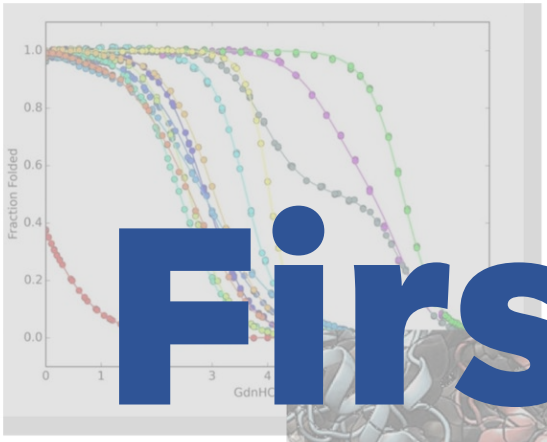
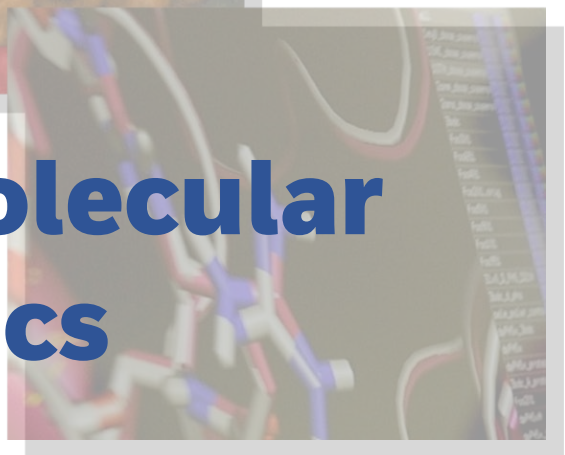
JOHNS HOPKINS
KRIEGER SCHOOL
of ARTS & SCIENCES



First Year Success Guide 2024-2025



Program in Molecular Biophysics

IMPORTANT DATES FOR 1ST YEARS - 2023-2024 ACADEMIC YEAR

First Day of Classes	August 26, 2024
Fall Rotation Presentations (PMB Only)	December 6, 2024
Spring I Rotation Presentations (PMB & Jenkins)	March 14, 2025
Spring II Rotation Presentations (PMB & Jenkins)	May 16, 2025
Join Thesis Laboratory	May 19, 2025
1st-Year Proficiency Reviews	May 19-30, 2025

ROTATION CYCLES

Fall Rotation (PMB Only)	October 21, 2024 – December 6 2024
Spring I Rotation(PMB & Jenkins)	January 21, 2025 – March 14, 2025
Spring II Rotation (PMB & Jenkins)	March 24, 2025 – May 16, 2025

BIOPHYSICS FALL 2024 CALENDAR

SEPTEMBER				
Date	**Event**	**Time**	**Room**	**Host**
Tues, Sept 3	Faculty Meeting	12pm - 1:30pm	Merg 70B	Doug
Thurs, Sept 5	Institute for Biophysical Research (IBR)	All day	JHU Bloomberg Center	
Mon, Sept 9	Kossiakof Lecture: Dr. Yuhai Tu, IBM	4pm - 5pm	Merg 111	Brian
Mon, Sept. 23	BPH SEMINAR: Dr. Tobias Baumgart, Univ. of Pennsylvania	12pm - 1pm	Merg 111	Maggie
Tues, Sept 24	PMB Student Seminar: Max Zegans	10am	SOM	
Sat, Sept. 28-T ues, Oct 1	Gibbs Conference - Carbondale, IL			
OCTOBER				
Date	**Event**	**Time**	**Room**	**Host**
Mon, Oct 7	Faculty Meeting	1:15pm - 3pm	70B	Doug
Mon, Oct 7	BPH Seminar: Dr. Danzhou Yang, Purdue University	12pm - 1pm	Merg 111	Greg
Mon, Oct 14	BPH Seminar: Dr. Krastan Blagoev	12pm - 1pm	Merg 111	Doug
Fri, Oct 25	Jenkins Student Seminar: Richard Yang	12pm	Mudd 100	
Mon, Oct 29	Chalk It Up: Vince Hilser	11am - 12pm	SOM	Karen
NOVEMBER				
Date	**Event**	**Time**	**Room**	**Host**
Mon, Nov 4	Faculty Meeting	1:15pm - 3pm	70B	Doug
Fri, Nov 8	Jenkins Student Seminar: Tiantian Shang	12pm	ZOOM	
Mon, Nov 11	BPH Seminar: Dr. David Shechner, Univ. of Washington	12pm - 1pm	Merg 111	Sarah
Wed, Nov 13	PMB Student Seminar: Sam Botterbusch	10am	SOM	
Mon, Nov 18	Chalk It Up: Sean Prigge			
Fri, Nov 22	PMB Student Seminar: Neil Wood	12pm	Mudd 100	
Mon, Nov 25	PMB Student Seminar: Elise White	12pm	Merg 111	
Nov 28 & 29	Thanksgiving Break			
DECEMBER				
Date	**Event**	**Time**	**Room**	**Host**
Mon, Dec 2	Faculty Meeting	1:15pm - 3pm	Merg 70B	Doug
Fri, Dec 6	Jenkins Student Seminar: Gabriel Jimenez	12pm	Mudd 100	
Dec 24 - 31	Winter Break			

Program In Molecular Biophysics
August 2024

Study Guide for the 1st Year Proficiency Review

All first-year students in the PMB will participate in an oral proficiency review in May of their first year. The goals of this exercise are to identify deficiencies, to select courses that will remedy these deficiencies, and to give the student experience in an oral examination setting. With this format, we can tailor course selection to each individual student, providing each student with the broad knowledge base needed for research in biophysics, and for preparation for the GBO.

The proficiency review for PMB students will focus primarily on the topics listed in Section A (Biochemistry & Cell, Developmental, and Molecular Biology)

Students should make sure that they have an adequate background in sections B and C (general and organic chemistry). Although neither the first-year proficiency exam nor the GBO will cover these topics directly, students will need familiarity with these areas of chemistry to succeed in their coursework and their thesis work in biophysics.

This list of topics is broad, and may appear to be daunting. We emphasize that we are not looking for specific details, but rather a general overview, and an ability to think about problems in these fields. It is also emphasized that this review process is not an examination which one can fail; rather, if a lack of knowledge in one or more of these areas is apparent, courses will be taken to give the student the needed material.

It is suggested that students buy the textbook Essential Cell Biology (Alberts et al.) and slowly and systematically review the material during the 1st year.

A. Biochemistry & Cell, Developmental, and Molecular Biology

- cell structure: prokaryotes vs eukaryotes. Archaea
- organelles: structure and function
- cell division
- cell-cell interactions, tissues
- nucleic acid and chromosome structures
- DNA synthesis & repair, recombination, mutation
- rudiments of genetics
- recombinant DNA & genetic engineering
- coenzymes and vitamins, carbohydrates, glycoconjugates, nucleotides, lipids, membranes, proteins, amino acids, nucleic acids
- enzymes: kinetics, specificity, allosteric regulation, mechanisms of enzyme action (kinetics and mechanisms will be covered in coursework)
- ATP and energy-rich compounds
- intermediary metabolism: glycolysis, tricarboxylic acid cycle, electron transport and oxidative phosphorylation, gluconeogenesis, glycogen, fatty acid biosynthesis
- nitrogen fixation, photosynthesis
- transcription, RNA processing
- regulation of gene expression, operons, phage lambda
- genetic code
- protein synthesis, degradation and modification
- viruses
- cytoskeleton and muscle contraction
- membrane transport (including traffic of proteins across membranes)

- signal transduction, hormone action, sensory transduction
- excitable membranes, neurotransmission, ion channels
- immune system, antibody diversity, structures
- chemotaxis
- biology of cancer
- supramolecular structures- ribosomes, replication forks, membrane bound complexes
- molecular evolution
- "genomics" as a way of tying a lot of this together

B. General Chemistry (any general chemistry textbook)

- stoichiometry, mole concept, chemical equations, atomic weights, molecular formulas
- general properties of gases, solids, liquids and solutions
- intro to chemical equilibrium, acids and bases, buffers, ionization equilibria, acid base titration, electrochemistry, REDOX, solubility
- electronic structure of atoms, the periodic table, general properties of the elements
- chemical bonds
- molecular orbitals
- water, pH

C. Organic Chemistry (any organic chemistry textbook)

- nomenclature, types of compounds
- electron movement, resonance, tautomerism, aromaticity
- types of bonds, shape of molecules, symmetry, asymmetry, chirality, optical activity
- chemical reactivity: acids, bases, resonance, inductive effect, steric effects, hydrogen bonds, Lewis acids and bases
- organic reactions: nucleophilic substitutions, additions, eliminations, electrophilic substitution, radicals
- rudiments of physical organic chemistry: valence bond/resonance theory, HMO theory, conformational analysis, reaction rates (transition state theory), molecular mechanics, isotope effects

Program in Molecular Biophysics

Last Updated: August 22, 2024

2024 – 2025 Student Handbook

Table of Contents

1 Introduction

Welcome to the Program in Molecular Biophysics!

This handbook serves as a resource for graduate students and faculty in the Program in Molecular Biophysics (PMB). It is subject to change and will be updated on a regular basis. The latest version of the handbook can be found at https://pmb.jhu.edu/the-program/.

The information contained in this document is meant to facilitate the transition of first-year students from undergraduate to graduate status and guide advanced students to degree. First-year students should consult the FAQ section at the end of this handbook for useful tips.

2 PMB Graduate Student Milestones by Year

2.1 As You Begin the Program

The first year in PMB has many more organized items than subsequent years. Below, you will find a summary of major first year activities and dates (as of August 22, 2024). Although we try our best to include the details for everything, it is both *incomplete* and *subject to change* because adjustments are often made during the academic year. When changes occur, you will likely receive emails or announcements from instructors, TAs, administrators and staff, or the program director or co-director. Please pay attention to those announcements. We count on you to assimilate these changes into your schedule. If you have any question, confirm with instructors, administrators, staff, and each other.

A word of warning: Day-to-day adjustments to a course or module meeting time may not be reflected in the calendar, so it is important that you check with your instructor or with the Academic Program Administrator, if you have any doubt.

Take care of yourself and your classmates

The rhythm of graduate student life is different from that of an undergraduate student. The first PMB year is intense. You will be busy with courses, rotations, modules, seminars, and other activities. You will need to develop strong executive functioning skills[1] from the beginning so that you are able to navigate the responsibilities of being a graduate student, enjoy learning, and avoid excessive stress. Use the university resources described in this document to make the most of your training.

[1] Executive functioning skills include planning (being able to make plans, carry them out, and set and meet goals), focus (concentrating on what's most important at any given time), self-control (having the ability to control how you respond to your emotions and stressful situations), awareness (noticing people and situations around you and how you fit into the picture) and flexibility (being able to adapt to changing situations). Text adapted from this site.

2.2 Year One

2.2.1 Fall Semester

Schoolwide Orientation (online on Canvas)	
Library Orientation	Aug 16
Schoolwide Orientation BBQ/Welcome Bag Pick Up	Aug 16
Program Orientation	Aug 22
Online Safety Course (MyLearning)	Aug 22 – 25
Online "Avoiding Plagiarism" Course (MyLearning)	Aug 22 – 25
Institute for Biophysical Research Retreat	Sept 5
1-on-1's with PMB Director	To Be Scheduled
AS.250.649 - Introduction to Computing in Biology	Aug 26 – Sept 26
AS.250.621 - Cryo-EM Module	Sept 30 – Oct 4 (Tentatively)
AS.250.622 - Statistics and Data Analysis	Oct 7 – Oct 11 (Tentatively)
AS.250.623 - Macromolecular Simulation	Oct 14 – Oct 18 (Tentatively)
AS.250.640 - How to be an Effective STEM JEDI	Aug 26 – Dec 6
AS.250.685 - Proteins & Nucleic Acids	Aug 26 – Dec 6 (Final exam TBA)
AS.250.601 - Biophysics Seminar	Aug 26 – Dec 6
AS.250.820 (01) - Laboratory Rotation (Fall)	Oct 21– Dec 6
Chalk It Up – Vince Hilser (On SOM Campus)	Oct 29
Chalk It Up – Sean Prigge (On HW Campus)	Nov 18
Fall Rotation Talks	Dec 6
Faculty Research Forums	Aug 23
Student Evening Series	Sep – Dec
Self-study in Biochemistry, Cell & Molecular Biology	Ongoing – Set time aside for this

2.2.2 Intersession

AS.250.620 - Optical Spectroscopy	Jun 6 – 10
AS.250.624 - NMR Spectroscopy	Jun 13 – Jun 17
Self-study in Biochemistry, Cell & Molecular Biology	Ongoing – Set time for this

2.2.3 Spring Semester

AS.250.625 - Single Molecule Measurements	To Be Scheduled
AS.250.689 - Physical Chem of Bio Macro	Jan 21 – Apr 28 (Final exam TBA)
AS.250.601 - Biophysics Seminar	Jan 21 – Apr 28
AS.250.820 (02) - Laboratory Rotation (Spring I)	Jan 21 – Mar 14
AS.250.820 (03) - Laboratory Rotation (Spring II)	Mar 24 – May 16
PMB Recruitment Weekend	Feb 6 – Feb 9
Chalk It Up – Dominique Frueh (On HW Campus)	Mar 10
Spring I Rotation Talks	Mar 14
Chalk It Up – Maggie Johnson (On SOM Campus)	Apr 8
Spring I Rotation Talks	May 16

Deadline to Join Thesis Laboratory	**May 19**
Student Evening Series	Jan – May
Self-study in Biochemistry, Cell & Molecular Biology	Ongoing – Set time aside for this
Proficiency Evaluation	Last 2 Weeks of May

2.2.4 Summer

AS.360.625 - Responsible Conduct of Research	July 11 – 25
AS.250.801 - Dissertation Research	May 19 – Aug 13
SOM Registration*	July 2

*For students joining a lab at the Med School Campus (SOM & SPH), work with the Program Administrator to assist in processing.

