major Professor

Laboratory rotations are not mandatory but are encouraged. This is a good opportunity for a student to determine if his/her interests match the faculty members of choice. They are an excellent opportunity not only to find the optimal “fit” in a lab but also to make more scientific connections on campus. However, if a student has already chosen a laboratory for his/her thesis work, rotations are optional.

Rotations are to be five weeks in length. Under certain circumstances, rotations may be one-quarter in length. The first two laboratory rotations should be selected by the first week of the quarter of entry at UC Riverside. The Graduate Advisor will help the student in the selection of up to four five-week rotations or two one-quarter locations (or a combination of five-week and one-quarter rotations, totaling no more than two quarters).

It is important to plan ahead. Some laboratories are in high demand. It is hoped that the rotations will give each BPHY student a feeling for the diversity of the BPHY Program. Once the student has selected a major professor, the Program Director and Graduate Advisor should be notified, and the Guidance Committee altered, if necessary.

If circumstances arise that later necessitate a change in major professor, the Graduate Advisor should be consulted early. These matters can often be resolved quickly and confidentially with the approval of both the student and faculty member. When necessary, the Graduate Advisor will seek the aid of the Guidance or Dissertation Committee.

BPHY Agreement to serve as Major Professor:

Below you will find the link to the form that needs to be completed once you have found a lab and a faculty member has agreed to serve as your major professor.

This form can be completed at any point during your first year but no later than the end of your lab rotations for new students. If you are a continuing student and need to change your lab and major professor.

BPHY Agreement to serve as major professor form:

Link: https://powerforms.docusign.net/a286d63a-b695-4af0-ac10-b1e96c4975c7?env=na3&acct=662bc3a1-ffe6-496e-b95c-f9ce7808bd42&accountId=662bc3a1-ffe6-496e-b95c-f9ce7808bd42

D. BPHY Seminar

The BPHY 250 seminar (Advanced Topics in Biophysics) must be taken every quarter. This seminar consists of off-campus invited speakers and also BPHY faculty chalk-talks. The seminar schedule is announced each quarter and attendance is mandatory. Any absences should be discussed with the Program Director in advance.

E. Teaching Requirement

All BPHY students are required to teach **two quarters** in a biophysics-related course during their tenure as a graduate student. This is a minimum requirement and students are encouraged to teach additional quarters to gain valuable experience. This requirement is usually fulfilled by appointment as a Teaching Assistant (TA). (It is unlikely you will be a TA in the first year.) This involves teaching of laboratory and/or discussion sections in courses with a substantive biophysics component. This is accomplished under the supervision of the faculty in charge of the assigned course. A GPA of 3.00 is required to be a Teaching Assistant. No TA may have more than 7 units of incomplete grades. TAs must be making acceptable progress to the degree and be enrolled in 12 units/quarter.

Before entering the classroom as a teaching assistant, the University of California requires that all graduate students complete some form of instructional training. At UCR, students receive this formal training through the Teaching Assistant Development Program (TADP) run by the Graduate Division. More information in including orientation dates is available at http://tadp.ucr.edu.

Upon entry to UCR, all non-native speakers of English are required to pass the SPEAK exam (test of spoken English). This test is given by UCR Extension, and is used to determine if English as a Second Language (ESL) courses are required. You can sign up for this test at the front desk of the UCR Extension Center and the test fee is $50. If a student receives a clear pass on the exam, he/she will be allowed to serve as TA without additional ESL classes. If the student receives a provisional pass on the exam, she or he must take ESL classes while serving as a TA. The test is offered prior to Fall, Winter and Spring quarters each year, but the beginning of Fall quarter is the best time to take the SPEAK test.

All TAs will be evaluated by the students in the course and may also be evaluated by the professor or academic coordinator administering the course. BPHY students who do not receive acceptable evaluations from the students will be required take additional TADP training if they want to be eligible to TA in the future. BPHY students are to act in a professional manner at all times. They must interact with moral and ethical integrity with all students, faculty and associate TAs. TA requirements vary between courses and instructors. Instructors and TAs must develop an effective means of frequent communication and must abide by University rules and standards.

F. Financial Support

Many students are awarded Graduate Division fellowship(s) upon acceptance to the BPHY. In many cases Graduate Student Research Assistantships (GSRs) provided by the student's major professor will be the primary source of funding. In most cases the major professor will also provide funding during the summer term. Some funds are distributed directly through the BPHY program. To qualify for funding from the BPHY, students must be in good academic standing. The funding is merit-based and is, therefore, competitive. Ask the Program Director, Graduate Advisor, or your major professor if you have questions about your funding situation.

Students are encouraged to take independent steps to find alternative sources of funding. A demonstrated ability to secure funding is viewed very positively in academia and industry, and plays an important role in professional development. Students can find information about alternative funding sources through the Graduate Division website (www.graduate.ucr.edu/FinSuptoc.html) and the

Financial Aid office. You may also consult with the Program Director and Graduate Advisor regarding fellowships in your research area.

