



GRADUATE PROGRAM IN BIOPHYSICAL SCIENCES HANDBOOK

The Graduate Program in Biophysical Sciences grants a Ph.D. degree from **both** the Biological and Physical Science Divisions, serving the needs of students who have strong backgrounds in the Physical Sciences and are interested in research at interfaces between the physical, biological and computational sciences. Students in the Program are fully members of both the BSD and the PSD. In administrative areas where only a single Division can be indicated (notably with the Registrar) the Division is listed as the PSD.

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1. THE FIRST YEAR

1A. Required Curriculum

The required curriculum is intended to be accomplished in the first year of the program. This curriculum includes the Biophysical Research Immersion (BRI) course, biological sciences selectives, physical sciences selectives, a course in molecular biophysics, and the division-wide ethics course, “Scientific Integrity and Ethical Conduct of Research.”

1A1. The Biophysical Research Immersion (BRI)

The BRI is an extensive practical course in collaborative research methods and professional skills. The course typically begins 6 weeks before the beginning of Autumn Quarter and meets for 40 hours per week for four weeks, and then meets for 20 hours per week through the Autumn and Winter Quarters, ending with a trip to the Biophysical Society (BPS) Annual Meeting.

1A2. Lecture Course Requirement: “The 3+3 Curriculum”

Six graduate courses are required: three in the biological sciences and three in the physical sciences. These courses must be 100 units didactic courses. Reading courses and Seminars will not fulfill this requirement, nor will method-specific workshops. Two courses shall be taken in each of the Autumn, Winter and Spring quarters.

The Lecture Course Requirement must be completed within the first year, unless a petition to delay the requirement is granted.

All courses fulfilling the Lecture Course Requirement must be taken for quality grades (standard letter grades). Students must maintain a 3.0 GPA for these 6 courses.

In each set of three required courses, two of the courses must be chosen from the BioSci and PhySci lists below (or fulfill the spirit of the requirement, by petition). One of the two remaining courses must be a course in molecular biophysics (1A2c). The final course is a largely unrestricted elective that rounds out the 3 & 3 requirement. For example, if the chosen molecular biophysics course is designed for (and taken by) students in biology, then the final elective must be a physical sciences course.

The Biophysical Sciences Program welcomes petitions from students who wish to take courses that are not listed but fulfill the spirit of the requirements. See section 4A for information about petitions. Students considering a course petition should discuss the process with the Director of Graduate Studies

Lecture Course Requirement: “The 3+3 Curriculum”				
A	2 courses from the BioSci list	An elective in the Biological Sciences	2 courses from the PhySci list	A molecular biophysics course from the Physical Sciences
B	2 courses from the BioSci list	A molecular biophysics course from the Biological Sciences	2 courses from the PhySci list	An elective in the physical sciences

1A2a. Biological Sciences Course Requirements (2 courses)

Two courses from the BioSci list:

Cell Biology I* (MGCB 31600)

Cell Biology II (MGCB 31700)
 Molecular Biology I (MGCB 31200)
 Molecular Biology II (MGCB 31300)
 Fundamentals of Cancer Biology (CABI 30800)
 Fundamentals of Bacterial Physiology (MICR 30600)
 Host Pathogen Interactions (IMMU 31200)
 Cellular Neurobiology (NURB 31800)
 Genetic Analysis of Model Organisms (MGCB 31400)
 Developmental Mechanisms (DVBI 36400)
 Human Genetics (HGEN 47000)
 Chemical Biology II (CHEM 33300) *Note: Chem Bio I is on the PhySci list*
 Community Ecology (ECEV 42600)
 Principles of Population Genetics (GENE 35600)

* This course is the recommended Autumn course for all students.

Note: These courses represent introductory graduate biology training and are intended to provide exposure to fundamental biological concepts. The courses are from the more descriptive fields of biology, and cannot be replaced with other computational or more physically-oriented courses, even when such courses are taught by the same departments. Students can petition (4A) if they believe a course not on the list above should count toward this requirement. Students should discuss their intent to petition with the Director of Graduate Studies prior to the start of the quarter. Petitions will be evaluated based on the course and the background and needs of the individual student.

Plus, one additional biological sciences course. This course may either be used to fulfill the Molecular Biophysics requirement (1A2c), or can be an elective in any area of biology. **Reading courses and workshops do not fulfill this requirement.**

1A2b. Physical Sciences Course Requirements (3 courses)

Two courses from the *PhySci* list:

Chemistry

Statistical Thermodynamics (CHEM 36300)
 Wave Mechanics / Spectroscopy (CHEM 36100)
 Advanced Statistical Mechanics (CHEM 36400)
 Chemical Dynamics (CHEM 36500)
 Organic Synthesis / Structure (CHEM 32200)
 Chemical Biology I (CHEM 33200) *Note: Chem Bio II is on the BioSci list*
 Bioinorganic Chemistry (CHEM 30900)
 Physical Organic Chemistry (CHEM 32100)