2.3 Year Two

2.3.1 Fall Semester

AS.250.601 - Biophysics Seminar	Aug – Dec
AS.250.801 - Dissertation Research	Aug – Dec
ME.100.715 - Proteins and Nucleic Acids II	Aug – Dec
XX.XXX.XXX - Elective*	Aug – Dec**
Student Evening Series	Sept – Dec

* The elective requirement can be met by taking one (1) 3.00-Credit elective course, or by taking two (2) 1.5-Credit elective courses. Electives must be approved by both the student's thesis advisor and by the PMB program director. List of previously approved elective courses.
** The elective course can be taken in either the Fall or Spring semester of Year 2. In extenuating circumstances, a student may take an elective course in Year 3, but this must be approved the student's Advisor and the PMB Director.

2.3.2 Spring Semester

AS.250.801 - Dissertation Research	Jan – May
AS.250.601 - Biophysics Seminar	Jan – May
AS.250.615 - Biophysics Writing Workshop	Jan – May
AS.250.610 - Savvy Science Seminars I	Jan – May
XX.XXX.XXX – Elective*	Jan – May**
RCR Refresher Workshop	April
Student Evening Series	Jan – May
Graduate Board Oral Examination	2nd & 3rd Weeks of April

* The elective requirement can be met by taking one (1) 3.00-Credit elective course, or by taking two (2) 1.5-Credit elective courses. Electives must be approved by both the student's thesis advisor and by the PMB program director. List of previously approved elective courses.
** The elective course can be taken in either the Fall or Spring semester of Year 2. In extenuating circumstances, a student may take an elective course in Year 3, but this must be approved the student's Advisor and the PMB Director.

2.3.3 Summer

AS.250.801 - Dissertation Research	May – Aug
AS.250.611 - Savvy Science Seminars II	Aug

2.4 Year Three

2.4.1 Fall Semester

AS.250.601 - Biophysics Seminar	Aug – Dec
AS.250.801 - Dissertation Research	Aug – Dec
Thesis Proposal Practice Talk*	Oct – Dec
Thesis Proposal Seminar	Nov – Dec
Student Evening Series	Sep – Dec

*Practice talk should be scheduled for student evening series, at least 1 week prior to the seminar.

2.4.2 Spring Semester

AS.250.801 - Dissertation Research	Jan – May
AS.250.601 - Biophysics Seminar	Jan – May
RCR Refresher Workshop	April
Student Evening Series	Jan – May

2.4.3 Summer

AS.250.801 - Dissertation Research	May – Aug

2.5 Year Four

2.5.1 Fall Semester

AS.250.601 - Biophysics Seminar	Aug – Dec
AS.250.801 - Dissertation Research	Aug – Dec
Thesis Advisory Committee Meeting	Oct – Dec
Student Evening Series	Sep – Dec

2.5.2 Spring Semester

AS.250.801 - Dissertation Research	Jan – May
AS.250.601 - Biophysics Seminar	Jan – May
RCR Refresher Workshop	April
Student Evening Series	Jan – May

2.5.3 Summer

AS.250.801 - Dissertation Research	May – Aug

2.6 Year 5 to Final Year

2.6.1 Fall Semester

AS.250.601 - Biophysics Seminar	Aug – Dec
AS.250.801 - Dissertation Research	Aug – Dec
Thesis Advisory Committee Meeting	Oct – Dec
Student Evening Series	Sep – Dec

2.6.2 Spring Semester

AS.250.801 - Dissertation Research	Jan – May
AS.250.601 - Biophysics Seminar	Jan – May
RCR Refresher Workshop	April
Thesis Advisory Committee Meeting	Apr – May
Student Evening Series	Jan – May

2.6.3 Summer

AS.250.801 - Dissertation Research	May – Aug

2.7 Final Year

Private thesis defense to thesis committee
Submission of final dissertation to library via ETD
Thesis Seminar (after submission of corrected thesis to library)

3 PMB Administration

3.1 Administrative Structure

Dr. Karen Fleming is the director of the Program in Molecular Biophysics. She is responsible for the day-to-day operations of the program. Her goal is to solve problems while they are still small, so please feel free to reach out. Major policy questions and serious issues concerning the status of individual students are addressed by the PMB Steering Committee, a standing committee composed of PMB faculty from the four participating schools and student representatives from both campuses.

3.2 Administrative Contacts

3.2.1 Program Director

Dr. Karen Fleming, Director
Thomas C. Jenkins Department of Biophysics
420 Jenkins Hall
School of Arts & Sciences
Phone: 410-516-7256
Email: Karen.Fleming@jhu.edu

3.2.2 Interim Academic Program Administrator, Homewood

Jessica Appel
101 Jenkins Hall
School of Arts & Sciences
phone: 410-516-7243
Email: jappel@jhu.edu

3.2.3 Sr. Academic Program Coordinator, Med School

Mikalah Mack
725 N Wolfe St
School of Medicine
Email: mmack6@jh.edu

3.2.4 Department Administrator

Jessica Appel
Thomas C. Jenkins Department of Biophysics
101 Jenkins Hall
School of Arts & Sciences
phone: 410-516-7243
Email: jappel@jhu.edu

3.3 Faculty Composition

The list of 31 participating faculty and their affiliations are listed in Section 15.

3.4 Student Representatives

The 2024-2025 student representatives are Edgar Manriquez-Sandoval & Tanya Nesterova.

PMB student representatives are responsible for collecting and conveying student concerns to PMB administration, participating in yearly PMB steering committee meetings, and communicating relevant decisions reached at these meetings to the student body. Representatives will survey or otherwise solicit student input in advance of steering committee meetings and will summarize, anonymize, and present this information during a dedicated portion of the committee meeting. Representatives are highly encouraged to hold PMB-wide, student-only meetings to facilitate self-organization of all PMB students, for example to create social coordinators and promote unity across campuses and cohorts.

Representatives will serve a two-year term and organize an election (May/June) at each campus on alternating years to choose a successor ensuring that the incoming representative will always work with an incumbent representative.

Summary of criteria for students' vote:

- Eligible candidates are in their third or fourth year
- One candidate will be chosen for each campus
- Two-year, staggered appointments, with a new third year representative being voted in every year from alternating campuses

4 Useful Information

4.1 School and Departmental Affiliation

Although the faculty members of PMB come from many departments, all students in the program are enrolled in one of only two departments: the Thomas C. Jenkins Department of Biophysics in the School of Arts & Sciences on the Homewood Campus or the Department of Biophysics & Biophysical Chemistry in the School of Medicine on the East Baltimore Campus.

- All first-year students are enrolled in the Thomas C. Jenkins Department of Biophysics in the School of Arts & Sciences on the Homewood Campus and register there.

- If a student chooses (usually in May of the first year) a thesis advisor at the School of Medicine or the School of Public Health (the East Baltimore Campus), that student must register in and transfer enrollment to the Department of Biophysics & Biophysical Chemistry in the School of Medicine.

There are a few important issues that arise because of PMB's interdivisional character.

- The health insurance carriers for students at the two campuses are similar but not identical. Students who register in the School of Medicine must make sure that their insurance is transferred.

- The East Baltimore Campus has a system of ID badges. It is difficult to get into the buildings at off hours without a badge. Students doing rotations on the East Baltimore Campus must request a badge from Cynthia Wolberger in the Department of Biophysics & Biophysical Chemistry, WBSB 608E. This badge is needed even if a student has a Homewood photo ID badge (J-card).

4.2 Registration

To maintain full-time student status (for tax and undergraduate loan deferment purposes) students must register for **research every semester** (Fall, Spring, and Summer) once they match to a lab. Registering on time is important: missing the deadline will result in substantial fines to the student and can also result in academic probation. For additional information, go to https://studentaffairs.jhu.edu/registrar/students/graduate-registration/

5 How to Cite the Training Grant in your Publications

It is very important to cite the support of the training grant in your publications. Even if your paper is published after you have moved to being supported by your advisor, please include the appropriate grant number below acknowledging support. If you have any questions about this, please contact the director. In addition, please make sure that your publications are compliant with NIH policies with timely depositions.

T32-GM008403 should be acknowledged in any publication resulting from work performed by a student while being supported by the training grant before July 1, 2020.

T32-GM135131 should be acknowledged in any publication resulting from work performed by a student while being supported by the training grant after July 1, 2020.

6 Academic Advisors

Students are encouraged to discuss any questions about the program, academic problems, and other issues that may arise with the Academic Program Administrator or the PMB Director, Dr. Karen Fleming.

During the first year of your program, the Academic Program Administrator will officially be assigned as your Academic Advisor in JHU's Student Information System (SIS). After students match with a Research Advisor at the end of their first year, that individual will be assigned as the student's Academic Advisor in SIS. The Academic Program Administrator will also remain assigned to the student as an 'Other Advisor' in SIS to be able to assist as needed.

Minor issues with research advisors should be discussed as soon as they arise with either the first-year mentor or the academic advisor. Also see the section on Grievance, Conflict Resolution, and Ombud.

7 Participation in Program Evaluation and Assessment

To continue to improve and modernize the Program in Molecular Biophysics, and to be sure students are advancing in their thesis research, all students will be asked to participate in various polls and surveys throughout their time in the program. There are two types of surveys. The first is well established and focused on programmatic components of PMB, such as coursework, rotations, opportunities for advancement, resources for career placement, and overall program satisfaction. These surveys will be administered by the program or the Center for Teaching Excellence & Innovation (CTEI) on the Homewood Campus, and are currently scheduled in the second and fourth year, and upon completion of the Ph.D. These surveys are anonymous.

The second type of survey is in the development phase. It is an annual evaluation of each student's thesis advisor, starting in year two. Thesis advisor evaluations will be conducted by the Office of Academic Assessment at the School of Medicine. These evaluations will be used in two ways. First, they will inform the program director and steering committee on overall mentorship from the student perspective, including breadth of mentorship styles and commitment to training. For this purpose, survey results are anonymized in terms of both students and their advisors. Second, when individual surveys indicate a problem between the student and advisor, the Office of Academic Assessment communicates these surveys directly to the program director, revealing the identities of the student and the advisor. In such cases, the program director works directly with the student to mediate a workable solution.

8 Program Requirements

8.1 General Expectations

In their first year, students are expected to divide their time equally between coursework and rotation laboratory work, *spending approximately 25 hours on each during the first rotation. For rotations two and three (Spring semester), students should shift additional effort (~35 hours) to their rotation work, given the lighter course load in the Spring.* The most important decision made during the first year is the choice of a thesis advisor, and therefore attention to rotation work is essential. The first Summer session is normally devoted to module completion, RCR course, and *mostly thesis research*. Less coursework is required in the second year, with the expectation that students will spend 75% or more of their time conducting thesis research in the semester they take their elective, and 100% in all other semesters. (Effort distribution should be adjusted according to the number, timing, and type of elective, whether half or full).

The first thesis review will take place in the fifth semester (Fall of the third year). At the end of that semester, students will be evaluated on research progress and their ability to articulate the importance of their thesis project. Subsequent thesis reviews will occur on a yearly (year 4) and half-yearly (years 5 and beyond) basis. The Ph.D. dissertation defense is conducted in a private session with the Thesis Defense Committee. After successful defense and submission of the

corrected thesis to the library, the student presents a public thesis seminar required by the program.

In addition to these PMB-specific milestones, there are general university-wide responsibilities that graduate students at Johns Hopkins University are expected to adhere to, as well as rights that graduate students can expect. A detailed list of these rights and responsibilities, which include subjects such as accessibility, academic freedom, and professional relationships with advisors and other students, is available at https://e-catalogue.jhu.edu/university-wide-policies-information/rights-privileges-responsibilities/.

During your time in the program, prompt communication with departmental and program leadership is critical. Therefore, all students are expected to respond to emails from PMB Program leadership or the Biophysics Department within two days of receiving them.

8.2 Core Courses

The following courses are required for all entering PMB students. Because of curriculum upgrades, some changes may apply and are to be communicated when available.