Additional UCR funding sources include:

Dissertation Research Grants: Graduate Division awards for students who have advanced to candidacy. This award is to help students defray their research expenses. There is one competition per quarter. Application deadlines are available from Graduate Division.

Dissertation-Year Fellowship Awards (DYFA): Graduate Division award of stipend plus fees, a research allowance, and a travel allowance. This award is for domestic students (including U.S. residents) who demonstrate high potential and promise for a career in teaching and research. Students are required to complete their Ph.D. within the coming academic year (by the end of the award period). The proposal requires an academic research plan. Student must be nominated by the BPHY Director. The deadline is late Winter quarter.

Graduate Student Association Mini-Grant: The UCR Graduate Student Association awards small grants to defray the costs of travel to meetings. Information about these grants and the application deadlines should be obtained from the Graduate Student Association (www.gsa.ucr.edu). BPHY student advice on the protocol for obtaining and using travel grants is provided in a separate section of this handbook.

The College of Natural and Agricultural Sciences (CNAS) awards several scholarships, awards and prizes each year to graduate students. The application deadline is usually in May. Information about these can be obtained from the CNAS Dean's office or from the Graduate Advisor.

Extramural funding sources include:

National Science Foundation Graduate Research Fellowships: Three years of support for graduate research. Applicants may have completed no more than 12 months of full time graduate study as of August 31 in the year they apply. (This means that students just starting their second year of graduate study in the fall are eligible to apply.) The application deadline is in the fall. See the NSF website for details (www.nsf.gov).

National Science Foundation Doctoral Dissertation Improvement Grants: Awards to students who have advanced to candidacy. Funding is for financial needs that cannot be met. Please check the NSF website for details. Applicants need not be U.S. citizens. The deadline is in the fall (www.nsf.gov).

American Association of University Scholars: Dissertation fellowship grants to women in the final year of their doctoral degree (www.aauw.org). All female students in BPHY should qualify for this award.

Society of Sigma Xi: A society of biologists that supports graduate student study at UCR.

G. Grades and Academic Probation

All Ph.D. students must maintain a GPA of 3.00 or better. If a fellowship recipient's GPA falls below a 3.00, the student is likely to lose funding from the fellowship. A minimum GPA of 3.00 in all upper division and graduate courses related to the degree is required for graduation. Retention of a student in BPHY with poor academic standing requires compelling reasons. Any student on Academic Probation should meet quarterly with the Guidance Committee. Students should not underestimate the importance of maintaining a good academic standing. Students must also make satisfactory g in the laboratory.

H. Academic Dishonesty and Scientific Misconduct*

Academic Dishonest

The faculty of the University of California, Riverside, believe that the vast majority of our students maintain high standards of academic honesty. However, occasional incidents of academic dishonesty do occur. Many such acts are committed through ignorance. Often, a student accused of cheating will vehemently deny the charge, claiming that he/she did not know the act violated established policy. The following statement is intended to clarify what constitutes academic dishonesty and to describe the procedures and consequences if a student is accused of and found guilty of breaking the rules that apply to all UC Riverside students. At UCR, academic dishonesty is a serious offense and will not be tolerated. See UC Policies and Regulations that are published every year in the online General Catalog.

Definition of academic dishonesty

Cheating: It is cheating to copy from another student's examination, quiz, laboratory work, or homework assignment. The use of pre-prepared notes or other resources, in any form, during an examination, unless the instructor expressly authorizes such use, also constitutes cheating. If a student knowingly allows someone else to copy from their homework, laboratory work, or examination, they are in violation of section 102.01. Revising a work after its final evaluation and representing the revised version as being the original work is cheating. Forging or otherwise unauthorized changing of an earned grade is also academically dishonest. Arranging for someone else to take an examination under your identification also constitutes an act of cheating. In this last instance, both parties are liable.

Plagiarism: According to Webster's Dictionary, plagiarism is the act of stealing and passing off as one's own the ideas or words of another--without properly referencing the original source. Please note that the faculty will pay attention not to whether you meant to plagiarize, but whether you did plagiarize. Additionally, submitting the same paper twice or fulfilling the requirements of two subjects with one paper is academically dishonest. In short, one can plagiarize oneself and be sanctioned for the violation. You may use ideas from other sources, but you must paraphrase and document their use with citations, usually in the form of attributed quotations, literature cited, etc.

Unauthorized Collaboration: Collaboration occurs when a student works with other students to study, do lab work, review books or develop a presentation or report. Students must receive very clear permission from the instructor to participate in collaborations. What one instructor may view as collaboration may be seen as cheating by another. The important thing to note is that if the limits of collaboration are not clear, it is the student's responsibility to ask the instructor for very clear and specific direction.

Manufacture of Data: It is academically dishonest to manufacture or deliberately alter data submitted in connection with laboratory reports, term papers, thesis research, publications, other written material, etc.

Scientific Misconduct

Integrity in research and scholarly activities is the responsibility of the entire academic community. Scholars work in an environment in which there is an important sense of trust. Published material is assumed to have been obtained during the author's investigations. Falsification or fabrication of such data is intolerable. Each scientist, and the University, is responsible for promoting practices that discourage scientific misconduct.