Physics

Graduate Quantum Mechanics (PHYS 34100)
 Math Methods of Physics (PHYS 33000)
 Advanced Electrodynamics (PHYS 32200)
 Statistical Mechanics (PHYS 35200)
 Topics in Fluid Mechanics (PHYS 42600)
 Soft Condensed Matter (PHYS 36700)

Computer Science

Machine Learning (CMSC 35400)

Algorithms (CMSC 37000)

Discrete Mathematics (CMSC 37110)

Math and Statistics

Analysis I: Real Analysis (MATH 31200)

Introduction to Stochastic Processes (STAT 31200)

Multivariate Statistical Analysis (STAT 32950)

Machine Learning and Larger Scale Data Analysis (STAT 37601)

Fundamentals of Computational Biology (STAT 35450)

Molecular Engineering

Applied Numerical Methods (MENG 33100)

Thermodynamics and Statistical Mechanics (MENG 33000)

Geophysical Sciences

Global Biogeochemical Cycles (GEOS 33800)

Note: The courses listed often represent introductory sequences in the quantitative or computational areas of the traditional fields of the physical sciences. Subsequent courses in these sequences will also likely meet this requirement (except Chem Bio II which is counted as a biological sciences course). These courses cannot be replaced with courses that are more biologically oriented even when such courses are offered by the same departments. Students can petition (**4A**) if they believe a course not on the list above should count toward this requirement. Students should discuss their intent to petition with the Director of Graduate Studies prior to the start of the quarter. Petitions will be evaluated based on the course and the background and needs of the individual student.

Plus, one additional course in the physical sciences. This course may either be used to fulfill the molecular biophysics requirement (1A2c) or can be an elective in any area of the physical sciences. **Reading courses and workshops do not fulfill this requirement.**

1A2c. Molecular Biophysics Course Requirement

One of the two elective courses must be from this list of *molecular biophysics* courses. Some of these courses are not offered every year.

1) Biophysics of Biomolecules* (BPHS 31000)

2) Simulation, Modeling, and Computation in Biophysics (BCMB 31358)

3) Biophysics of Membrane Proteins (BCMC 32300)

4) Biophysical Chemistry* (CHEM 38700)

* These two courses have very similar content, and thus, they can't both be taken for credit.

Note: The intent of this list is to provide exposure to fundamental concepts of biophysics. Several of these courses have been cross-listed in more than one department. Thus, they can serve as the elective for either the BioSci or the PhySci requirement. Students should consider their other elective choice when deciding which molecular biophysics course to take.

1A3. Responsible Conduct of Research (RCR)

Federal guidelines require training in RCR at least every four years throughout an academic career. In the Spring Quarter of the first year, students must take *BSDG 55000, "Scientific Integrity and the Ethical Conduct of Research"*. An advanced course in Scientific Ethics (BPHS 33000) is provided specifically for BPHS students (See section 3C). Students must take this course in their fifth year.

1A4. Research Presentations (BPHS 40500) Spring Quarter

Third year students are required to participate in this practical course, which teaches the skill of effective short format research presentations.

1A5. Dropping/Adding Courses

Students may drop/add courses per University guidelines but are strongly encouraged to discuss such decisions with the Director of Graduate Studies prior to changing their courses. Please note that the program is not notified when courses are dropped/added and that it remains the student's responsibility to ensure that his/her schedule fulfills the Lecture Course Requirement. It is the responsibility of the student to be enrolled in a minimum of 300 units at all times in order to remain in full time status.

1B. Program Advising

Students will have program advising meetings regularly until they advance to candidacy (4D). The purpose of these meetings is to ensure that the student understands program requirements and has a clear mechanism to adapt those requirements to their individual circumstances.

Students have the option of continuing to have program advising meetings after advancing to candidacy, with the same purpose and advantages. The student and their program advisor will agree on a meeting schedule that is at least once per quarter — more frequent before thesis advisors are selected.

1B1. Program Advisor

The default advisor for all students is the Director of Graduate Studies. Students can arrange an alternate program advisor. To serve as a program advisor, a person must:

- a. Be versed in the structure and requirements of the BPHYS program, and be willing to adhere to the underlying principles of the Program.
- b. Be approved by the Executive Committee. Such requests can be initiated by communicating with any member of the committee.

1C. Selection of Dual Thesis Advisors

Establishing thesis advisors is the responsibility of the student, and students are required to find advisors before July 31st of their first year in order to remain in Good Standing in the program. After the Lab Class ends students must be continuously engaged in rotations until the signed Student Funding Plan Form (Mentor Form) has been submitted to the program administrator. Students meet regularly with the Director of Graduate Studies during the advisor selection process.

1C1. Rotations

Upon their arrival and throughout the first year, students have opportunities to meet and learn about potential mentors. Beginning in February, after the BPS annual meeting, laboratory rotations are the primary mechanism for students to thoroughly investigate possible mentors.

The *BPHYS Rotation Form*, which describes expectations for laboratory rotations and dual mentorship, must be distributed by the student to the potential advisor in advance of the rotation. The first page must be completed by the advisor together with the student and returned to the Program Administrator at the beginning of the rotation. The second page should be completed by the advisor at the end of the rotation and returned to the Program Administrator.