- Mandatory Online Safety Course *(MyLearning)*
- Mandatory Responsible Conduct of Research Course *(Bosch)*
- AS.250.601 - Biophysics Seminar *(Woodson)*
- AS.250.620 - Optical Spectroscopy *(Lecomte & Tripp)*
- AS.250.621 - Cryo-EM Module *(Bailey/Twomey)*
- AS.250.622 - Statistics and Data *(Barrick)*
- AS.250.623 - Macromolecular Simulation *(Lau)*
- AS.250.624 - NMR Spectroscopy *(Majumdar)*
- AS.250.625 - Single Molecule Measurements *(Xiao/Wu)*
- AS.250.689 - Physical Chem of Biological Macromolecules *(García-Moreno)*
- AS.250.685 - Proteins & Nucleic Acids *(Woodson/Bowman)*
- ME.100.715 - Proteins and Nucleic Acids II *(Berger)*
- AS.250.649 - Introduction to Computing in Biology *(Bowman)*
- AS.250.820 - Laboratory Rotation *(Staff)*
- XX.XXX.XXX - Elective Course*

*Graduate-level science-based course, chosen by the student and approved by the student's Thesis Advisor and the DGS

All students are expected to attend every lecture and turn in assignments on time. Failure to attend classes could result in a failing grade for the course or a probation period.

8.3 Seminars

Seminars presented at the University serve as more than a set of unrelated talks on specialized topics. Each department's seminar series is put together as a whole, integrating speakers and topics into a single series. The seminar series knits the department together, providing a common intellectual experience for students, postdocs, faculty, and staff. During your scientific career, you should make it a priority not only to attend the seminars that are of interest to you personally, but also to attend your department's seminar series.

To help establish this habit, during their *entire* tenure in the program, students are required to attend the following:

- All named lectures and seminars.
- *Biophysics Seminars* - The required course *AS.250.601 - Biophysics Seminar* comprises the Thomas C. Jenkins Department of Biophysics seminar series. These seminars are held on Mondays at noon. PMB students who are in their first year or matched to a lab on the Homewood Campus must register for this course every semester. Attendance is expected at every seminar, unless you are a first-year student currently rotating on the SOM Campus. If you are rotating on the SOM Campus, or matched to a lab on the SOM Campus, you will attend the SOM *Biophysics Seminars*.
- *Chalk it up to Biophysics* seminars are held four to five times per year, as part of the Jenkins Department of Biophysics seminar series, and as part of the Department of Biophysics & Biophysical Chemistry Series. They are presented by faculty from many biophysics-related departments and emphasize the conceptual basis behind the work of an individual laboratory. Students past their second year are expected to attend. Attendance is mandatory for first and second-year students.

Repeated absences from any of the above will result in a failing grade for the seminar course.

Students are also encouraged to attend:

- *Biophysics Student Evening Series* - This student-led event is a monthly meeting where students get experience and feedback presenting their research in front of others. It is a friendly environment where students help each other with public speaking and presentation of ideas.
- Other departmental seminars on the Homewood campus and Medical School campuses that may be of interest. These include the departments of Biology (Homewood, Thursdays 4pm), Chemical and Biomolecular Engineering (Homewood, Thursdays 10:30am), Biophysics and Biophysical Chemistry (School of Medicine, Wednesdays 1:30pm), Mechanical Engineering (Homewood, Thursdays 3pm), and Chemistry (Homewood, Tuesdays 4:15pm).

8.4 Policy on Grades

- Students must receive a grade of C+ or higher in all required courses and in laboratory rotations. Students must repeat any course in which they receive a grade below C+.
    - Repeating a required course and failing to receive a grade of C+ or higher for a second time is grounds for termination from the PhD program.
- Failure to receive a grade of C+ or higher in two required courses is grounds for termination from the program.

During each semester, students must keep a grade point average of 3.0 (B) for all courses. Falling below the GPA of 3.0 for one semester will result in a warning to the student; falling below a 3.0 GPA for two semesters is grounds for termination from the program.

The grade requirement is not intended to discourage students from taking advanced courses in other disciplines (e.g., physics, chemistry, and mathematics). Such courses can be exempted from the "B" requirement by arrangement with the program director.

When courses are not taken, dissertation research must be completed with a passing (P) grade. A failing grade (F) will lead to probation (see section on Probation and Dismissal from the Program).

8.5 Responsible Conduct of Research

Conducting research with the highest ethical standards is essential both for good science, and for maintaining the public trust of science and scientists. PMB strives to impart such standards on all trainees through regular classroom instruction in the Responsible Conduct of Research (RCR). Moreover, the NIH requires that all fellows receive regular RCR instruction as part of their training. There are two activities required to meet these requirements:

- PMB students must take an RCR class offered during Summer of their first year and organized by the University on the Homewood campus.
- All trainees and fellows beyond the first year must attend yearly, mandatory RCR workshops that are organized by PMB faculty. The timing of these workshops varies. Watch for announcements. **Failure to attend the RCR workshops without receiving prior approval from the program director will result in being placed on probation.**

8.6 Rigor and Reproducibility

The NIH has introduced a requirement to ensure "rigor in designing and performing scientific research and the ability to reproduce biomedical research findings." Rigor and reproducibility are intrinsic to the research conducted in every PMB laboratory. In addition, all courses and modules emphasize these cornerstones of science advancement.

8.7 Faculty Research Interests

Once on site, new students have opportunities to learn about current faculty research interests besides perusing the PMB website.

- An annual retreat for the Hopkins biophysics community is held during orientation week, giving a full picture of the research taking place in PMB laboratories and a chance to think about rotation possibilities.
- Faculty forums are held during the Fall semester. According to timing, these can provide information for the first rotation and are especially useful for subsequent rotations.
- Students should identify PMB faculty/research programs they are interested in, and should feel free to set up one-on-one meetings to discuss research, thesis mentorship, and rotation possibilities.

8.8 Laboratory Rotations

The most important decision each student will make in their time at Hopkins concerns the lab in which they will conduct their thesis research. The experiences they have in their first-year laboratory rotations are the primary means by which students make this key decision. Thus, the main goal of each rotation is to give the student a specific research experience and the feel for a laboratory and campus. The research rotation is also used by the advisor to evaluate whether the student is a good fit for the lab.

Each student must complete three laboratory rotations during their first academic year. These rotations will be graded. Each rotation has a duration of eight to nine weeks. Although these rotations are short on the timescale of scientific discovery, students should strive to advance their projects and make scientific contributions in each rotation.

All three of these rotations must be performed in the laboratories of PMB faculty members, without exception.

Students are required to choose at least one rotation on the Homewood campus and one on the East Baltimore campus. The order in which students select their three rotations should be determined primarily by their long-term (i.e., thesis) interests (highest interest = first rotation). Students should take charge of contacting faculty to discuss possible rotation and thesis projects. Scheduling considerations include availability of individual faculty members and coordination with other first-year students. Students will meet one-on-one with the program director (Dr. Fleming) in mid-September to discuss interests and availability. At this meeting, students should share their top three choices for rotation labs, ranked in order of preference.

For the first two rotation periods, only one PMB rotation student is permitted in an individual lab. In particularly difficult situations, the director will assess whether an exception can be made to the one-student-per-lab rule. In the third rotation period, multiple PMB students can rotate in the same lab. Even if an exception is made to the rule of one PMB student per lab for the first two rotations, the requirement to conduct at least one rotation on the Homewood and one on the East Baltimore campus still applies.

At the end of each rotation period, students will present a 10-minute talk in front of the Rotation Advisors and other 1st-year students. The rotation talks are a required element of the rotation, and failure to present a talk can result in a failing grade for the rotation. All other biophysics faculty and students are invited to attend. The Fall 2024 rotation is scheduled for Oct 21st – Dec 6th, with the rotation talks taking place on Dec 6. The Spring 2025 rotations are scheduled for Jan 21st – Mar 14th, with the Spring I rotation talks taking place on March 14th, and Mar 24th – May 16th, with the Spring II rotation talks taking place on May 16th.

Students are expected to select their advisor and lab and begin their thesis research by the Deadline to Join Thesis Laboratory, which occurs on the Monday immediately following the Spring II Rotation Talks. Failure to find a lab will result in probation. In unusual circumstances, the program director may authorize a fourth rotation (see the section on Probation and Dismissal from the Program).

Students who do not initiate a fourth rotation by July 1 or who do not join a lab by 31 July are subject to dismissal.

Occasionally, incoming students spend part of the Summer before their first year working in the laboratory of a PMB faculty member. These students are registered as graduate students, but *the Summer period does not substitute for one of the student's three rotations*. However, such students may choose to do their first (or a subsequent) rotation in that same laboratory.

It is expected that students will work diligently during each rotation, regardless of their choice of thesis laboratory.

8.8.1 Rotation Evaluations

The rotation advisor must complete a form evaluating the student's effort, interest, comprehension, and skill. Rotations will be graded, and the feedback form will become part of the student's departmental academic file. An evaluation with one unsatisfactory grade (C or lower) will result in a warning letter to the student, and a second rotation with an unsatisfactory grade is grounds for dismissal (see Probation and Dismissal from the Program).

At the end of each rotation, students must meet with their rotation advisors and discuss their rotation evaluation form. Students should expect a frank and open discussion of both strengths and any weaknesses perceived by their rotation advisors. Although it is sometimes difficult to discuss weaknesses, students should view such feedback as constructive and areas of opportunity to improve in future rotations.

8.8.2 Director Check-ins

After their first rotation, first-year PMB students meet individually with Dr. Fleming to review their overall progress and adjustment to graduate school. Dr. Fleming also discusses each student's first rotation experience and possible trajectory to ensure that they are on a path toward identifying a thesis advisor and lab. For the academic year 2024–2025, the individual meetings are likely to take place during winter intersession or early in the Spring semester.

Another check-in will occur after the first year is over, in late May or June.

8.9 Biochemistry, Cell and Molecular Biology Placement

Proficiency in biochemistry, cell, and molecular biology is evaluated formally with a first-year proficiency interview, normally scheduled in mid or late May. Students who have never taken courses in these areas are welcome, but not required, to take courses in these areas during their first year. Tutorials or self-directed study provide alternative avenues for preparing for the evaluation. The proficiency interview functions as a placement evaluation. If a student performs poorly in one or more areas, the examiners will recommend coursework to help the student gain a better understanding of those areas. Another purpose of the proficiency interview is to provide the students with an opportunity to experience an oral exam format that mimics the Graduate Board Oral (GBO) examination required by the University. In that sense, we refer to it as an exam, although no grade is associated with it, and failing has no consequence other than a course recommendation. Performing poorly on the proficiency interview does not jeopardize a student's standing in the program. The result of the Proficiency Exam will be communicated to the student via a formal letter from the Program Administrator.

8.10 Seminar Series

It is an essential part of the educational process for students to attend seminars, both in the area of biophysics and in other areas. Some of the regular biophysics seminar offerings are listed below. First-year students are expected to attend the Seminar Series on the campus where they rotate. Beyond the first year, students are expected to attend the series on the campus where they work. The third-year proposal is considered as a regular seminar and should be attended by all PMB students.

- The Thomas C. Jenkins Department of Biophysics seminar series is held on Mondays, noon–1 PM on the Homewood campus.
- The Department of Biophysics & Biophysical Chemistry seminar series is held on Tuesdays, 11:00 AM–noon on the East Baltimore campus.
- The biophysics departments sponsor "named lectures" (e.g., Carlson and Kossiakoff lectures). These special events take place on one or the other campus and host experts in the field. All PMB students are expected to attend these lectures.
- *Chalk it up to Biophysics* seminars are held twice each semester as part of the Jenkins Department of Biophysics seminar series and as part of the Department of Biophysics & Biophysical Chemistry Series, at times to be announced. They are presented by PMB faculty and emphasize the conceptual basis behind the work of an individual laboratory. Attendance is mandatory for first and second-year students. Students past their second year are expected to attend.
- *Student-invited seminars.* PMB students are offered the opportunity each year (usually in the Spring semester) to invite one speaker of their own choosing. Past speakers have included David Baker, Dorothy Kern, Erin O'Shea, Stephen White, Elizabeth Rhoades, Michael Levitt, Julie Forman-Kay, and William Bialek. Each year, two senior students are identified by the PMB director to organize the speaker selection. Those students will work with the seminar coordinator at the talk's campus to organize a day of meetings between the speaker, faculty members and students. The 2025 speaker and date will be announced as soon as available.

8.11 Writing Workshop

Writing is a critical part of the scientific enterprise. To develop formal writing skills, PMB students will participate in a workshop in the Spring of their second year that helps them develop their scientific writing skills. Students will meet with PMB faculty over approximately two months to develop a set of "Specific Aims," and a five-page research proposal that describes the goals, background, significance, and details of their thesis project. The workshop will cover best practices in topics ranging from: grammar and sentence construction; organization of paragraphs; the main sections in a research proposal and their functions; and the creation and placement of figures and tables. Students and faculty will meet in groups and in one-on-one sessions to get direct feedback on their written proposal from faculty, students, and from their faculty mentors while preparing their proposal

The proposal that students generate in the Writing Workshop will be used, with minor tweaking, as part of the Thesis Proposal Presentation and Review in the Fall of their third year. In addition, it is hoped that students will use this proposal as the starting point for submission of an NIH F31 predoctoral fellowship. These fellowships not only provide research support to the student's thesis lab, but they are also prestigious awards that bring significant advantage to the recipient student in applying for postdocs, postdoc research fellowships, and subsequent professional positions.