Definition of scientific misconduct

In general terms, scientific misconduct can be recognized to cover two broad categories, the distinction being in terms of the focus of the dishonesty. The first arises where there is fabrication or falsification of the research results; the second arises where there is plagiarism, misquoting or other misappropriation of the work of other researchers. Colluding in or concealing the misconduct of others is also misconduct. Honest errors do not constitute scientific misconduct. Here are examples of scientific misconduct:

Falsification of Data: Ranging from fabrication to deceptive selective reporting of findings and omission of conflicting data, or willful suppression and/or distortion of data.

Plagiarism: The appropriation of the language, ideas, or thoughts of another and representation of them as one's own original work.

Violation of Generally Accepted Research Practices: Serious deviation from accepted practices in proposing or carrying out research, improper manipulation of experiments to obtain biased results, deceptive statistical or analytical manipulations, or improper reporting of results.

Other Miscellaneous Inappropriate Behavior: These include: inappropriate accusation of misconduct; withholding or destruction of information relevant to a claim of misconduct, or retaliation against persons involved in the allegation or investigation; and misappropriation of funds or resources for personal gain.

*Portions adapted from the policy statements of the UCR Plant Pathology Graduate Program Handbook, University of Maryland, United Kingdom Research Councils, and "Misconduct in Science" by V. Hammer.

I. Annual Progress Evaluation – Due 3rd Friday of September, Every Year

BPHY students are required to meet with their Guidance Committee or Dissertation Committee to ensure that adequate progress toward the degree has been made. This meeting is essential for completion of the *Annual Review of Graduate Student Progress*. It also ensures that Committee members are aware of the advances and problems encountered by the student over the year. The Graduate Advisor will review all evaluations and specific recommendations concerning the student's progress will be made to the Graduate Division. Justification for retention of students that have exceeded normative time (15 quarters) or on academic probation will be based on this annual evaluation.

Students will fill out the first two portions of the annual progress report and prepare a detailed summary of his/her research progress (2-5 pages only; figures may be included). These documents will be submitted to the Committee one week before the annual meeting. At the meeting, the student will give a ~15 minute oral presentation on their progress, starting with what their goals were for the past year and ending with their goals for the next year. The Committee will complete the Evaluation Form (bottom portion) and the student and Committee members will sign it. The completed Evaluation Form, along with the Research Summary, will be submitted to the Graduate Student Services Advisor who will obtain the signature of the Graduate Advisor before July 15 of each year.
Form link: https://na3.docusign.net/Member/PowerFormSigning.aspx?PowerFormId=20a2021e-a2c5-4239-bce8-30d06616872c&env=na3&acct=662bc3a1-ffe6-496e-b95c-f9ce7808bd42&v=2

The system of holding regular committee meetings allows the student to gain input from Committee members and ensure that the student is on the track to success. These meetings provide the student an opportunity to present any extenuating circumstances that may have adversely impacted productivity in the past year (i.e., health-related matters, unusual personal circumstances, financial difficulties, or student-faculty relationships). If the student-faculty relationship has been difficult, the student should discuss the issues with the Graduate Advisor prior to the Committee meeting and the student will be given an opportunity to voice a grievance to the Committee in the absence of the major professor.

Year One: The student shall form and meet with the Guidance Committee to discuss the student's progress in the Ph.D. program. The student will have nearly completed the three quarters of classes and laboratory rotations. A major professor should have been chosen; short-term and long-term research goals should be discussed to orient the Guidance Committee to the nature of the research project.

Year Two: The student should have completed all or a majority of classes for the Ph.D. in Biophysics. The student will give a short oral presentation of research progress to the Committee. Short-term and long-term goals should be discussed. The time for the Written and Oral Qualifying Exams should be established. Most students will have completed their Qualifying Exams by the start of the fall quarter in the third year of residence.

Year Three: The student should have completed the Qualifying Exams and advanced to candidacy. The student will form and then present a detailed description of research progress to the Dissertation Committee.

Year Four: The student should have made major strides to the completion of the dissertation research. It is anticipated that the student will be able to relate a probable date of completion of the Dissertation requirements.

Year Five: The student should complete their Dissertation requirements. It is strongly advised that during their final year of study, BPHY students meet frequently with their Dissertation Committee (once per quarter). This will ensure that the student will have met all of the research directives required for completion of the Ph.D. and that there is complete agreement on the nature and extent of the dissertation research. When the quarter for the dissertation defense is approaching, a student may elect to register for "Filing Fee Status." This status allows for a one-time reduction in fees but imposes many limitations in student employment, laboratory use and student/faculty contact.

J. Qualifying Exam

The Qualifying Exam is generally taken between the fourth and seventh quarter of residence in BPHY. The timing is dependent on completion of the student's course program. The student must have completed ALL course work requirements prior to the written and oral qualifying exams.