Appendix B shows the default rotation plan. This plan has been designed to be effective for most students. The plan can be modified to suit individual needs by discussing a proposed alternate plan with the Director of Graduate Studies.

1C2. Official Mentor Selection

Students may, at any point during the rotation period, formally join their two chosen groups and begin their thesis work. It is not required that students complete the full rotation schedule. Once dual mentors have been selected, the student must request that both mentors complete the Student Funding Plan Form. The Form details mentors' financial responsibilities to the student. If students or mentors have questions regarding the Form they should contact the Program Administrator; once completed the student is responsible for submitting the completed Form to the Program Administrator.

1D. Thesis Committee Formation

Students at the beginning of their second year, with the help of their thesis advisors, will assemble a thesis committee consisting of four faculty members with research interests related to the subject of the thesis research.

The thesis committee will be chaired by a committee member who is not a thesis advisor. The composition of the thesis committee must fulfill University and program requirements. Two of the committee members, including the chair, and at least one of the advisors, must be UC tenure track faculty.

The chair communicates committee decisions to the Program, such as the outcome of the qualifying exam, assessment of student progress at regular committee meetings, and the outcome of the thesis defense.

After each committee meeting the student will meet privately with the chair to discuss whether there are issues related to mentoring.

The thesis committee is usually, but not necessarily, the same as the examination committee. See Appendix A for detailed description of dissertation completion procedures and requirements that serve as a guide to the thesis committee.

2. ACADEMIC ADVANCEMENT

This section contains the primary requirements for advancement through the program from the qualifying exam to the thesis defense.

2A. BPHYS QUALIFYING EXAMINATION

A qualifying examination is required to be admitted for Ph.D. candidacy and is administered during Autumn Quarter of a student's second year. The exam consists of a written research proposal of a thesis project and an oral defense of this proposal.

2A1. Examination Committee

Each qualifying examination is administered by an examination committee comprised of four faculty members. In most cases, the examination committee is a student's thesis committee.

2A2. Written Proposal

The proposal must follow the same format as the Research Plan from a Ruth L. Kirschstein National Research Service Award for Individual Predoctoral Fellows (F31) fellowship application. This is a standard NIH research grant format.

Details of the format for the written proposal can be found on the NIH website. The general outline for the proposal requires identifying 2-3 hypothesis-driven aims for your research project. Page limits are as follows:

Specific Aims (1 page)

Research Strategy (6 pages)

The proposal should be the student's thesis research project. It is expected that the Thesis advisors will be involved in the development of the ideas and will provide mentoring on the proper scope and style of a grant application. It is the responsibility of the student to seek out this guidance. As the author of the proposal, the student is solely responsible for developing a scholarly understanding of the science laid out in the proposal, including the relevant literature, the experimental details, and the broader implications.

It is strongly advised that students arrange a joint meeting with both advisors at least 4 weeks prior to the examination. The purpose of this meeting is to discuss and agree upon collaborative aspects of the proposal. The student should plan to give a final draft of the proposal to each advisor 2 weeks before the examination.

2A3. Proposal Distribution Deadline

Each student's completed proposal must be handed out by the student to all members of the examination committee and the Graduate Program Administrator **one week prior to their oral defense by 5:00pm**. This is a hard deadline. If the proposal has not been distributed by then the student will fail the exam and a second (and final) attempt may be scheduled.

The program views proposal distribution deadline extension requests with disfavor; however, if unavoidable circumstances prevent the student from meeting this deadline the following extension protocol may be requested:

Extensions are granted by petition only (**4A**). The petition must come from the student and must be addressed to the Executive Committee. The petition must be co-signed by all thesis committee members (email concurrence is acceptable).

2A4. Oral Defense and Examination

The goal of the oral examination is to evaluate the student's preparation and capacity to conduct the proposed research and the student's depth of knowledge in relevant scientific fields.

Although the examination will focus on the research proposal, questions may include subjects covered in the first year curriculum, particularly in related areas. During the oral examination the thesis advisors will fully participate in discussions but should avoid directly assisting the student in answering questions from the committee.

The examination committee will determine the format of the oral examination. It is the student's responsibility to understand and meet the expectations of their examination committee. Generally, the student prepares a 30-45 minute presentation describing the proposed research, although questions from the committee typically lengthen the exam to two hours.

Both before and after the examination, the student will be asked to leave the room for committee discussions. After the final discussion, the committee will go over their determinations with the student.

2A5. Qualifying Examination Outcome

The Examination Committee assigns one of four broad results:

- 1) Passed Unconditionally - Qualifying exam requirement for advancement to candidacy fulfilled.
- 2) Passed Conditionally - Advancement to candidacy is dependent on satisfactory completion of specified requirements, but a 2nd oral examination is not necessary. (This outcome may only be used for the first examination attempt)
- 3) Failed Conditionally - A 2nd oral examination will be required, after the completion of specified preparations. (This outcome may only be used for the first examination attempt)
- 4) Failed - Potentially requiring new thesis advisors or dismissal from the Program.