8.12 Savvy Seminars

An oral presentation is one of the main forms by which scientists communicate their findings. Whether in the context of the classroom, the relatively informal lab meeting, or as an invited speaker at an international colloquium, the ability to effectively present scientific results is an

important skill to master. To develop these presentation skills, students will participate in a class designed to cover the planning and execution steps necessary to produce an engaging oral presentation. Students will learn to articulate the fundamental biological questions, tell a story that stimulates interest in their chosen subject, and effectively convey their experimental findings. Key methodological steps in planning will guide students on how to create slides with compelling visuals, and how to use technology to their advantage. Students will each prepare, present, and receive feedback on a 15-minute talk on their thesis project in the style of the Biophysical Society short talks. In addition, each student will receive and evaluate a video of their presentation so they can see themselves through the perspective of others.

8.13 Student Evening Series

The student evening series (SES) offers speaking opportunities to all PMB students. It is designed to provide research feedback and build camaraderie within and across cohorts. These series occur approximately once per month, and the setting will depend on the location of the presenter's lab (Homewood or East Baltimore campus). The series is organized by two 4th year PMB students, who are selected by the attending students at the conclusion of the final meeting of the previous year. The main task for these organizers is to draw the schedule of speakers for the coming year (by August 1), consulting with the Academic Program Administrator to avoid potential conflicts with other program activities (e.g., recruiting, third-year practice talks, retreat organizers, organizers for the student invited speaker). The student organizers also work with the Academic Program Administrator to advertise the schedule and announce upcoming presentations to the entire PMB class. *Participation in the student evening series is a PMB requirement.*

8.14 Third-Year Seminar Practice Talk

Third-year students are strongly advised to present their thesis projects to other PMB students at least one week in advance of their formal presentation date (see below for details). These presentations are held in the evening and should be scheduled 1 to 2 weeks before the public seminar date so that there is enough time to incorporate suggestions. in the third-year seminar practices will take place in the fall of the third year.

8.15 Graduate Board Preliminary Oral Examination

8.15.1 Oral exam requirements

The Graduate Board of Johns Hopkins University requires all Ph.D. programs to administer an oral examination to their students. For PMB students, this examination is a preliminary one, to be taken in April/May of the second year.

The GBO examining committee consists of five primary members, with two alternates. The Graduate Board requires that two members of the examining committee be from outside the student's department or program. To comply with the spirit of the rule, PMB uses three of the examining faculty from outside the campus where the student is enrolled (outside examiners), and two faculty from within that campus (inside examiners). PMB composes examining committees for students performing thesis research on the Homewood campus and for students working on the East Baltimore campus. The committee members are selected by the program director in accordance with the Graduate Board rules.

It is PMB policy that the student's faculty advisor cannot be a member of the examining committee and cannot be present during the examination. The advisor will be asked to make a brief presentation about the student to the examining committee prior to the examination while the student is not in the room.

8.15.2 Scope of the exam

The preliminary oral examination is designed to test reasoning abilities and the breadth and depth of the student's knowledge. While the topics covered in the GBO can be quite broad, the PMB GBO focuses first and foremost on molecular biophysics. The materials that students have encountered in their first-year curriculum are central to the examination, specifically, the biomolecular structure, function, physical chemistry, and methods of inquiry related to these topics. Students can also expect some coverage of material from the proficiency evaluation. The exam does not focus extensively on the student's thesis research area. GBO committees may, however, ask for a brief description of the student's project to provide some background.

8.15.3 Setting up the oral exam

Students will be notified of when they are scheduled to appear by the Academic Program Administrator.

8.15.4 Outcome of the oral exam

The Graduate Board requires that the GBO examining committee report the results of the examination in written form. The reporting form allows for a "pass," "conditional pass," or "fail." An option to retake may also be offered. If the decision is a "conditional pass," the conditions (nature of the work, deadline, etc.) will be stipulated by the committee at the end of the examination. The student and advisor are responsible for ensuring that the conditions are met.

8.16 Thesis Proposal Seminar

At the end of the 5th semester (October–December), students will present their thesis project both orally and in written form. This review is composed of a public presentation outlining the thesis project, and a question–answer session with the Thesis Review Committee.

9 Thesis Requirements

9.1 Thesis Advisor

Students are expected to choose one thesis advisor from among the PMB faculty at the conclusion of their third rotation. This is a critical choice for both the student and advisor and should be made with care. If a mutually agreed upon match is not found between a student and advisor after the third rotation, the Director may authorize a (fourth) summer rotation. (see Program Requirements). Faculty are not required to accept all students interested in their laboratories. Students who are not able to find a thesis lab by the end of July will be dismissed from the program.

9.2 Annual Thesis Reviews

To ensure progress toward degree, every student undergoes regular thesis reviews. The first review is administered by the Thesis Review Committee (TRC). Subsequent reviews are

administered by the Thesis Advisory Committee (TAC). The minimum frequency of meetings is once a year in Year 3 (by the TRC) and Year 4 (by the TAC), and twice a year beyond Year 4 (by the TAC).

Per the Policy on Annual Academic and Professional Development Discussions for PhD Students and Their Faculty Advisors, it is a university requirement that every student enrolled in the program undergo a thesis review each year.

In general, the only circumstance in which a yearly or second yearly thesis committee meeting is not necessary is when (i) the student has completed all work to be included in the thesis and is actively writing the thesis, or (ii) the TAC has previously indicated that the student was likely to graduate within six months. In this case, the TAC and student will agree on an outline of the thesis and a time frame for completion.

Actual writing of the dissertation is monitored by the Thesis Advisor.

9.2.1 Third-Year Thesis Proposal Seminar and Review

In the Fall of their third year, PMB students will present a public seminar describing their thesis project. The presentation will be immediately followed by a closed-door discussion with a committee of program faculty. This Thesis Proposal Seminar and Review (TPSR) serves several purposes: 1) It helps students to think critically about their thesis project from background and premise, to the feasibility of experiments, and to the larger impacts that will result from their research; 2) It provides the students with experience in making an oral seminar-style presentation; and 3) It serves as a first post-GBO thesis review by a committee of PMB faculty. An important additional component of this seminar/evaluation is a written thesis proposal prepared by the student in the writing workshop in the Spring of the second year.

Students in Homewood campus labs will be evaluated at the Homewood campus, during a Friday noon seminar time slot, or an alternative day depending on the number of presentations. Students in East Baltimore campus labs will be evaluated at the East Baltimore campus, the time of which will be at the discretion of their department.

Core committee: PMB has two TPSR core committees, one on the Homewood campus and one on the East Baltimore campus. Each core committee is composed of two PMB faculty members from the hosting campus. The same TPSR core evaluates all students on a given campus in a given year. The core committee is selected by the PMB director, with each member serving for two years. Appointments to the core committee are staggered to ensure continuity. In the second year of service, the core member serves as the TPSRC chair.

Reviewing committee: The reviewing committee (the TPSRC) consists of the core committee (two PMB faculty, see above), the thesis advisor, one ad hoc **PMB** faculty, and one alternate ad hoc **PMB** faculty chosen by the student and thesis advisor (the ad hoc and alternate must not be core committee members). The committee composition must be approved by the program director. *All members of the TPSRC are charged with reading the proposal and providing substantial feedback to the student.* The thesis advisor is designated as the reader; as such, the advisor will be responsible for meeting with the student and going over the written document prior to delivery to the rest of the committee.

Scheduling: The PMB director will coordinate with the core group and thesis advisor to find a suitable presentation date. Once this date has been established, the student will ask the selected ad hoc committee member and alternate to serve on their committee. It is the student's responsibility to inform the Academic Program Administrator of the committee composition and to provide the seminar coordinator for either the Jenkins Department (Liz Wilson in 110 Jenkins Hall) or the Department of Biophysics & Biophysical Chemistry with a presentation title.

Format of the proposal and review documentation: The student must provide a five-page research proposal to the TPSRC at least one week prior to the review. The format is similar to that requested by the NIH for F31 submissions (see page 44). The student and their advisor should arrange a meeting to review the document before sending it to the committee. The student and advisor should also meet to discuss matters related to the Individual Development Plan (IDP) required by NIH, and fill out the Student-Thesis Advisor Report. The Student-Thesis Advisor Report should be sent to the committee with the research proposal. The student should also send a copy of the signed report form to the Academic Program Administrator.

Practice talk: Each student is required to schedule an evening practice talk with their PMB classmates no later than one week prior to their public presentation. Students should coordinate with the Academic Program Administrator to ensure there are no conflicts with other program activities and events. These practice talks are meant to provide feedback on narrative, slides, and speaking style, and are a program requirement for the presenter. *All PMB students are required to attend.*

Note that third-year proposals are presented during a narrow window of time for fairness to all presenters. It is therefore essential that practice talks be scheduled early so that they can be reasonably spaced.

Format of the review: Third-year thesis reviews are unique in that they begin with a public presentation (seminar format) describing the thesis project. The presentation is expected to last ~30 minutes. Following the presentation, the TPSRC meets with the student in private to discuss the thesis proposal and preliminary data. The TPSRC should also discuss the completed Student–Thesis Advisor Report with the student. The closed-door phase of the third-year thesis review should take ~30 minutes. Additional time should be reserved for the committee to meet with the advisor and student individually. Scheduling should therefore allow for ~1h 15 min.

Outcome: The committee chair will fill out a PMB Thesis Advisory Committee Meeting form. Comments should be made about the proposal, the seminar, and contain any recommendations and requirements for the student. The reader is tasked with critiquing the written proposal separately and providing edits to help the student improve their writing. The TPSRC can require that a student provide periodic written reports or have an additional thesis review during the year if it is felt that there are deficiencies in the project, the seminar, or the written proposal.

The review form must be circulated among committee members for editing and approval from the committee as a whole. The filled form is sent to the Academic Program Administrator as soon as possible after the meeting. The evaluation is then sent to the student for their signature.

9.2.2 Mid-stage Thesis Review

In Year 4 and beyond, students meet one-on-one with their Thesis Advisory Committees (TAC) to discuss their research progress and their future research and career plans. Mid-stage reviews happen once in year four (in October or November) and twice in years five and beyond (in October or November and April or May). The objective of the thesis review is to provide detailed discussion and offer specific guidance about the ultimate content of the thesis. The program director must approve the Thesis Advisory Committee (TAC) composition prior to the first meeting.

The TAC will consist of the student's advisor, the ad hoc member from the TPSRC (if appropriate), and two more PMB faculty. There is no restriction as to which campus TAC members are drawn from, but **the TAC must be composed of PMB training faculty**. Exceptions may be considered if additional expertise relevant to the thesis topic is absolutely required and is not represented by any of the training faculty. In any case, members of the committee must appear on the list of faculty approved to serve on GBO committees by the Homewood Graduate Board or the equivalent office at the School of Medicine. The TAC will meet with the student in the Fall of Year 4 and Year 5, and then every six months until the final thesis defense, at which time a fifth member, also from PMB faculty, will be added.

Prior to every review, the student should arrange a meeting with the thesis advisor to discuss matters related to the Individual Development Plan and fill out the Student-Thesis Advisor Report. At the close of each review, the TAC and student must initiate the scheduling process to ensure that the next meeting will occur within the prescribed time window.

The student must provide a one-page research progress summary *at least one week in advance of the meeting*. Prior to the meeting, the student must also send the filled Student-Thesis Advisor Report to the committee for discussion at the meeting. **The student should then send the signed form to the Academic Program Administrator and inform them of the date of your upcoming Thesis Review.**

Format: TAC meetings will consist of a closed-door presentation by the student. The student should include relevant background, results, challenges, and future plans to complete the thesis. Without interruption, the presentation should last approximately 30 min, and the student should plan accordingly. During the presentation, committee members are likely to interrupt and ask questions or offer suggestions. The meeting ends with a discussion of the student's long-term plans after leaving PMB and the steps the student has taken to achieve those goals. In total, the meeting should last no longer than 1.5 h.

Outcome: Within 2 weeks of the meeting, the Committee Chair, appointed by the program director, will complete a PMB Thesis Advisory Committee Meeting form summarizing the discussion and any specific recommendations. As for the third-year review, the review form must be circulated among committee members for editing and approved by the committee as a whole. **The Chair will sign the completed form, and send it to the Academic Program Administrator.** The Program Administrator will send it to the student's Advisor for signature, before sending it to the student for signature as well. This report will become part of the student's permanent record.

Scheduling: It is the responsibility of each student to schedule their TAC meeting within a given window of time, i.e., October–November in the Fall of year 4 and beyond, and April–May in the

Spring of year 5 and beyond. No review can be scheduled during June–August. The time and date for the next meeting should be set at the conclusion of each meeting or soon after. Once the meeting time and date are identified, students should communicate this information to the Academic Program Administrator, who will keep track of each student's committee meetings in the same way s/he keeps track of student GBOs.