The Qualifying Committee consists of five members. Four of the members should be BPHY Program faculty, with one member from outside the program. Please use the following form to send your Qualifying Exam Committee Nominations to the Student Services Advisor. The Graduate Advisor will review the nominations, and the final list will be forwarded to the Graduate Dean for approval. https://ucrbsgsac.wufoo.com/forms/BPHY-oral-qual-exam-committee-nomination-form/

To aid students in the Qualifying Exam process, three documents have been assembled. The *Student Guideline for the Qualifying Exam* (Section III) will inform the student about Qualifying Committee nominations, Dissertation Research Proposal requirements, and the nature of the written and oral exams. The *Recommended Procedures for Chairs of BPHY Qualifying Exams* (Section III) will inform the students and exam chairs of the logistics of the written and oral exams.

K. Dissertation Committee

The Dissertation Committee should be composed of the student's major professor and two other members of the BPHY. When considered necessary, a fourth Dissertation Committee member may be added. The committee members should be chosen carefully to ensure maximal guidance. Under unique circumstances, a faculty member outside of the BPHY or a professor from another institution might be included as a member. This is subject to approval by the Graduate Advisor and Graduate Division.

The Dissertation Committee must be chosen either before or shortly after the oral exam. The Chair of the Dissertation Committee (Major Professor) must be reported on the form that records the student's performance on the qualifying exam. The remaining members may be nominated within several weeks following the exam and may be submitted to the Student Services Advisor using the following form: https://ucrbsgsac.wufoo.com/forms/BPHY-dissertation-committee-nomination-form/

Failure to nominate the remaining members of the committee within several weeks of the exam will result on a hold on the student's enrollment for the next quarter.

The Dissertation Committee assumes the responsibilities of the Guidance Committee after the student has advanced to candidacy. The Dissertation Committee will meet at least once each year to evaluate the student's research progress. A dissertation acceptable to all committee members must be submitted based upon independent, original research. Before approval of the dissertation, the student is expected to present her/his research at a public Dissertation Defense Seminar.

L. Normative Time

Students are expected to complete their degree requirements within normative time. At UC Riverside, normative time is the period of full-time registration required to earn the degree. Assuming that the student enters BPHY with no course deficiencies or other remedial work, normative time for the Ph.D. is 15 quarters. Students that exceed normative time will be carefully monitored by the Graduate Division, Graduate Advisor, and Dissertation Committee, to ensure adequate progress toward the degree is made.

M. Dissertation Preparation and Defense

A dissertation acceptable to all committee members must be submitted based upon independent, original research. It is therefore advisable to meet frequently with the Dissertation Committee during the final year of research. The committee may request that the student use the format of a specific journal, within the guidelines of the Graduate Division. The writing process will frequently take three to six months to complete. The schedules of the Dissertation Committee Members and Graduate Division deadlines must be taken into consideration.

1. The Graduate Division has strict guidelines for the formatting of the Ph.D. thesis; students should acquire the Graduate Division handbook for preparation of the dissertation before writing their thesis. (for details see: http://www.graduate.ucr.edu/Dissertation.html)

2. The deadlines for review of the dissertation format and deadlines for degree conferral vary with each quarter. Please check these deadlines carefully on the Graduate Division calendar. The Student Services Advisor can help if you have questions.

3. Committee members are expected to examine the dissertation during the drafting as well as the final version. The student is expected to provide each committee member with a hard copy of the dissertation for review prior to the defense and a hard copy of the final version, upon request.

Before approval of the dissertation, the student is expected to present her/his research at a publicly announced Dissertation Defense Seminar. The seminar can be presented in the BPHY Seminar series. Contact the Student Services Advisor well in advance for this arrangement.

N. Career Guidance

Students are encouraged to consider their next career move in advance of graduation. In most cases the decision will be in consultation with the major professor and other faculty. In many cases, students arrange for a postdoctoral position six months to one year prior to graduation. UCR hosts a Careers Service Center for graduate students. An online website (www.careers.ucr.edu) provides current information on job opportunities.

III. THE QUALIFYING EXAM

A. Student Guidelines for the Qualifying Exam

1. When are you ready for your qualifying exam?

The exams are generally taken at the end of the student's sixth quarter (second year), although this timing is dependent on the course work essential for the student's program. The student must have completed **ALL** course work requirements prior to the written and oral qualifying exams. The Graduate Advisor and the Chair of the Qualifying Exam Committee will check the student's file to ensure that he/she can proceed to the next step. The student should meet individually with each examination committee member to discuss the materials that the student is responsible for during the written and oral qualifying exams.

2. Composition of the Qualifying Exam Committee

The Qualifying Committee consists of five members. Four of the members should be BPHY Program faculty. The student should select the members of the Qualifying Exam Committee with the aid of the major professor and Graduate Advisor. The selection is subject to approval by the BPHY Graduate Advisor and Graduate Division. All committee members must be members of the Academic Senate. *The student's major professor is not permitted to serve on this committee. Any Academic Senate member may be present at the oral exam.* Use the following form to submit your nomination for the Oral Qualifying Exam Committee: https://ucrbsgsac.wufoo.com/forms/BPHY-oral-qual-exam-committee-nomination-form/

3. Scheduling of the Qualifying Exam

The student should contact each committee member to ensure that they are willing to serve on the qualifying exam and to establish a tentative date and time for the written and oral exams. It is suggested that this be accomplished at least **two months** prior to the oral examination date.