Conditions for passing may include revisions of the written proposal, subject papers, additional coursework, or any other academic activity. A third attempt of the oral examination is not permitted.

2B. Thesis Committee Meetings

Thesis committee meetings must be held every 9-12 months to report progress and receive guidance. The student must send the committee a summary of progress since the last meeting at least 24 hours before each meeting. The content of this summary should be discussed with the advisors and conform to committee expectations, which should be determined at the first committee meeting after the qualifying examination. Expectations regarding committee meetings are established by the thesis committee. It is the student's responsibility to understand and meet these expectations.

It is required that the Program Administrator be informed of the meeting date, time and place at least two days beforehand, as it is necessary to distribute Program materials to committee members prior to the meeting.

The thesis committee chair must apprise the student of the view of the thesis committee following each meeting, and submit a written report delineating committee recommendations to the Graduate Program Administrator.

2C. Term of Predoctoral Training

5th year check in form: The University requires a 5th Year Check in Form to be completed by the end of Autumn Quarter of the student's 5th year and submitted to the PSD Dean of Students Office. On the Form you must include a timeline for completion of your dissertation work and the signatures of all committee members.

The Physical Sciences Division has a firm 7th year completion policy. This policy and the 5th Year Check in Form are described here:

<https://physicalsciences.uchicago.edu/academics/dean-of-students/policies-for-current-students/phd-student-fifth-year-check-in/>

2D. Dissertation and Requirements for PhD Degree

Once an appropriate body of work has been completed on the thesis research project, the student should schedule a thesis committee meeting (penultimate meeting) to request permission to write and defend their dissertation. If the thesis committee decides that the student is ready to write and defend the thesis, the chair of the thesis committee will report this to the Graduate Program Administrator.

Dissertations must comply with the specifications set by the Library Dissertation Office and by the University. The Dissertation Office in the Regenstein Library provides a detailed description of these requirements, and also for deadlines for submission of the dissertation at: <https://www.lib.uchicago.edu/research/scholar/phd/students/dissertation-deadlines/>

The Dissertation office offers quarterly training on dissertation preparation; in addition, there is an optional draft review service that is available for the first few weeks of each quarter. Students must submit complete copies of their dissertation to thesis committee members at least two weeks prior to the date of their examination.

The examination consists of a public seminar followed by a closed session involving only the student and members of the thesis committee. There are three potential outcomes: unconditional pass, pass with certain provisions, and fail. Provisions may include corrections or changes to the written work and/or a second examination.

Once final approval has been granted, the dissertation is uploaded according to Dissertation Office procedure. Once a dissertation has been accepted, the student is required to complete the Survey of Earned Doctorates as a requirement for graduation. Graduating students follow the Physical Sciences Division's graduation processes and policies (<https://physicalsciences.uchicago.edu/current-students/graduation-and-degree-application/>)

3. PROGRAM REQUIREMENTS

Once a student has been admitted to candidacy, the primary requirement is the conduct of thesis research, including regular thesis committee meetings. In addition, the program requires:

3A Teaching Experience Requirement

Students are required to serve two quarters as teaching assistants. Students may not TA until after they pass their qualifying examination. One quarter of this requirement may be satisfied by taking the BSD TA Training Course, which is typically offered in the Spring Quarter. Enrollment in the TA Training Course is limited, the course must be taken before the student completes other TA-ships. Students may serve as teaching assistants for the Biophysical Sciences Lab Course (BPHS 35001, 35002).

3B. Individual Development Plan (IDP)

Individual Development Plans are required by the BSD and by the NIH. IDPs are tools to help students determine career paths and choices that best suit their goals and interests. Details regarding this requirement are available from the Program Administrator.

3C. Advanced Ethics Training Course (BPHS 33000)

Both the National Science Foundation and the National Institutes of Health require that funded scientists regularly participate in training in the responsible conduct of research. The Biophysical Sciences program offers an advanced course in research ethics every year. All students are required to take this course in their fifth year. Students graduating in the quarter in which the course is offered are not required to take the course. This course meets the current requirements of all national funding agencies and will be updated as these requirements evolve.

3D. Additional Requirements

The policies described in this Handbook are subject to change. University policies, the requirements of funding agencies, civil regulations, union stipulations, and any other authority outside of the control of the BPHYS program may cause these rules to be modified. Students are required to meet all such future requirements.

4. PROGRAM POLICIES

4A. Petitions

The BPHS program strives to provide research training that is tailored to the needs and aspirations of individual students. Every aspect of the program that is under the authority of the program directors can be altered through a simple internal appeals process, and many policies beyond the authority of the program directors are also open to appeal. For issues beyond the authority of the program directors, the student will be assisted in communicating the request to the appropriate authority. All petitions will consider the background and goals of the individual student. Therefore, the results of petitions apply only to the petitioner.