Failure to schedule a timely review meeting will result in a grade of F for dissertation research and placement on academic probation.

At the TPSR and all subsequent reviews, the TPSRC and TAC panel will expect to hear from each student about career and training plans following completion of the dissertation, as well as long-term plans. If a student plans to do a postdoc, the student should discuss general research areas and any thoughts on specific labs that are of interest starting in Year 4 (the first TAC review). If a student is considering a non-postdoc path, the student should discuss interests and any initial investigations into the chosen area, including possible internships.

The purpose of the TAC meeting is to monitor progress and provide guidance. In most cases, the timing and frequency indicated above are adequate. However, every student has different circumstances, and a departure from or modification to the schedule may be helpful. Thus, if a student or committee member deems that a meeting is needed outside of the October–November or April–May windows, corresponding arrangements will be made. The student will proceed as for a regular meeting.

9.2.3 Individual Development Plan and Report

Discussion of an IDP is an integral part of each thesis review. The form used by PMB addresses both the progress of the student toward selecting a career path beyond graduation, and how the program can be improved to facilitate such progress. See also Career Counseling. Note the requirement of attending the NIH Career Symposium.

9.2.4 Thesis Defense Committee (TDC) and Final Oral Examination

The final oral examination committee, or Thesis Defense Committee (TDC), must consist of **five PMB faculty members** (plus one alternate). The TDC will be composed of the four members of the student's TAC plus one additional faculty member and one alternate of the student's choosing. **The TDC must be composed of PMB training faculty**. Exceptions will be considered if additional expertise is absolutely required. In any case, members of the committee must appear on the list of faculty approved to serve on GBO committees by the Homewood Graduate Board or the equivalent board at the School of Medicine. Any change to the committee composition (including exchange between regular and alternate status prior to the defense) must be approved by the program director.

Two of the five members of the TDC will serve in the official capacity of "readers" of the thesis. In all but the rarest of circumstances (which must be approved by the program director), the primary or "first" reader is the student's advisor. In consultation with the student's advisor, the student chooses one faculty member from the remaining four TDC members to serve as second reader and must obtain approval from that member. **The 2nd reader must be a PMB faculty approved by the PMB director**. As described below, the two readers vouch for the thesis in its entirety in a letter to the graduate board. As such, the two readers must read the thesis in its entirety. **This is**

particularly important for the advisor (first reader), who should read the thesis and provide necessary edits to make the thesis presentable **prior** to its circulation to the TDC.

To ensure balance, the committee composition must be approved by the program director. The program director will choose the committee chair. Once the committee is approved and the advisor agrees that the thesis is ready to be distributed, the student may schedule the exam. It is the student's responsibility to contact the faculty members on the exam committee and to schedule the date, time and place of the exam.

At least 2 weeks prior to the defense date, the student must send a calendar invite for the event, with their thesis attached, to all committee members, the alternate, and the Academic Program Administrator.

Failure to provide a copy of the thesis to the committee at least two weeks prior to the exam may result in a postponement of the defense. Unapproved changes to the committee composition and roles may also result in a postponement or nullification.

Students who have scheduled their defense must submit a request form in order receive their Readers Letter.

The final oral exam is a closed-door exam and serves three purposes:

- To evaluate the quality of the dissertation (if approved, the 1st and 2nd readers sign a letter of acceptance addressed to the Graduate Board);
- To determine that the student's knowledge in the immediate scientific area of their dissertation is sufficient; and
- To authorize the student to go forward with presenting the thesis seminar after submission of the corrected document to the library.

If the exam committee concludes that the student's knowledge is insufficient or the dissertation needs additional work, the student can be asked to return for a re-examination. The student's final exam committee has the authority to ask for substantial changes to the thesis and additional "bench" work.

The student should be prepared to make an approximately 45-minute-long presentation during the final oral exam to highlight the major findings of the dissertation. TDC members are expected to interrupt throughout the presentation to discuss various points. In general, this oral examination will last 2 hours.

It is the intention of the Steering Committee that the examining faculty conduct a rigorous assessment of the student's scientific knowledge and evaluate the dissertation research in a substantive and critical manner.

9.2.5 Thesis Approval

The final thesis must be approved, in a form specified by the Graduate Board, by the two thesis readers. If the final oral examination committee approves the student's dissertation, the two readers sign the letter accepting the thesis. *The readers reserve the right to delay signing the letter until all revisions are made to the document according to the committee's recommendations.* This may include additional experimental work, substantial rewriting, and inclusion of new chapters. The

signed letter is submitted to the Graduate Board, along with a confirmation that all other PMB requirements have been met. Guidelines for the format and submission of the thesis are available from the Academic Program Administrator. Thesis submission fees are covered by the two Biophysics Departments. You can request a Readers Letter here

9.2.6 Thesis Seminar

After the student has passed the final oral exam, the readers' letter accepting the thesis has been submitted to the Graduate Board, and the thesis has been submitted (and approved) by the library, the student is required to present a seminar on the work that led to the degree. *The public seminar cannot take place before all corrections have been made, and the library has approved the document.* The thesis seminar should be scheduled at a time when a majority of the faculty from the TDC can be present. It is preferable that the seminar be held in person on the campus where the student earned the degree. However, circumstances such as employment at the time of the presentation may make this difficult. A remote presentation is acceptable. The seminar will be announced by the department granting the degree.

9.2.7 Granting of Degree

The Chair of the Thomas C. Jenkins Department of Biophysics or Director of the Department of Biophysics & Biophysical Chemistry will consider that a student has fulfilled the requirements for the Ph.D. and sign the Certificate of Completion granting the degree only after the following conditions have been met:

- Passing the final oral examination. (Note: this examination is a program requirement, not a Graduate Board requirement. Each student satisfies the Graduate Board Oral requirement by passing the Graduate Board Oral exam taken at the end of the second year.)
- Submission to the Graduate Board of an approval letter signed by two readers accepting the thesis as partial fulfillment of the requirements for the Ph.D.
- Submitting a final, corrected and revised thesis that has been approved by the two thesis readers to the library. In some cases, approval by the entire thesis committee may also be requested. In timing the submission of the student's thesis to the library, the student should be aware of graduate board deadlines for awarding of degrees. Delaying submission by one day can delay degree conferral by as long as four months.
- Presentation of the student's thesis seminar.

It is university policy that all program and university requirements for the Ph.D. must be completed in 9 years or fewer from start of the doctoral program.

10 Participation in Scientific Meetings

10.1 Annual Retreat

The annual retreat is sponsored by the Institute for Biophysical Research (IBR, the broader community of biophysics researchers at the university) and brings together IBR laboratories from departments throughout the Schools of Arts & Sciences, Engineering, Medicine, and Public Health. Both platform presentations and a poster session are scheduled, and students and postdoctoral fellows are strongly encouraged to participate. All PMB students are expected to attend the IBR retreat every year. Advanced PMB students will have an opportunity to give short "lightning" talks.

PMB students at the start of their fifth year will typically give full platform talks on their thesis research. In addition to providing an opportunity for PMB students to present their research and practice public speaking, the retreat gives faculty and students within the Institute the opportunity to hear about current research in other laboratories.

10.2 While on the Training Grant

The training grant can provide limited funds to allow students to attend meetings. Such travel is not an automatic entitlement but has to be justified (to present a poster, for example). Students must apply to the director for permission. To minimize costs, we encourage students to attend meetings in Baltimore or DC. Typically, students will be able to attend one meeting during their two years on the training grant. Students no longer supported by the training grant are **not** eligible for training grant travel support. Funds are allocated on a yearly basis and cannot be rolled over.

10.3 Beyond the Training Grant

Presenting results at conferences and attending professional workshops are important components of doctoral training. Every research laboratory has its own participation policy. Students should consult their thesis advisor for information.

11 Applying for a Doctoral Fellowship

All PMB students are encouraged to apply for doctoral fellowships and should take steps early on to craft a competitive submission. This typically requires several weeks of intense planning, thinking, and writing.

The second-year writing workshop helps students prepare for their third-year proposal presentation and for submission of a fellowship application. Aside from the research portion covered in the workshop, fellowship applications have multiple components that vary according to the agency and must follow specific guidelines.

Students should read the submission guidelines early and fully prior to working on their application. They should make a list of what is needed and draw a schedule for each part. For the research portion, the successful applicants interact with their research advisor early and frequently. In addition, it is essential to provide ample time (at least two weeks) for the advisor, references, and director so that they can contribute the relevant supporting pieces as it may not be possible for them to satisfy last-minute requests.

The process of writing a strong application is time consuming for the student, the research advisor, the references, and often the director as well. It is also time consuming for Hopkins administrators. Students should warn Sr. Contracts and Grants Analyst Nancy Foltz (nfoltz@jhu.edu) on the Homewood campus or the Research Management Services (Su Heisler, sheisle1@jhu.edu, and Tonia Shealer, tsheale1@jhmi.edu) on the East Baltimore campus of their intention to submit an application *at least one month ahead of the agency deadline*. The completed application must be provided to their office *at least one week ahead of the agency deadline*. The role of the administrators is to process the application through university channels. Students are responsible for providing administrators with final versions of carefully proofread and edited documents.

12 Internships and beyond

12.1 Internships

Although there is no PMB requirement for an internship, students who plan to pursue a career path outside of academic research and teaching are encouraged to do an internship in a field related to their training. These opportunities include internships in Science Policy (both with the federal government and private organizations), Biotechnology and Pharma (with private companies), and Science Writing.

Students should not consider internships until they have made significant progress with their thesis research and are getting high-quality, publishable results. Ideally, by the time a student goes for an internship, they will have one or more published manuscripts. An internship is not recommended during those times when students are struggling to get their thesis project on track. In those cases, students should first focus on their research. Choosing the appropriate time to do an internship should be made in consultation with the thesis advisor and members of the student's TAC.

All internships must be approved both by the student's thesis advisor and by the program director. The main goal of an internship is to allow a student to determine whether a particular career path is right for them, and to make some connections within that path. This can effectively be achieved in three months or less. As a result, it is highly unlikely that an internship longer than three months will be approved by the program director. It is important that students understand that they will *not* be paid a stipend by their thesis advisor or by the program while they are on internship. Instead, interns are typically provided a stipend by the organization hosting the internship. However, a student's university health insurance coverage will remain active through the three-month internship period.

Interested students should follow guidelines and process the relevant memorandum of understanding early. Last minute requests may not be honored.

12.2 Career Counseling

PMB uses several mechanisms to prepare its trainees for post-graduation employment. These include ID self-reflection, discussions with advisor and thesis committee, career panels, career symposium, availability of various offices, and university-wide events.

NIH Career Symposium: Fourth-year students are required to attend the annual NIH Career Symposium normally held in May. The requirement is repeated in year six. Third and fifth-year students are welcome to attend as well.

Professional Development Career Office (PDCO): This office is located at the School of Medicine (https://pdco.med.jhmi.edu/). Students are encouraged to check the PDCO website regularly or to follow the PDCO twitter feed (@jhuphdcareers).

Phutures: This career development program was recently launched on the Homewood campus. The Phutures program provides support and activities that are complementary to PDCO. As with the PDCO, the Phutures program is available to all PMB students; students should sign up for announcements to learn about events and activities. See the Phutures website for more information.

PMB Career Workshops: PMB makes an effort to host all-day events at which an expert (most often a PMB alum) from a particular career path is brought to Hopkins to discuss their career path and best ways to prepare for a position for a career in their area, and best practices for identifying, applying for, and getting a job in their area. This event generally includes a presentation by the speaker, group discussions, and opportunities for one-on-one meetings. First and second year students are welcome to these events but are not required to participate.

12.3 Probation and Dismissal from the Program

The Program Director, Co-Director, and PMB faculty will make every effort to support students to be successful in the program. If a student is struggling, they will be given the tools, guidance, and opportunity to improve. However, if a student continues to not meet expectations of the program, the Director and the student's Thesis Advisory Committee may place the student on probation, and may subsequently dismiss a student from the program in accordance with the Graduate Student Probation, Funding Withdrawal, and Dismissal Policy.

Per this policy, failure to meet performance requirements in the following areas may result in probation: 1) Coursework, 2) Research 3) Teaching Assistantship 4) any combination of the aforementioned areas.

In addition, per the PhD Advisor/Good Standing Policy, a student who is unable to secure a research/dissertation advisor within 4 months of either the Deadline to Join Thesis Laboratory or parting ways with a previous advisor may be placed on probation or terminated from the PhD program due to a lack of faculty-advised progress.

12.4 Grievance, Conflict Resolution, and Ombud

For conflict resolution, the ombud is Annalisa Peterson (https://www.jhu.edu/ombuds-office/).

Grievance and conflict resolution resource (Office of the Provost):

https://provost.jhu.edu/education/academic-grievance-policy-students-and-postdoctoral-fellows/

Grievance and conflict resolution resource (School of Medicine):

Conflict Resolution Procedures in the Context of the Relationship Between Faculty Mentors/Advisors and Graduate Students

13 General Resources for Graduate Students

13.1 Mentorship Commitments

Johns Hopkins University is committed to a culture of quality mentoring for all students. The Policy on Mentoring Commitments for PhD Students and Faculty Advisors provides mechanisms to support a climate of excellence in mentoring for PhD students; and the JHU Mentorship Commitments of Faculty Advisors and PhD Students outline mentoring expectations for advisors and their students.