After the committee is approved, the student should formalize the written and oral exam dates. Allow sufficient time; the schedules of five faculty members must be accommodated. It is particularly important that the student plan ahead; especially if the student plans to take the oral and written exams during the summer months. While it is recommended that the written and oral exams be separated by two weeks, a minimum of **seven days** must separate the written and oral exams to allow faculty members adequate time to correct and discuss the written examination with the student.

The student must i the BPHY Student Services Advisor of the finalized dates for the written and oral exams. The Student Services Advisor can help with reserving rooms, etc. if needed. One week prior to the written exam it is wise for the student to reconfirm the dates, times, and locations of the written and oral exams with each committee member. This can be accomplished by email.

4. Dissertation Research Proposal

Because of the recommended timing of the written and oral exams, it is essential that the student submit the Dissertation Proposal to all members of the Qualifying Exam Committee **two weeks** prior to the written exams. The proposal should be typed and double-spaced. The proposal should include the following:

1. A concise summary of relevant background information. (2-3 pages)
2. Full justification for the dissertation research, including the hypotheses and research objectives that will guide the project. (1-2 pages)
3. Current research progress. (2-3 pages)
4. Future research directions, including an overview of the methods and expected results. (4-5 pages)

5. Bibliography that demonstrates a command of the relevant literature. (1-2 pages)
6. Tables, Figures, Algorithms and other data may be included in the proposal but will not contribute to the page count.

The length of the proposal is variable; suggested page limits are merely guidelines. It is important for the student to demonstrate an understanding of the current and proposed research. **It is strongly suggested that a draft of the proposal be reviewed by the Qualifying Exam Committee Chair prior to distribution to the Qualifying Exam Committee.**

Because the student's research directly reflects the major professor's research program and interests, the major professor should have a guidance role for the proposed research directions. **However, the major professor MUST NOT participate in the writing or editing of the Dissertation Proposal. Furthermore, NO other faculty member, regardless of their affiliation to BPHY or to the student, can participate in the writing or editing of the Dissertation Proposal.**

The student should understand this does NOT determine the research requirements for the Ph.D.; the dissertation proposal is a vehicle for the student to introduce the Qualifying Exam Committee to the student's accomplishments and research strategies.

5. Written Examination

The written exam will be designed to test the student's ability to synthesize and integrate basic concepts in biophysics. Since each student's training is considered unique, the level of knowledge in the general areas varies between students. Accordingly, the committee will expect the student to have a substantive knowledge in the student's area of specialization.

The written exam will be held over a period of two days. The exam will consist of questions submitted from each committee member. The outside member has the option to submit questions. The time allotted for each set of questions will be determined by whether or not the outside member submits questions. The Chair will indicate the length of each question set. The student may choose the order of question sets during the two-day exam period.

The exam is closed book, unless a committee member indicates otherwise for their portion of the exam. The student will take the exam in a designated room, for designated lengths of time. Each portion of the written exam, written by one committee member, should last two to three hours. The student will pick up and drop off questions from the Qualifying Exam Committee Chair. A break between question sets is permissible. Student promptness and honesty is essential.

Each committee member will grade the answers to his or her questions and relay the results to the committee Chair. The grading is usually done within a few days of the exam. The student may view the written exam after grading and is encouraged to discuss difficulties with committee members prior to the oral exam, but may not take the exam with them, or make a copy. The written exam must be returned to the committee Chair. Upon successful completion of the written exam, the student proceeds to the oral examination.

If the student fails two or more sections of the written examination, he/she will not proceed to the oral exam. The Qualifying Exam Committee will recommend one of the following options: (1) additional coursework or independent study in the specific area(s) of weakness and then the student will have one opportunity to repeat those sections of the exam or (2) dismissal from BPHY. The timing of the repeat written examination, if offered by the committee, will depend on the extent of the recommended remedial work; it is expected that the written exam will be re-administered within three months.

6. Oral Examination

The Oral Qualifying Exam Committee Chair will describe the standard set of events of an oral exam. During the oral exam, the student should be prepared to briefly describe his/her academic history (2-3 min), long-term scientific career goals (2 min), and research project proposal (15-20 min). The student must adhere to these time limits - otherwise the exam exceeds the normal three hour period. Upon successful completion of the oral qualifying exam, the student will be advanced to candidacy.

If two or more of the examiners do not agree to pass the student at the end of the oral examination, the student will have failed. If the student fails the oral examination, the Qualifying Exam Committee will recommend one of the following options: (1) additional coursework or intensive independent study in the specific area(s) of weakness and then retake the oral exam, OR (2) dismissal from BPHY. The oral exam can be repeated only once, at the discretion of the exam committee, and must be passed for a student to continue in the BPHY. The timing of the oral re-examination will depend on the remedial work recommended by the Qualifying Exam Committee. Graduate Division requires that the Oral Examination be re-taken after three months have elapsed; it is expected that the exam will be re-administered within six months.