A petition is created with a written request (email) addressed to the Program Directors and submitted to any member of the Executive Committee. A petition should include the specific request that is being made and a brief explanation, as needed to understand the benefits of granting the petition. Members of the Executive Committee can help in the preparation of a petition before it is submitted.

The decision regarding a petition will be made by the Directors in consultation with other resources, as needed. Additional information may be requested, and the petitioner is welcome to communicate new information.

4B. Missed Deadlines

The goal of this system is to formalize the use of academic probation as a means of enforcing program requirements. The system relies on a student's Program advisor (**1B**) to create flexibility early in the process.

- Covered Program Requirements:
 - Rotation Forms
 - Faculty Dual Mentor Form
 - Thesis Committee formation
 - Outstanding course requirements
 - BSD TA requirements
 - Annual Committee Meetings
- Program requirement notifications (tier one).
 - As deadlines approach, the Graduate Program Administrator (Michele) sends the usual reminders. These reminders are cc'd to the Director of Graduate Studies.
 - If a student who is addressed by the reminder has a Program advisor other than the DGS, the email is cc'd to that advisor.
- Missed deadlines (tier two)
 - When a student misses a deadline, an alert is sent to the student and their Program Advisor. If the student does not have a Program Advisor, the issue will advance to tier three.
 - The content of the alert will include the risk of Academic Probation and explains tier three and four.

- If the student feels that quickly meeting the Program requirement is not practical or in their best interest they may discuss changes to the deadline with their Program advisor.
- The student's Program advisor can delay the deadline by stating the decision clearly in an email explaining the reason and the new deadline (cc-ing Michele). This is not probation and is not reported to the Deans of Students.
- For more significant alterations, the Program Advisor will help the student present a petition(4A) for a change of requirements.
- Lack of response (tier three)
 - The case is presented at the Executive Committee meeting. The Program advisor role is now transferred to the Executive Committee.
 - In the absence of resolution or granting an official delay the student is warned by the Program Directors, with their Thesis Advisors and Thesis Committee copied on the warning.
- Continued lack of response (tier four)
 - The final warning includes the PSD Dean of Students
 - The student goes on academic probation with the Dean of Students.
 - The PSD Dean of Students sets the timeline and outcome in discussion with the student's thesis advisors and the Program Directors.

4C. Good Standing and Academic Probation

In order to be in Good Standing students are expected to make adequate progress towards completion of their degree, complete required courses, maintain the required GPA minimum (4C3), and fulfill program requirements. If a student is deemed not to be in Good Standing based on the criteria outlined above, the student may be placed on academic probation.

Academic Probation is an official standing administered by the two Deans of Students (DOS), primarily the DOS of the PSD. Students on Academic Probation will be informed in writing about the expectations for how they may return to Good Standing and given a timeline for completion of those requirements, generally a minimum of one quarter. A copy of this document, along with the student's confirmation of receipt and acknowledgement of the terms of the probation letter shall be sent to the Deans of Students.

Students who are unable to meet the expectations outlined in the Academic Probation letter may face expulsion from the program. Specific qualifications for Good Standing are discussed below (4C1-4C7)

4C1. Course Completion

During the first and second year, academic standing will be judged primarily by timely completion of coursework with quality grades. The Lecture Course Requirement (3+3 Curriculum) described in section 1A2 should be completed within the first year. Circumstances that result in fewer than five of the six courses being completed with quality grades in the first year require approval through petition to maintain Good Standing.

4C2. Laboratory Course (The BRI)

Full participation and satisfactory performance in the BRI (1A1) is required.

4C3. GPA

To remain in good standing, students must maintain a 3.0 grade point average in lecture courses at all times. Grades in the Lab Course are not used to compute the GPA. (GPA is calculated using plusses and minuses, numerical equivalents are as listed below)

A = 4.0

A- = 3.66

B+ = 3.33

B = 3.0

B- = 2.66

Any student whose GPA falls below a 3.0 will automatically be placed on Academic Probation. A student who has a GPA below 3.0 at the time of their qualifying exam can achieve, at most, a provisional pass.

Any “C” is an unacceptable grade. If a student receives a “C” or below in a course:

- 1) The Director of Graduate Studies will contact the instructor to get further details about the student’s performance.
- 2) The student may meet with the Program Directors to discuss the issue.
- 3) Further action or requirements may be established by the Director.

4C4. Group joining

Students must identify advisers, join research groups, and meet the expectations of those advisors (Section 1C). A student who does not have research advisors will be placed on academic probation.

4C5. Qualifying exam

Students who fail their first qualifying exam for any reason will be placed on academic probation.

4C6. Research requirement

After the qualifying exam and coursework are complete, the primary activity of the student will be research. The thesis committee will determine the requirements and standing of the student. A student who is not making adequate research progress will be given clear warning, and will not be dismissed without being placed on probation for at least three months.

4C7. Academic or research misconduct

Academic or research misconduct (as defined by the University) may result in immediate loss of good standing and possible termination at the discretion of the Executive Committee or other university disciplinary committee.