13.2 KSAS Graduate & Postdoctoral Affairs Offices

The KSAS The Graduate & Postdoctoral Affairs Offices addresses the needs and concerns of KSAS graduate students and helps develop policy with the KSAS Dean's Office. Renee Eastwood is the KSAS Assistant Dean for Graduate and Postdoctoral Academic and Student Affairs, rseitz5@jhu.edu.

13.3 Office of Graduate Biomedical Education

https://www.hopkinsmedicine.org/som/education-programs/graduate-programs/about

13.4 Graduate Representative Organization

The Graduate Representative Organization (GRO) is an organization that represents the Homewood graduate students. The GRO coordinates graduate student orientation, advocates for student concerns, organizes social events and sports tournaments, etc. Email: GRO@jhu.edu

13.5 Graduate Student Association

The JHSOM Graduate Student Association is the major graduate student organization of The Johns Hopkins University School of Medicine. For information on who the 2024-2025 GSA representatives for the PMB Program are, contact Mikalah Mack.

13.6 Student Health & Wellness Center

Graduate school can be stressful. Research is challenging, and most experiments do not work. Students often feel pressure from family, from their advisor or committee, from fellow students, or from competition with another research group. In addition, planning life after PMB can be stressful. Should I postdoc? Where should I postdoc? Will I get a position in industry? In science policy? These and other uncertainties are hard to manage, and can lead to anxiety, fatigue, anger, and detachment. In short, like many of life's challenges, graduate school can lead to depression. There are a lot of techniques and activities that can help counteract these feelings. These include exercise, hobbies, meditation, journaling, and socializing with friends. We encourage all students to develop and maintain habits that will work for them.

However, for some students, even the best habits may not be enough to maintain mental wellness. In such cases, students may experience a variety of signs of depression, including continued stress and anxiety, sadness or anger, difficulty sleeping, difficulty focusing on lab work and/or classwork, and detachment from their social network. If students find themselves suffering from one or more of these symptoms, they should take them seriously and get help. Students should understand three things about depression: 1) it is far from abnormal, 2) it is treatable, and 3) Johns Hopkins has excellent resources for dealing with depression and promoting mental health. Students who are struggling with these issues are encouraged to speak with their advisors. If students are uncomfortable speaking with their advisors for professional (or any other) reasons, they should speak with people in the PMB program, in particular, Program Director Dr. Karen Fleming. These conversations will be used to match students with mental health experts and work towards a solution that allows the student to engage in long-term laboratory research at the highest level for the duration of graduate school. In addition to taking action within PMB, students are referred to the Health and Wellness Center and to Counseling centers described below. Conversations will be

confidential to the extent allowed by Hopkins policies. Students should be aware that all Responsible Employees who receive reports or otherwise become aware of discrimination, harassment and/or retaliation are required to promptly report such misconduct to OIE. Go here for additional information.

The Student Health and Wellness Center provides confidential health care to the Homewood campus community. The clinic is located at 1 East 31st Street, Suite N200. The health care staff consists of board certified/eligible physicians, nationally certified nurse practitioners, a licensed nurse, medical assistants/technologists, and a nurse mid-wife. The center is open Monday through Friday from 8:30 AM to 5:00 PM. During the academic year, it is also open on Saturdays from 9:00 AM to noon.

The health and wellness of students are of utmost importance to us here at Johns Hopkins. If you are struggling with anxiety, stress, depression, or other wellbeing-related concerns, please consider contacting the Johns Hopkins Student Assistance Program (JHSAP). If you are concerned about a friend, please encourage that person to seek out counseling. JHSAP can be reached at (443)-287-7000 or Toll Free: (866)-764-2317 (confidential, available 24 hours, 7 days per week)

If you have a disability or any health issue and may require accommodations in this course, please contact the Disabilities Services Coordinator for graduate students in the School of Medicine (Ellen Kaplan, som-sds@jhmi.edu) to discuss your specific needs.

13.7 Mental Health Services

Mental Health Services at Homewood offers individual and group counseling, consultation and referral services, and help with career decision-making. Services are confidential and free of charge. Mental Health Services is located at 3003 N. Charles Street, Suite S200 and open Monday through Friday from 8:30 AM to 5:00 PM.

Homewood Students:
Schedule an appointment by calling: 410-516-8278

Med School Students:
Schedule an appointment by calling: 410-955-1892

13.8 Crisis Information

MEDICAL EMERGENCIES

- Call 911 or go to your closest emergency room.

MENTAL HEALTH EMERGENCIES

- Call 988 or go to your closest emergency room.
- For the National Suicide Prevention Lifeline, call 800-273-8255.
- To reach the Crisis Text Line, text "HOME" to 741741 for help.
- To reach the Johns Hopkins University Behavioral Health Crisis Support Team (BHCST), call 410-516-9355. This team is available 24 hours a day, year round.
- To reach Johns Hopkins Public Safety for all campuses, call 667-208-1200.

13.9 Office of Institutional Equity

This Office of Institutional Equity oversees concerns relating to sexual harassment, discrimination/compliance, and disability services. Located in the Wyman Park Building, Suite 515.

General Inquiry E-mail: oie@jhu.edu

Disability Services and Accommodations E-mail: oiedisability@jhu.edu

13.10 Sexual Assault Response & Prevention

Johns Hopkins University is committed to promoting a safe and supportive environment for each and every member of our community. The OIE Sexual Misconduct page provides clear and consolidated information on sexual assault policies, and available services and support in the event of an incident of sexual assault. See the following resources:

- Get Confidential Help
- Sexual Misconduct Policy and Procedures ("SMPP")
- Sexual Misconduct FAQs
- Retaliation

To file a sexual misconduct report, contact the Office of Institutional Equity at 410-516-8075, email oie@jhu.edu, or submit an online report to OIE.

13.11 JHU Life Design Lab: Career Services

The JHU Life Design Lab serves all full-time students (freshmen through PhD candidates) on the Homewood Campus. The Assistant Director of Life Design for Graduate Programming is:

Heather Braun: hbraun4@jhu.edu

13.12 JHMI Professional Development Career Office (PDCO)

The PDCO, located on the East Baltimore campus, works with graduate students, as well as postdoctoral fellows, and early-career faculty to help them explore and prepare for a variety of career paths, and is available to students on the Homewood and the East Baltimore campuses. For

more information, see https://pdco.med.jhmi.edu/; 1830 E. Monument St., Suite 2-107, 410-502-2804, jhmipdo@jhmi.edu.

13.13 KSAS Phutures Program

The Phutures Program, located on the Homewood campus, serves similar roles as the PDCO, and is also available to all PMB students. the Phutures website for more information.

13.14 Policies Regarding Leave of Absence and Standing in the Program

13.14.1 Leave of Absence (Homewood Campus Policy)

Graduate students may apply for a leave of absence when medical conditions, compulsory military service, or personal or family hardship prevent them from continuing their graduate studies. Financial difficulty alone does not warrant a leave. The leave of absence may extend for up to four semesters (not including the Summer term).

To apply for a leave of absence, students must inform the Program Director and Program Administrator of their specific situation in writing, and fill out a Leave of Absence (LOA) form found here on the Homewood Grad Affairs website.

Students must provide the proper documentation for their given situation:

- **Medical Condition:** a letter from a physician (this may be a letter from a doctor at the Student Health and Wellness Center), the Counseling Center, or the Office of Student Disability Services
- **Military Duty:** a letter or verification from the Armed Forces
- **Personal or Family Hardship:** a letter from the applicant explaining the hardship

A leave of absence will be granted for a specific period of time, not to exceed a total of two years. When approved for a leave of absence, the Chair of the Homewood Graduate Board will notify the student. During the leave period, a student may not be enrolled at another university. Before applying for leave, students should consult their department for information regarding funding for when they return from their LOA. Prior to requesting the LOA, it is also highly recommended that the student contact the Health Insurance Coordinator in the Registrar's Office for information on how the LOA will affect their health insurance coverage. When on an approved LOA, there is no tuition charge; the period of leave is simply regarded as an interruption of the degree program.

The regular stipend will be suspended while the student is on leave.

In addition, a student on leave is not to make use of any University services or facilities (e.g., counseling center, health center, library, athletic facilities, etc.). A student on a leave of absence who wishes to continue working at the University is not eligible to be paid through the Student Payroll Office. Therefore, he or she must be hired through the Human Resources division of the department employing them. No exceptions can be made.

The Program Director may decline to approve a student's request for a leave of absence, in which case the student may appeal directly to the Graduate Board or the Dean of Graduate Education.

13.14.2 Returning from Leave of Absence (Homewood Campus Policy)

Return from a leave of absence can only occur at the start of an academic period. For example, if a student takes a leave of absence just a few weeks into the Fall semester, they cannot be reinstated again until the start of the Spring term. When returning from leave of absence, a graduate student must complete and submit the Application to Return from Leave of Absence before registering for classes. The form must be accompanied by a letter (from one of the sources below) for their given situation that explains what progress has taken place in the student's absence that would enable him/her to be successful upon return.

- **Medical Condition:** a letter from a physician (including the Student Health and Wellness Center), the Counseling Center, or Office of Student Disability Services
- **Military Duty:** a letter or verification from the Armed Forces
- **Personal or Family Hardship:** a personal letter

Any additional letters of support (e.g. from an advisor, department chair, etc.) are welcome. When approved for returning from a leave of absence, the Chair of the Homewood Graduate Board will notify the student.

13.14.3 Leave of Absence (East Baltimore Campus Policy)

The stipulations for leave of absence on the East Baltimore campus are similar to those on the Homewood campus and are currently under revision. Contact the Program Director or the Biophysics and Biophysical Chemistry staff for additional information if needed.

14 Code of Conduct

14.1 Academic Integrity and Student Conduct

Students are expected to know and abide by university policies governing student conduct and academic integrity. Sanctions for misconduct may range from a warning to expulsion.

- **Academic Integrity:** In all aspects of their work, students assume an obligation to conduct themselves in a manner appropriate to the Johns Hopkins University's mission as an institution of higher education. A student must refrain from acts they know, or under the circumstances has reason to know, may impair the academic integrity of the University. Violations of academic integrity include, but are not limited to: cheating, plagiarism; submitting as one's own the same or substantially similar work of another; knowingly submitting false information to any university personnel for inclusion in the academic records; dishonesty in discharging teaching assistant duties; falsification; forgery. Violations of academic integrity are taken seriously and may be grounds for dismissal from the program.

You can find the KSAS and WSE Graduate Academic Misconduct Policy here.
Additionally, you can find the University Research Integrity Policy.

- **Student Conduct:** The University expects all students to respect the rights of others, and to refrain from behavior that impairs the University's mission of teaching, research/scholarship, and outreach to the local, national, and international community. Violations of appropriate student conduct may include, but are not limited to: harassment behavior (physical or verbal); intimidation or verbal abuse; actions that are a danger to one's own personal safety or that may harm others, and actions that destroy, impair, or wrongfully appropriate property. Inappropriate behavior will not be tolerated and may result in dismissal from the program.

The procedures for handling various allegations of misconduct, academic or otherwise, by full-time and part-time JHU Homewood Graduate Students can be found here: Graduate Student Policies.

14.2 PMB Code of Conduct

PMB follows Johns Hopkins code of conduct and that of the Biophysical Society (BPS, https://www.biophysics.org/code-of-conduct). To paraphrase the latter, PMB is committed to providing an environment that encourages the free expression and exchange of scientific ideas. It is committed to the philosophy of equal opportunity and respectful treatment for all, regardless of national or ethnic origin, religion or religious belief, gender, gender identity or expression, race, color, age, marital status, sexual orientation, disabilities, veteran status, or any other reason not related to scientific merit.

All PMB activities intend to promote an environment that is free of inappropriate behavior and harassment by or toward all students, staff, faculty, and all university personnel. PMB expects anyone associated with the program to respect its rules and policies.

14.3 JHU/PMB and Anti-Discrimination

PMB is against all forms of discrimination. As presented by the Office of Institutional Equity: "The Johns Hopkins University is committed to equal opportunity for its faculty, staff, and students. To that end, the university does not discriminate on the basis of sex, gender, marital status, pregnancy,

race, color, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, veteran status or other legally protected characteristic. The university is committed to providing qualified individuals access to all academic and employment programs, benefits and activities on the basis of demonstrated ability, performance and merit without regard to personal factors that are irrelevant to the program involved."

14.4 PMB and Race Equity

PMB strives to achieve race equity in all its activities and foster an anti-racist culture (see the PMB website). The Biophysics Race and Equity Group (Biophysics REG) was founded in the wake of the events of May 2020.