B. Recommended Procedures for Chairs of BPHY Qualifying Exams

This is intended only as a guide. The Chair must be acquainted with and follow the current regulations of the Graduate Division.

Ph.D. QUALIFYING EXAMINATION

The Ph.D. Qualifying Exam is designed to test the student's ability to synthesize and integrate fundamental concepts in Biophysics. The student is also expected to defend a Dissertation Proposal.

1. Written Examination

The Chair of the Qualifying Committee should advise the candidate on setting up the date of the written and oral examinations. The entire exam, both written and oral, must be scheduled within a two-week period. The dates/exam members must be approved by Graduate Division at least 2 weeks prior to the exam. It is strongly recommended that the Chair consults with the Graduate Advisor to confirm that all of the courses on the student's Course Program have been completed.

The Qualifying Committee consists of five members. Four of the members should be BPHY Program faculty. Questions should be collected from these members approximately one week in advance of the written exam date. The outside member is not required to submit written questions; this decision is to be made by the outside member.

Two weeks (14 days) prior to the Qualifying Examination, the student must provide each exam committee member with a Dissertation Research Proposal. Guidelines for the proposal are provided to the student in their BPHY Program Handbook. The proposal is not to be organized or written in conjunction with the Major Professor but written by the student alone. The proposal does not define the research requirements for the Ph.D.; it is to act as a vehicle for the student to introduce the Qualifying Committee to the student's accomplishments and research strategies. It is also to provide a foundation for the initial questioning of the candidate in the oral exam.

The Chair should review all written questions for clarity, fairness, duplications and length. The total written exam should take ten to twelve hours and is normally administered over **two consecutive days**. This is approximately two to three hours per set of questions.

The candidate should be allowed to choose the order of the written exam questions, and he/she should be given one set of questions at a time.

The candidate must work on the questions alone and without outside references unless otherwise specified by a member of the committee. Please be sure the student **understands** that s/he is assumed to be in the examination room without outside resources for the duration of the exam. Trips to the restroom and to pick-up and return the exam are the only permissible activities. Any student found in violation of these rules will be dealt with in accordance to University regulations.

The Chair should collect the questions and answers, make a copy of each (the Student Services Advisor may help with this), and return the originals to the committee members for grading. Each committee member should grade his/her exam questions within two days and provide the Chair with his/her opinion of the candidate's performance and **return the original exam and answers to the committee chair**.

Upon successful completion of the exam, the student proceeds to the oral examination.

If a committee member has questions and concerns about the performance, these should be communicated to the Chair. If the student fails two sections or more of the written examination, s/he will not proceed to the oral exam. The committee must meet to decide a course of action. The Qualifying Exam Committee will recommend one of the following options: (1) additional coursework or independent study in the specific area(s) of weakness or (2) withdrawal from the program. The written exam can be repeated once; the second written exam must be passed for a student to continue in the program. Only the portions of the exam that were failed will need to be re-taken. The timing of the repeat written examination will depend on the remedial work recommended by the Qualifying Exam Committee; it is expected that the exam will be re-administered within six months to one year. If the oral exam is to be cancelled or postponed, the Graduate Advisor must be notified immediately, who will then notify the Graduate Division. If no more than one person is dissatisfied with the written exam, the oral exam will be conducted as scheduled. The Chair will communicate the results of the written exam to the student.

The student can review the exam in the presence of the Chair. The exam questions and answers MAY NOT be copied for or by the student. The student should be encouraged to discuss his performance with the committee members if he/she has questions. In this case, the committee chair can give the original copy of the exam to the committee member, who must not let the student take the exam questions or answers out of their presence or allow the student to make or have a copy of either. The committee member must return the original exam questions and answers to the committee chair after meeting with the student. The original exam questions and answers should be filed in the Biological Sciences Graduate Student Affairs Center.

2. Oral Examination

The oral examination should be scheduled within two weeks of the written exam.

Prior to the oral exam, the committee Chair will describe the standard set of events of an oral exam to the student.

The Chair should bring to the oral exam the candidate's file, the original written exam questions and answers, and Form (3) from the Graduate Division entitled "Report of the Qualifying Exam," which can be obtained from the Student Services Advisor.

On the exam date, after all, committee members have convened, the Chair should excuse the candidate from the room so that the committee can discuss the candidate's record and performance on the written exam. The order of questioning should be decided at this time. Other issues regarding the candidate may be discussed. If this is a retake of the oral exam, expectations for the retake should be discussed.

The exam will begin with the student's presentation. The student should be prepared to briefly describe his/her academic history (2-3 min), long-term scientific career goals (2 min), and research project proposal (15 to 20 min). The student is strongly advised to adhere to these time limits – otherwise, the exam exceeds the normal three-hour period. Upon successful completion of the oral qualifying exam, the student will be advanced to candidacy.