4D. Admission to Candidacy

To be admitted to candidacy, students must:

- 1) pass the qualifying exam,
- 2) complete all course requirements while maintaining a 3.0 GPA (see **4C3** for computing the GPA),
- 3) complete the first Ethics training course,
- 4) and be in Good Standing.

Students beyond the third year who have not yet met the requirements for candidacy will be asked to submit an explanation of the delay. A BPHYS student who has fulfilled the candidacy

requirements is eligible to receive a Master of Science degree in Biophysical Sciences conferred (jointly) by the Deans of the Biological and Physical Sciences Divisions.

4E. Sources of Financial Support

Students in the program are guaranteed support (stipend, tuition, insurance and fees) as long as the student is in Good Standing, for up to seven years. Students in the BPHYS PhD program are generally funded via fellowship stipend or research assignment positions throughout their graduate studies. You will receive an assignment letter from the program that explains your funding source at least annually. PhD students interested in adding a position beyond their primary TA or RA appointment must speak with the Graduate Program Administrator prior to accepting the additional position.

4F. Residency Policy

Ph.D. programs in the sciences require full 4-quarter enrollment. The distribution of vacation time is to be determined by the student and their mentors. Before thesis advisors are selected absences must be approved by the Director of Graduate Studies. The curriculum of the BPHYS program requires first year students to be present on campus, full time. If circumstances require a more extended absence, the student must arrange for a leave of absence per university and PSD policy. <https://physicalsciences.uchicago.edu/current-students/policies/#residency>

4G. Academic Grievance Policy

A grievance is a problem or conflict that cannot be resolved by the student alone. Students with grievances are encouraged to bring them to the attention of the appropriate academic official. Students have three broad options for the resolution of grievances: Their faculty mentors, the administration of the Biophysical Sciences Graduate Program, and Division- University-wide resources.

- i) For many grievances, the student's thesis advisors or other faculty mentors (in particular the chair of the student's thesis committee) may be the best place to begin. All faculty members are expected to respond promptly to an expressed grievance, and may either address the problem directly or advise the student on other options.
- ii) Students may bring a grievance to any of the Executive Committee members listed at the beginning of this handbook. The program official to whom the student brings the grievance will meet with the student to discuss and attempt to resolve the grievance, if appropriate, or will advise the student on the correct avenue for the grievance.
- iii) Students may also avail themselves of other university resources, such as the Student Counseling Center or Deans of Students (PSD or BSD) to resolve the concern.

4H. Disability Accommodation

The program is eager to assist those who need accommodations for disabilities. The first step in arranging such an accommodation is to review the procedures at <http://disabilities.uchicago.edu/>. The Program Administrator and Dean of Students are available to discuss policies and procedures if further information is required.

The University of Chicago is committed to complying with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA). Student

Disability Services works to support and to provide accommodations for students with a wide range of physical, learning, and psychological disabilities.

4I. Terminal Master of Science Degree

Students in the Program in Biophysical Sciences are admitted directly for study toward the Ph.D. degree. Students who leave the program prior to completing the requirements for the Ph.D. may be awarded an MS degree. The final decision will be made by the Program Directors.

4J. Travel Support

The Program encourages travel to scientific meetings and provides partial reimbursement for eligible travel related expenses. Original receipts are required.

In Year one, students will be reimbursed for required travel including the Molecular Biosciences retreat and the Biophysical Society meeting.

The program will contribute a one time travel grant of \$1000. It is up to the student and advisors to determine when it is best to use this support. To receive reimbursement students must:

- have already applied for divisional support and, if available, meeting support;
- complete the application for reimbursement prior to travel;
- arrange to present a poster or oral presentation;
- provide proof that they have either presented a poster or a talk, e.g. meeting program; and they
- submit original receipts to Program Administrator within 30 days of return.

4K. Handbook Updates

The BPHYS policies described in this Handbook are updated annually or when changes are required by Divisional or University policy. Students are expected to be familiar with the content of the current Handbook and to comply with policies therein; however courses approved for selective credit and qualifying examination outcomes are part of the student's permanent record and will not be affected by changes made in subsequent versions of the Handbook.

5. University and Divisional Policies:

5A. Student Manual

The [Student Manual](#) is the official statement of University policies, regulations, and expected standards of student conduct that are applicable to all students. While students should be familiar with the manual as a whole, the following are commonly referenced by graduate students: [Student Life & Conduct](#), [Leaves of Absence](#), [University Grievance Policy for Graduate Students](#), [Policy on Harassment, Discrimination, and Sexual Misconduct](#), [Policy on Title IX Sexual Harassment](#), [Policy on Religious Accommodation for Missed Classes](#), [Assignments, and Exams](#), [Academic Honesty & Plagiarism](#), [Graduate Student Parent Policy](#), [Registration for Students in PhD Programs](#).

5B. Graduate Student Union

The terms and conditions of employment for certain graduate students at the University of Chicago who are employed to perform instructional or research services will be determined by a Collective Bargaining Agreement (CBA) between the University and Graduate Students United ("GSU-UE") for the duration of the assignment to perform such services. Students can access

the CBA and review frequently asked questions about graduate student unionization on the [Provost's Office website](#).