- The mission of the Biophysics REG is to foster a welcoming and inclusive climate that celebrates the contribution of each of its members, regardless of race.
- The Biophysics REG partners with the PMB steering committee to develop and implement anti-racist and anti-discriminatory policies.
- The Biophysics REG is invited to share its findings and recommendations with the Steering Committee during its biannual meetings.
- The Biophysics REG organizes regular events open to PMB students, faculty, and staff, and to all members of the Hopkins Biophysics community. These events may include workshops, presentations from outside speakers, and discussions of books, films, and scholarly publications related to racism and inequity at large and in the STEM fields.
- The Biophysics REG is initiating an annual climate survey to assess the well-being of students.
- The Biophysics REG is open to all interested parties and welcomes new members at any time. Send an email to pmb@jhu.edu to indicate your interest.

14.5 University Computer Policy

The University's policy for student use of shared information technology resources is available online. This policy has been officially adopted by Johns Hopkins University. Similar criteria apply to **all** students affiliated with Hopkins biophysics graduate programs. Consult the following website for additional detail, go to https://policies.jhu.edu/ and download the TECH001 document.

15 PhD Student Employee Union & Collective Bargaining Agreement

15.1 PhD Student Employee Union

Information about the TRU-JHU PhD Student Union and the Collective Bargaining Agreement (CBA) can be found on this website: https://provost.jhu.edu/education/graduate-and-professional-education/phd-union/.

- PhD students in the Jenkins Biophysics PhD Program who receive work appointments and/or health insurance premium subsidy through Johns Hopkins University are under the Collective Bargaining Agreement dated March 29, 2024-June 30, 2027.
- This agreement has established wages, work hours, benefits, and conditions of appointment, many of these are described below.
- Eligible PhD students will be contacted by the Union and may elect to join the union and pay dues or pay agency fees. All eligible PhD students are under the CBA, regardless of Union membership.
- This agreement only covers work, which is limited to 20 hours per week on average for base funding. A PhD Student Employee may voluntarily elect to participate in supplemental-funded activities beyond the 20 hours per week on average.
- Academic policies are defined elsewhere in the handbook/catalogue/program materials.

15.2 CBA Summary

15.3 Leave, Vacation and Holidays

The time between semesters, academic quarters and spring and fall breaks are considered an active part of the training period. PMB follows the leave policy as outlined in the JHU-TRU-UE contract. Note that prior written approval is required for vacation days.

15.3.1 Sick Leave

PMB follows the leave policy as outlined in the JHU-TRU-UE contract.

15.3.2 Parental Leave

PMB follows the leave policy as outlined in the JHU-TRU-UE contract.

This is just a summary, not the actual terms of the CBA. To review the actual terms of the CBA please click on the link). Not all elements of the agreement are summarized below; please reach out to the Graduate Administrator or the Program Director with questions.

15.3.3 Compensation

- Academic year (AY) 24-25: $47,000 effective July 1, 2024
- The hourly appointment rate will be $25.41/hour, at minimum for teaching/research supplemental appointments.
- Minimum 5 years of guaranteed funding for all PhD student employees in the Whiting School of Engineering, the Krieger School of Arts and Sciences, and the School of Medicine.
- PhD student employees with external awards paid through the University will have their compensation increased to the minimum rate during a period of guaranteed funding.

15.3.4 Benefits

- Enrollment information will be available through HR Benefits for Students and Learners and communications will be sent in advance of benefits election periods.
- Paid by the University
    - The University will pay the premiums for University Student Health Benefits Plan (SHBP), including dental and vision coverage, employee coverage for employees in full-time resident status during the terms of full appointments.
    - PhD student employees will receive subsidies of $4,500 per child per year for eligible children under 6 years and $3,000 per child aged 6-18 years or adult dependent, with a maximum of $12,000 per family per year, in installments throughout the year.
- Reimbursed by University/Departments
    - The University will pay the cost of the health insurance premiums for eligible dependent children and spouses unable to work in the US, including dental and vision. Reimbursement procedures will be available on the HR Benefits website.
    - International students will be eligible to apply to a yearly fund to cover required visa fees.
    - Students will be eligible for reimbursement for MTA All Access College Transit Passes or DC U-Passes. Registration and enrollment information will be available on the HR Benefits website.

15.3.5 Time Off/Vacation/Leaves

- Time between semesters or quarters, spring break and intersession are *not* considered time off for PhD students unless they are explicitly taken as vacation days.
- All University holidays are recognized.
- PhD student employees have at 15 vacation days per year. Additional time can be given by a supervisor.
- PhD student employees receive 15 sick days per year with an additional 5 days per dependent. Student employees should report their absence as soon as possible to their work supervisor.
- PhD student employees receive 5 days of bereavement leave for the passing of immediate and extended family members and close friends, with 1 additional day for those needing international travel.
- International PhD student employees who are required to travel out of the country in order to maintain their immigration status necessary to be able to continue their program at the University are eligible for up to fourteen (14) days off with pay during the period of such travel.
- Parents are eligible for 8 weeks of paid leave following birth or adoption, with an additional 4 weeks for parents who have just given birth. New Child Accommodation applies to the academic, not work, PhD student experience.
- Employees will make a written request for vacation days in advance to the designated supervisor and receive written approval, which will not be unreasonably withheld.
- Employees with instructional responsibilities should not use vacation days in a way that would result in the diminution of those duties.
- Leaves of absence, including family leave, medical leave, and personal leave, are governed by JHU-TRU contract.

15.3.6 Work Hours

- It is expected that academic learning and research obligations should be met primarily in person during regular work hours (typically 8:30 AM to 5:00 PM, weekdays). These may vary by the research area. As research is considered an academic pursuit of knowledge, the effort in this area is not limited by the JHU-TRU-UE contract. The PMB program expects excellence in research output, and this is not generally possible with less than 50 hours per week of research effort.
- Work is distinct from academic research. No PhD student employee shall be required to perform work for more than 20 hours/week on average.
- Teaching appointments are included in the 20 hours of work that may be assigned. Academic coursework, exams, and academic research are in addition to this assigned 20 hours of work.
- There are no restrictions on work external to Hopkins except when decreed by funding source or visa status. If a student is supported on an NIH grant, the NIH limits external work to 8 hours per week.
- All work appointments (baseline funding or supplemental funding) require an appointment letter. Appointment letters will define the expectations and requirements of the teaching, research, or other University activity appointment. Students should contact their department administrator with any questions.

15.3.7 Union Representation

- All directory information will be sent to the Union unless restricted. Supplemental information will require a FERPA consent form available on SIS self-service.
- Union Representatives are current PhD Student Employees who are elected/selected to help their fellow PhD Student Employees navigate work-related disciplines, grievances, and other procedural/policy issues. Contact TRU-JHU with questions about specific Union Representatives.
- TRU-JHU Contact Information
    - Website: https://trujhu.org/
    - Phone: 443-281-9462
    - Address: TRU-UE Local 197, PO Box 41149, Baltimore, MD 21203
    - Email: trujhu@gmail.com

15.4 PMB Faculty Composition

Name	Department	School
Arroyo-Curras, Netz	Pharmacology & Molecular Science	SOM
Bailey, Scott	Biochemistry & Molecular Biology	BSPH
Barrick, Doug	Biophysics	KSAS
Berger, James	Biophysics & Biophysical Chemistry	SOM
Bowman, Greg	Biophysics	KSAS
Camley, Brian	Physics	KSAS
Fleming, Karen	Biophysics	KSAS
Fried, Stephen	Chemistry	KSAS
Frueh, Dominique	Biophysics & Biophysical Chemistry	SOM
Gray, Jeffrey	Chemical & Biomolecular Engineering	WSE
Green, Rachel	Molecular Biology & Genetics	SOM
He, Yuan	Biophysics	KSAS
Hilser, Vincent	Biology	KSAS
Hristova, Kalina	Materials Science & Engineering	WSE
Huang, William	Biophysics	KSAS
Johnson, Margaret	Biophysics	KSAS
Kavran, Jennifer	Biochemistry & Molecular Biology	BSPH
Lau, Albert	Biophysics & Biophysical Chemistry	SOM
Liu, Chang	Biophysics & Biophysical Chemistry	SOM
Liu, Jian	Cell Biology	SOM
Prigge, Sean	Molecular Microbiology & Immunology	BSPH
Rokita, Steven	Chemistry	KSAS
Sohn, Jungsan (J.)	Biophysics & Biophysical Chemistry	SOM
Spangler, Jamie	Chemical and Biomolecular Engineering	WSE, SOM
Townsend, Craig	Chemistry	KSAS
Twomey, Edward	Biophysics & Biophysical Chemistry	SOM
Wolberger, Cynthia	Biophysics & Biophysical Chemistry	SOM
Woodson, Sarah	Biophysics	KSAS
Wu, Bin	Biophysics & Biophysical Chemistry	SOM
Xiao, Jie	Biophysics & Biophysical Chemistry	SOM
Zhang, Yaojun	Physics	KSAS

Check the PMB website for faculty member contact information and research interest descriptions.

16 PMB FAQ: 2024 First year information

Q: *What is a J-Card?*
A: The J-Card is your university ID. It gives access to some buildings and is linked to J-Cash, a prepaid spending account and is required to park in campus lots. For more information including how to download the J-card app, go to https://studentaffairs.jhu.edu/jcard/

Q: *What pandemic precautions are in place at JHU?*
A: Information is available at https://covidinfo.jhu.edu/ and https://covidinfo.jhu.edu/information-for-graduate-students/ Check these sites frequently for the latest developments and advice.

Q: *Where is the PMB office located?*
A: The PMB office is located on the Homewood campus in Jenkins 201. The Biophysics Department office is located in Jenkins 110. The Biophysics and Biophysical Chemistry Department office is located in 608D Wood Basic Science Building, School of Medicine. Contact information is on page 9 and following.

Q: *Where is my mailbox?*
A: Your mail will be delivered to the Biophysics Department Office. You will be notified when mail has arrived for you.

Q: *Will I be given access to Jenkins Hall?*
A: Yes. During the Fall 2022 semester, you can access Jenkins Hall using your J-card.

Q: *Will I have access to my rotation laboratory?*
A: Yes. For each lab rotation, you will be given access according to the department's procedure. Ask your PI.

Q: *How do I register?*
A: Graduate students register online. Be mindful of the deadlines. Late fees are exacted by the Registrar and are the financial responsibility of the student.

Q: *How do I register for an interdivisional class?*
A: To register for courses at other divisions of the university than their own, students must complete an Interdivisional Registration (IDR) request form and obtain appropriate approvals. Once completed, the form must be returned to the student's home division's Registrar's Office. Forms can be accessed at https://studentaffairs.jhu.edu/registrar/wp-content/uploads/sites/23/2020/04/IDR-Arts-Sciences_Fillable.pdf.

Q: *What is my schedule for the first year?*
A: Your schedule is outlined in this handbook. Details are available on SIS and events are listed on the shared BPH 1st Year Calendar via Outlook. The Academic Program Administrator will share a link to it with you upon request.

Q: *I have plans for the summer. Can I skip the first year RCR requirement?*
A: No.

Q: *How do I sign up for health insurance?*

A: All students are enrolled in health insurance each year automatically. Any dependents must be enrolled each year. If you do not need health insurance, you should waive the policy. If you do not waive the policy for each year, your student account will be charged the fee. For more information including how to print the insurance ID card, see:
https://studentaffairs.jhu.edu/registrar/students/student-health-benefits/

Q: *How do I get paid?*
A: Contact Administrative Manager, Jessica Appel (jappel@jhu.edu), to be entered into the payroll system. Once your hire has gone through the payroll system, you will be assigned a personnel number (PERNR). This along with your JHED ID (assigned at matriculation) will allow you to access many things.

Q: *When do I receive my firstpaycheck?*
A: Your first stipend payment will be on 9/15/2025. Paychecks are issued semi-monthly on the 15th and last day of the month. If either day falls on a Saturday, Sunday or Holiday, you will be paid the day before. All students should sign up for direct deposit. If you opt to receive a paper check, it will be mailed to your address on file. Please double check the accuracy of this address and notify the administrative office if you change your address.

Q: *Is my stipend taxable income?*
A: Yes. Stipends are taxable income, but there is no withholding for the first two years of study while receiving NIH T32 fellowship income. This means that you should quarterly taxes. If you need more information, please visit the Tax Office website at
http://finance.jhu.edu/depts/tax/fellgrad_adm.html.

Q: *How do I set up direct deposit?*
A: We highly recommend setting up direct deposit. You can do so via http://ess.johnshopkins.edu/. Employee Self Service (ESS) is a convenient, secure, user-friendly enhancement to the central HR/Payroll system that will allow you to view your personal and payroll data and easily make changes. You can also access ESS via your myJH.edu page. Once you have logged into your myJH page, select HR and then ESS. You will be asked to login again, then a verification code will be sent.

Using Employee Self Service, you will easily be able to:

- Update your permanent address
- Update your emergency contact information
- View your personal data and work addresses
- Update your direct deposit information
- Make changes to your tax withholding information
- View your pay statements

You will be able to perform these tasks quickly, without complicated forms or additional assistance.