Each committee member should be allocated at least 20 minutes for questioning. Generally, this questioning can address broad areas as well as area of the proposed research. The Chair should keep track of the time and advise committee members about the time available for their questions. The candidate should be offered the opportunity to take a ten-minute break after the second or third questioner. The Chair should be the last questioner. After all committee members have had the opportunity to question the candidate, the Chair should provide the opportunity for committee members to ask additional questions. When all members are satisfied that they have finished questioning, the candidate should be excused for the final decision-making discussion. The candidate may be asked to return for additional questioning *after* the committee's deliberations. In normal circumstances, the oral exam should not exceed three hours to this point. After the committee's deliberations, the candidate

will be invited back into the room and the result of the exam will be announced. The candidate may be asked to consult with individual committee members about any concerns at a later date.

Once an oral exam has started the committee must report a decision to the Graduate Division within 24 hours.

If two or more of the examiners do not agree to pass the student at the end of the oral examination, the student will have failed. If the student fails the oral examination, the Qualifying Exam Committee will recommend one of the following options: additional coursework or intensive independent study in the specific area(s) of weakness or dismissal from the program. The Qualifying Examination Committee cannot recommend a "Qualified Pass" in which, for example, they require the student to take or serve as a teaching assistant for additional courses. The oral exam can be repeated once and must be passed for a student to continue in the program. The timing of the oral re-examination will depend on the remedial work recommended by the Qualifying Exam Committee. Graduate Division requires that the exam be retaken after three months have elapsed. The Chair of the Qualifying Committee must report the decision and advice of the committee to the candidate. The Graduate Division is to be informed promptly of the results of the examinations.

The Chair should consult the document from the Graduate Division entitled "*Instructions for Chair of Doctoral Qualifying Committees*," which defines the function of the Qualifying Committee and describes how the final decision should be made. It should be noted that a 3-Yes to 2-No vote is considered a failure. However, if a member of the committee wished to petition the Graduate Council to consider a reversal of this judgment due to unfair or improper procedures during the exam, the student should be informed that a final decision has not been made.

3. Summary of the Dissertation Proposal Critique

Because five faculty members have read and evaluated the Dissertation Proposal, the committee often has suggestions for the student to consider when executing his/her thesis research. Because the major professor does not participate in the exam process, the Chair will provide to the student and major professor a short written summary of the committee's suggestions. This summary is to point to the strengths and weaknesses of the proposal as perceived by the Qualifying Exam Committee. These comments are suggestions intended to aid the student and perhaps to give novel insights or alternative strategies for the student's future research initiatives. This critique will summarize the many different ideas discussed about the proposal during the exam. It is hoped that this will allow the student to digest and evaluate the thoughts of the committee.

IV. FORMS AND GUIDELINES

A. Pathway to the Ph.D. Degree

Set up **laboratory rotations** (3-4 five-week rotations) no later than first week of 1st quarter in residence

↓

Nominate a Guidance Committee (before Fall Qtr of year 1 of the program). The committee is composed of a chairperson and two additional BPHY faculty. If the student has chosen a major professor he/she should be the chair of the committee.

↓

Meet with Grad Advisor/Guidance Committee by the end of the 2nd quarter of residence **to plan the course program.** Submit Course Plan Program forms.

↓

Reach an agreement with a Major Professor (by end of 2nd quarter in residence).

↓

Meet with Guidance Committee (and later with Dissertation Committee) at least once / year to discuss research and progress.
Submit Annual Progress Report (yearly).

↓

Complete Course Work

↓

Nominate Qualifying Exam Committee (at least 2months prior to date of qualifying exams). (Refer to Section III for committee membership requirements for specific tracks)

↓

At least two weeks prior to the written Qualifying Exam, the student is required to provide a **Dissertation Research Proposal** that includes progress thus far to the Qualifying Exam Committee. The proposal should be developed in consultation with the Major Professor but written by the student alone.

↓

Qualifying Exam. Two full days of written exam questions followed by a three-hour oral exam (~ 1-2 weeks later). Qualifying Exam needs to be completed as soon as possible after finishing formal coursework (no later than 7th quarter in residence). If coursework is completed and Exam is passed, you are Advanced to Candidacy (normative time = 7 quarters).

↓

Nominate a Dissertation Committee (at least three faculty members, Major Professor is the Chair). The Chair of the Dissertation Committee must be nominated at time of Oral Qualifying Exam. Balance of committee must be nominated within one quarter after passing the Qualifying Exam.

↓

Oral Defense of the Dissertation

↓

File Dissertation with Graduate Division

↓

Ph.D. Awarded (normative time is 15 quarters)

Entry Requirements:

Bachelor's Degree:

From an accredited 4-year college or university with an academic record that satisfies the standards established by the Graduate Division of UC Riverside (In Biochemistry, Biology, Chemistry, Physics, or related field).