5C. Sexual Harassment Policy

The University of Chicago's Policy on Harassment, Discrimination, and Sexual Misconduct is described here:

<https://studentmanual.uchicago.edu/university-policies/university-of-chicago-policy-on-harassment-discrimination-and-sexual-miscon/>

This policy applies to students and other program participants, staff, postdoctoral researchers, faculty, and other academic appointees, volunteers, as well as to anyone on whom the University has formally conferred a title, regardless of employment status.

5D. Family Leave Policy

The program adheres to all University policies regarding Family Leave. The University of Chicago's Policy on Family Leave is described here:

<https://studentmanual.uchicago.edu/university-policies/graduate-student-parent-policy/>

5E. Dual Divisional Policies

Both the PSD and BSD maintain web pages with policies for graduate students. The BPHYS program largely follows PSD student policies. This Handbook attempts to clarify all of the policies relevant to students in the Program. Please bring incongruities and points of confusion to the attention of the Program administration.

<https://physicalsciences.uchicago.edu/current-students/policies/>

Appendix A: BPHYS dissertation requirements and recommended procedures

In order to earn a Ph.D. from The Graduate Program in Biophysical Sciences (BPHYS), the student must produce a sufficient body of original research, as judged by their Thesis Committee. The student must create, defend and submit a written dissertation on this research.

The Thesis Committee is tasked with ensuring research progress and communicating dissertation completion requirements to the student. The following steps are recommended to accomplish these goals:

During the meeting before the penultimate, the Committee should inform the student of tasks required to produce an adequate body of work for the dissertation. The student should also be informed of any requirements for publications resulting from dissertation work that the Committee may impose. An expectation is that a first author manuscript resulting from dissertation work will have been submitted to a journal.

The penultimate meeting should document that all committee requirements are fulfilled. The penultimate meeting may be used to defend the research that is to be included in the dissertation. If the Committee intends to use the meeting as such, this should be communicated to the student before the meeting. All data and figures for the thesis should be presented as well as a thesis outline. It is expected that the thesis will be completed by four months after this meeting.

After the penultimate meeting, the student will work with the advisors to produce a written dissertation of sufficient quality to meet committee expectations. When the advisor(s) and Committee Chair believe that a satisfactory document is forthcoming, the defense can be scheduled.

The student is required to distribute the dissertation to the Committee at least two weeks before the defense.

If concerns arise within the committee after the defense is scheduled, all committee members, the student, and the Program should be notified. It may become necessary to reschedule the defense.

Final Examination for the Degree of Doctor of Philosophy:

Procedures for the dissertation defense shall be determined by the Thesis Committee. The defense is typically a public presentation to which all are invited followed by a private session in front of the Thesis Committee.

If concerns arise as detailed above, the defense may be rescheduled by the committee at any time.

Student responsibilities after the Final Examination:

Dissertation submission to the University Dissertation office must adhere to official guidelines and timetables. <https://www.lib.uchicago.edu/research/scholar/phd/students/dissertation-deadlines/>

Appendix B: Default Rotation Plan

1st two rotation periods ~ 5 weeks each (*11 weeks including Spring Break, starting after the BPS meeting*)

2nd two rotation periods ~ 4 weeks each (*9 or 10 weeks from the end of Spring Quarter into Summer, including another one week Summer Break*)

A Rotation Form must be turned in to the Program Administrator for each rotation period. The Form is due by the end of the first week of the rotation.

The rotation period ends on the last Friday of July.

Appendix C: Policy on Internships

The BPHYS program has largely adopted the BSD policy, with the only change being that petitions will be decided by the Program Directors.

Background

This policy recognizes that many BSD graduate students wish to participate in part-time internship opportunities during their graduate education in order to: (1) take advantage of broad on campus resources to enhance their exposure to potential career paths post PhD; (2) build and enhance their transferable skillset; (3) build their professional network; and (4) assist them in establishing a clear plan towards graduation and next steps. Reciprocally, transferable skills developed during internships – in communications, data analysis, translation of research etc. – have strong potential to feedback positively on students' dissertation work and on the broader research community of their lab and beyond.

Of relevance, NIH recognizes a need for training beyond the primary dissertation research experience: "Uniform Guidance 200.400(f) requires the recognition of the dual role of all pre- and post-doctoral staff, who are appointed to research positions with the intent that the research experience will further their training and support the development of skills critical to pursue careers as independent investigators or other related careers. Neither Pre-Docs nor Post-Docs need to be specifically appointed in 'training' positions to require recognition of this dual role."

In addition: "Beyond the full-time training (typically 40 hours per week according to NIH), NIH recognizes that Kirschstein-NRSA fellows and trainees may engage in part-time employment incidental to their training. Fellows and trainees may spend on average, an additional 25% of their time (e.g., 10 hours per week) in part-time research, teaching, or clinical employment, so long as those activities do not interfere with, or lengthen, the duration of their NRSA training."