Course Work:

- *Biochemistry*: Requires a minimum of one year of introductory biochemistry, including laboratory.
- *Biology*: Requires a minimum of one year of introductory biology, including laboratory.
- *Chemistry*: Requires a minimum of one year each of introductory and organic chemistry, including laboratories.
- *Mathematics*: Requires a minimum of one year of calculus, plus one upper-division course.
- *Physics*: Requires a minimum of one year of introductory physics, including laboratory.
- *Upper-Division*: Requires upper-division coursework within the student's major.

These courses must be taken every quarter:

BPHY 252 Seminar (1 unit and must be taken every quarter).

BPHY 297 Directed Research (1-6 units and must register under the section of your rotating PI).

Course Program for a Ph.D. in Biophysics

Fall 2022:

BCH 210 Biochemistry of Macromolecules (4 units) (core class).

GDIV 403 Interdisciplinary Seminar (1 units) (Required seminar).

BCH 100 Introductory Biochemistry (4 units) (Enroll in this course ONLY if you have NOT already taken an Introductory Biochemistry course).

BPHY 297 Directed Research (1-6 units and must register under the section of your rotating PI).

BPHY 252 Seminar (1 unit and must be taken every quarter).

Winter 2023:

BIOL 203 Cellular Biophysics (3 units) (core class).

BCH 184 Physical Biochemistry (4 units) (can be waived if you already took it).

BPHY 252 Seminar (1 unit and must be taken every quarter).

BPHY 297 Directed Research (1-6 units and must register under the section of your rotating PI).

Spring 2023:

PHYS 246 Biological Physics (4 units) (core class)

BPHY 252 Seminar (1 unit and must be taken every quarter).

BPHY 297 Directed Research (1-6 units and must register under the section of your rotating PI).

BPHY 299 Thesis or Dissertation (1-6 units and must register under the section of your PI).

Course Plan Form

Courses Required by Guidance Committee

Quarter _____			**Quarter _____**			**Quarter _____**		
COURSE #	**COURSE TITLE**	**UNITS**	**COURSE #**	**COURSE TITLE**	**UNITS**	**COURSE #**	**COURSE TITLE**	**UNITS**
Quarter _____			**Quarter _____**			**Quarter _____**		
COURSE #	**COURSE TITLE**	**UNITS**	**COURSE #**	**COURSE TITLE**	**UNITS**	**COURSE #**	**COURSE TITLE**	**UNITS**

Name of Student

Course Plan Form (continued)

Quarter _____			Quarter _____			Quarter _____		
COURSE #	**COURSE TITLE**	**UNITS**	**COURSE #**	**COURSE TITLE**	**UNITS**	**COURSE #**	**COURSE TITLE**	**UNITS**
Quarter _____			**Quarter _____**			**Quarter _____**		
COURSE #	**COURSE TITLE**	**UNITS**	**COURSE #**	**COURSE TITLE**	**UNITS**	**COURSE #**	**COURSE TITLE**	**UNITS**

Document Link: https://na3.docusign.net/Member/PowerFormSigning.aspx?PowerFormId=20a2021e-a2c5-4239-bce8-30d06616872c&env=na3&acct=662bc3a1-ffe6-496e-b95c-f9ce7808bd42&v=2

2022-2023 ANNUAL REVIEW OF GRADUATE STUDENT PROGRESS

Biophysics Program

Student Name:_____ **SID:**_____ **Date prepared:**_____

Program: M.S. ☐ **Ph.D.** ☒ **Quarter entered program:**_____ **Anticipated Exit Quarter:**_____

Comp. Exam date: _____ **Qualifying Exam date:** _____**MAJOR PROFESSOR:** _____

Working Dissertation title:_____

_____

_____

PART I – TO BE FILLED OUT BY THE STUDENT

I. **COURSEWORK. Indicate if you have completed the departmental core courses (B- or better) and whether any elective courses are still needed (a minimum of 3 electives are required for Ph.D.).**

II. **RESEARCH. Briefly describe your research achievements this year and indicate goals for next year.**

III. **ACCOMPLISHMENTS. List any special accomplishments, seminars given, meetings attended, awards, publications, etc., during this past academic year.**

IV. **CAREER GOALS. Briefly describe your career goals. Have these changed during the last year? Are you making sufficient progress towards these goals?**

2022-2023 ANNUAL REVIEW OF GRADUATE STUDENT PROGRESS

Biophysics Program

PART II – TO BE FILLED OUT BY THE PRINCIPAL INVESTIGATOR (PI)

I. **After reviewing your advisee's achievements during the past academic year, do you feel that s/he is making acceptable progress towards their degree?**

II. **Are the student's research and career goals realistic?**

III. **What are your expectations for this student during next academic year?**

IV. **Do you have any other concerns?**

_____
STUDENT (Print name and sign)

_____
MAJOR PROFESSOR/CHAIRMAN (Print name and sign)

_____
COMMITTEE MEMBER (Print name and Sign)

_____
COMMITTEE MEMBER (Print name and Sign)

_____
Graduate Advisor (Print name and Sign)