Currently, BSD students complete two registered TA-ships (one may be substituted by a TA training class) as an academic requirement, and also have opportunities to TA beyond that requirement and receive payment. TA-ships are considered to be 10 hour per week appointments.

In addition, BSD students are also eligible for myCHOICE internships, which are registered, unpaid, 10 hr/week, quarter-long mentored and evaluated experiences that carry a half course credit. Potential interns must be admitted to candidacy (although students may petition the Program for an exception) and both advisors *must* agree to the experience.

Policy

1. Part-time graduate student professional experiences, beyond the student's primary research project or program-recommended class work that require 5-hrs or more effort per week (whether paid or unpaid), should be evaluated in accordance with this policy.

2. Professional experiences include, but are not limited to:

- †myCHOICE internships

- †other internships in offices on campus

- †other internships off campus

- †paid TA-ships beyond the divisional (or Training Grant) program requirement

- †research assistantships unrelated to dissertation research

- †elective classes in divisions beyond BSD or PSD

- †Chicago Center for Teaching fellowships

- †Innovation Fund Associates Program at the Polsky Center for Entrepreneurship and Innovation

- †TechStart program with the Polsky Technology Commercialization Office

3. It is expected that the majority of appropriate experiences will take 10 hours a week or less. Note TA-ships for pay are allocated 10 hrs per week, as are myCHOICE internships. Part-time internships/professional development experiences should never exceed 15 hrs per week.

4. Students who wish to participate in any of the listed professional experiences should first approach their thesis mentor for input and permission. (Note that myCHOICE internships have a formalized mentor sign-off requirement).

5. In cases where the student and mentor disagree on whether the experience is appropriate, students may prepare a written petition describing the nature of the experience, the start date, the time commitment (including travel time if off-site) in hours per week, the number of weeks, how they plan to avoid loss of research productivity, and the value of the experience. The petition should be submitted to all members of their thesis committee and the Program Directors, with the Program Administrator copied.

6. The thesis committee members, together with the Directors, will evaluate whether the professional experience is appropriate for the student based on their knowledge of the student and the thesis project. Relevant issues to consider include the student's stage in their thesis work, their progress to date, their demonstrated ability (or lack of ability) to juggle competing assignments, the synergy between the proposed professional experience and the thesis work, and the potential value of the experience in the student's career development.

7. Deliberations will typically be electronic and on a short time frame, taking into account the requested start date of the professional experience. In some difficult cases a meeting (with or without the student) may be useful. While it is recognized that the advisor has more relevant information than other committee members, the adviser does not have automatic veto power. The thesis committee chair will evaluate all arguments and make a final written recommendation to the Directors, copying the program administrator.

8. The Program Directors, who may solicit additional input from the program's curriculum or steering committee if desired, will make a final decision and inform the student of that decision.

9. The program administrator will retain petitions and decisions in the student's file.
10. Typically, students should not complete more than 3 part-time quarter-long professional experiences during their tenure.
11. Students who have entered the 7th year of studies (25th quarter) should no longer be participating in professional experiences.
12. Students should not typically be involved in internships in the quarter of graduation, however, it may be appropriate for a student to perform an internship after their defense has been completed if the timing of the defense requires that they be registered for the remainder of the quarter.
13. BSD students occasionally take leaves of absence for one or more quarters to pursue full-time internships off campus. While we view this as a different class of experience to the part-time internships discussed above, the process described in points 4-10 above could similarly be used to evaluate whether the internship is appropriate for the student.

APPENDIX D: Changing Advisors

In order to provide clarification on the process of transitioning research from one mentor's group to another, the message below outlines specific information about what steps the program requires, as well as student responsibilities. When a student is without any advisor, they can expect to receive a letter that notes that their research is in a transition period and that they are currently without advisors. An example letter:

Dear student,

We are writing because your research is in a transition period, and you are currently without advisors. This happens from time to time and is not a cause for undue concern. The program understands that you are facing challenges during this period and we want to let you know what assistance the program will provide, as well as your responsibilities during this transition.

The program will provide six months of full financial support to ensure that you have time to explore options for new advisors. When you secure new advisors, the program will work with them to ensure a smooth transition of your financial support. If potential new advisors have any questions about their financial responsibility, please refer them to program staff or leadership. You are not expected to address these issues yourself.

The program is ready to help with support and resources during this transition phase. We encourage you to seek advice from whomever you wish during this time, including program leadership, faculty trainers and staff. We are all happy to assist you and you should feel free to seek advice from multiple sources. Members of BSAB are also available to discuss this transition with you; please feel free to contact a BSAB member to connect with a student mentor.

During this transition phase we require that you check in once a month with a written communication to Michele Wittels describing your efforts to find new advisors. These updates will help us to give you appropriate guidance, facilitate your transition, and remain up to date on your progress.

At the end of the 6 month transition period, if an advisor has not been secured, a reassessment will be made by program leaders, in consultation with you. Financial support beyond the six month transition period is not guaranteed.