Q: *What is xTrain?*
A: PMB students are supported by an NIH training grant during the first two years. xTrain is the NIH eRA Commons module that manages appointments. If you receive an email requesting that you set up an eRA Commons account, please follow the directions given in the email. All students supported by the training grant will be appointed and have an electronic appointment form to complete. Note that you will need an ORCID number/account (see https://orcid.org/). Registering takes a few minutes.
At the end of the first year, and if you are in good standing, your appointment will be renewed. At the end of the second year, you will be prompted by an email to sign your termination form. Actual

dates will vary according to the availability of funds. *It is important that you act on xTrain requests from PMB staff without delay.* Every year, a small number of students encounter difficulties with xTrain that are inherent to the system. Relay error messages to Jess so she can help with resolution.

17 Format Guidelines for Third Year Proposal

The proposal should not exceed five pages, including figures and tables and excluding references. The recommendations below are adapted from the NIH application guidelines.

Paper Size and Margins

- Use paper size no larger than *standard letter paper size (8 ½" × 11")*.
- Provide at least one-half inch margins (½") - top, bottom, left, and right - for all pages.

Font (size, color, type density) and Line Spacing

Adherence to font size, type density, line spacing, and text color requirements is necessary to ensure readability and fairness.

- **Font size**: Must be 11 points or larger. Smaller text in figures, graphs, diagrams and charts is acceptable, as long as it is legible when the page is viewed at 100%.
    - Some PDF conversion software reduces font size. It is important to confirm that the final PDF document complies with the font requirements.
- **Type density**: Must be no more than 15 characters per linear inch (including characters and spaces).
- **Line spacing**: Must be no more than six lines per vertical inch.
- **Text color**: No restriction. Though not required, black or other high-contrast text colors are recommended since they print well and are legible to a greater audience.

The following fonts are recommended, although other fonts (both serif and non-serif) are acceptable if they meet the above requirements.

- Arial
- Georgia
- Helvetica
- Palatino Linotype

18 PMB Email Etiquette and Netiquette Tips

Since March 2020, our modes of communication have evolved toward greater emphasis on electronic format. To help you be professional with faculty and staff, here are some *email* tips.

1. Reply to emails promptly. Depending on the topic, this could mean within an hour, a few hours, or one day. If you need more time to address the substance of the email, write and let the sender know that you will be responding later.
2. If you will not be responding to email for a few days or more because you are away, set up an automatic reply. Recipients will then know why they have not heard from you and when they can expect to hear.
3. If you write to someone and do not hear back in 2–3 days, it is OK to write again. Professors and staff can get swamped with multiple professional obligations and get behind on emails (or even just miss a few that land in their spam folder). You can start the follow-up with something that acknowledges that, such as "Dear Dr. XXX or Ms. XXX, I know how busy you are but….." or just "Dear Dr. XXX or Mr. XXX, I am following up on my previous email to see if…."

If you are uncertain about how to compose a professional email, here are additional tips.

1. Start by remembering that email communication is different from texting. Communicating in a professional manner will be important for your career and this is a good time to get the rules straight.
2. Begin your email with "Dear Dr. XXX"; "Hi Dr. XXX" is also acceptable. "Hey Dr. XXX" or "Hey Jane" is informal and may not be to everyone's taste. Avoid this at first correspondence.
3. Faculty and staff have different preferences for being addressed by either their last name (more formal) or first name (more casual). If unsure, please start by using their last name (with Dr., Ms., etc. as above); if your correspondents sign emails with their first name, then a first-name basis should be fine.
4. Sign all emails with your name. Even if you signed your name earlier in the thread, sign it again each time you write.
5. As you sign off, you cannot go wrong by including "Regards", "Best regards", "Sincerely" or the like; omitting it is probably fine.

For group online interactions such as you have in class, either with your peers or with your own students, here are "netiquette" tips.

1. Be very clear and stick to the point when writing posts.
2. Do not use all caps to make your point; it is like yelling.
3. Check for spelling/grammar errors and do not use slang.
4. Be respectful of others with appropriate choice of language.
5. Be inclusive and considerate.
6. Challenge others, but avoid personal attacks.
7. Be careful when using humor online – it can easily be misinterpreted.
8. Catch up with the conversation before you write.

About social media postings:

Think carefully before posting questionable content on social media/online, given that it can impact your future academic and professional opportunities and relationships. Unsure about what is

questionable? Here are tips: https://www.studyinternational.com/news/social-media-mistakes-to-avoid-in-college/

19 Useful Abbreviations

ABD	All But Dissertation
B&BC	Biophysics and Biophysical Chemistry
BPS	Biophysical Society
BSPH	Bloomberg School of Public Health
CER	Center for Educational Resources
DBO	Doctoral Board Oral (same as GBO)
DEI	Diversity, Equity, and Inclusion
EB	East Baltimore
GBO	Graduate Board Oral (same as DBO)
GM	General Medicine
HW	Homewood
IBR	Institute for Biophysical Research
IDP	Individual Development Plan
JHMI	Johns Hopkins Medical Institutions
KSAS	Krieger School of Arts and Sciences
LMS	Learning Management System
MSTP	Medical Scientist Training Program
NIH	National Institutes of Health
OIE	Office of Institutional Equity
ORCID	Open Researcher and Contributor ID
PDCO	Professional Development Career Office
PMB	Program in Molecular Biophysics
RCR	Responsible Conduct of Research
REG	Race and Equity Group
SIS	Student Information System
SOM	School of Medicine
T32	Ruth Kirschstein Training Grant
TA	Teaching Assistant
TAC	Thesis Advisory Committee
TBA	To Be Announced
TDC	Thesis Defense Committee
TPSR	Thesis Proposal Seminar and Review
TRC	Thesis Review Committee
WSE	Whiting School of Engineering

Disclaimer: **This is not a legal document.** This booklet presents current guidelines and practices in the Program in Molecular Biophysics. The Directors and Steering Committee reserve the right to modify requirements, create new ones, and otherwise alter graduate program practices without advance notice.

JOHNS HOPKINS UNIVERSITY

JHU Mentorship Commitments of Faculty Advisors and PhD Students

This document outlines mentoring expectations of faculty advisors and of PhD students at Johns Hopkins University. These expectations should be discussed together.

Faculty advisors should commit to the following responsibilities:

Training:

- **The PhD advisor has the responsibility to mentor the PhD student.** This responsibility includes committing to the training of their PhD student, building on the PhD student's individual professional background and in support of their individual professional aspirations.
- **The PhD advisor has the responsibility to participate in ongoing and regular meetings with their advisees to discuss academic and research progress.** The advisor and student should agree on expected frequency of and preparation for meetings and use meetings to brainstorm ideas, troubleshoot challenges, and outline next steps. The advisor should identify a co-advisor/mentor should the primary advisor be unavailable for an extended period (sabbatical, leave, etc.).
- **The PhD advisor has the responsibility to participate in a formal annual meeting with the student to discuss academic progress and next steps in the academic program.** This responsibility includes helping to ensure that the document summarizing this annual discussion is completed and submitted in accordance with program requirements.
- **The PhD advisor has the responsibility to encourage their advisees to reach out, as relevant, to additional co-advisors or informal mentors.**
- **The PhD advisor has the responsibility clarify the student's funding package and to clarify any work and/or teaching expectations associate with the package.**
- **The PhD advisor has the responsibility to contribute to a training environment that fosters independent, scholarly research, and professional growth.**

Research

- **The PhD advisor has the responsibility to provide guidance in scholarly research.** This responsibility includes helping to identify a workable research project and helping to set reasonable goals and timelines for research completion. The advisor should encourage the student to expand their skill sets and share ideas with others at Johns Hopkins and externally.
- **The PhD advisor has the responsibility to monitor research progress.** The advisor should encourage effective use of time. The advisor should meet regularly with the PhD student to hear updates on progress, results, and challenges in activities and research.

Professional development:

- **The PhD advisor has the responsibility to discuss career development with the PhD student, including in any number of sectors of interest to the student.** PhD advisors should assist in identifying resources to further the student's professional goals.
- **The PhD advisor has the responsibility to participate in a formal annual meeting with the PhD student to discuss professional development goals.** The advisor should help to ensure that the document summarizing this discussion is completed and submitted in accordance with program requirements.
- **The PhD advisor has the responsibility to nominate the student for relevant professional opportunities and try to connect their advisees to relevant professional contacts and networks.**
- **The PhD advisor has the responsibility to allow time outside of research for student engagement in professional development activities** including, for example, skill building workshops, professional conferences, additional research collaborations, or other informational sessions.

Respectful engagement and well-being:

- **The PhD advisor has the responsibility to treat their advisees, other students, and colleagues with respect at all times.**
- **The PhD advisor has the responsibility to commit to being available to meet with the PhD student**. The advisor and the student should agree on expected frequency of and preparation for meetings, and expected timeframe for responding to emails and for providing feedback on work products. The PhD advisor should give their full attention during meetings and should reach out to PhD students who are not making contact.
- **The PhD advisor has the responsibility to be supportive during both successful and discouraging periods of training**.
- **The PhD advisor has the responsibility to communicate in a respectful and constructive manner, including if the advisor has concerns that the PhD student is not meeting the expectations outlined in this document.** This responsibility includes using concrete and specific language when providing suggestions or critiquing work.
- **The PhD advisor has the responsibility to take an interest in the student's well-being, to listen to any concerns, and to connect the student, as appropriate, with additional resources.**

Policies:

- **The PhD advisor has the responsibility to become familiar with and respect University, school, and program policies for PhD students.** The advisor will acknowledge all PhD student benefits and entitlements, including, as relevant, paid and unpaid leave.
- **The PhD advisor has the responsibility to discuss with the student relevant policies, commitments, and expectations related to funding, work, research assistantships, teaching assistantships, sick leave, or vacation.**

Responsible conduct:

- **The PhD advisor has the responsibility to become familiar with university and professional codes of responsible conduct for PhD students.** This responsibility includes reporting any possible violations as required to relevant parties, including to the relevant Dean's office and to the Office of Institutional Equity.
- **The PhD advisor has the responsibility to discuss and help clarify authorship or intellectual property issues and appropriately recognize the student's contributions to any collaborative work.**
- **The PhD advisor has the responsibility to model professional behavior in both interpersonal interactions and in scholarly integrity.**
- **The PhD advisor has the responsibility to complete Title IX Training regarding sexual misconduct and sexual harassment as required by the University.**
  http://oie.jhu.edu/training/

Continuous quality improvement as an advisor:

- **The PhD advisor has the responsibility to participate in mentor training and best practices discussions.** This responsibility includes striving to be a better mentor and to learn tips and practices that improve their work and skills as an advisor.
- **The PhD advisor has the responsibility to ask advisees for constructive feedback on mentoring.** This responsibility includes doing their best to respond professionally to these suggestions and consider whether or how best to incorporate them into their mentoring interactions.

PhD students should commit to the following responsibilities:

Training:

- **The PhD student has the primary responsibility for the successful completion of their degree.**
- **The PhD student has the responsibility to familiarize themselves with academic milestones and to strive to meet all milestones within the expected timeframe.**
- **The PhD student has the responsibility to meet regularly with the PhD advisor.** This responsibility includes providing the advisor with updates on the progress, outcomes, and challenges in coursework, research, and academic or professional activities. The advisor and the student should agree on expected frequency of and preparation for meetings, and will use meetings to brainstorm ideas, troubleshoot challenges, and outline expectations for work and timelines.
- **The PhD student has the responsibility to participate in a formal annual meeting with the advisor to discuss academic progress and next steps in the academic program.** The student should ensure that the document summarizing this discussion is completed and submitted in accordance with program requirements.
- **The PhD student has the responsibility to seek additional mentors to expand their training experience, as appropriate.**
- **The PhD student has the responsibility to understand their funding package and to clarify any work and/or teaching expectations in line with this funding.**

Research:

- **The PhD student has the responsibility to work with the advisor to develop a thesis/dissertation project.** This responsibility includes establishing a timeline for each phase of work and striving to meet established deadlines.
- **The PhD student has the responsibility to seek guidance from their advisor, while also aspiring increasingly for independence.**
- **The PhD student has the responsibility to engage in activities beyond their primary research responsibilities.** The student should attend and participate in any research-related meetings and seminars relevant to their training area.

Professional development:

- **The PhD student has the primary responsibility to identify their professional goals and to develop their career plan following completion of the PhD degree.** This responsibility includes familiarizing themselves with professional development opportunities within Johns Hopkins and externally. Students should identify specific activities to pursue that will advance their professional development and networking.
- **The PhD student has the responsibility to prepare a Professional Development Plan annually that outlines their research and career objectives.** This responsibility includes discussing this plan annually with the advisor. The student should ensure that the document summarizing this discussion is completed and submitted in accordance with program requirements.

Respectful engagement and well-being:

- **The PhD student has the responsibility to treat the advisor, other mentors, and colleagues with respect at all times.**
- **The PhD student has the responsibility to make themselves available, within reason, to meet with the advisor upon request.**
- **The PhD student has the responsibility to communicate in a respectful and constructive manner if they have concerns that the advisor is not meeting the expectations outlined in this document.**
- **The PhD student has the responsibility to be open to constructive criticism by the advisor, other mentors, and colleagues.**
- **The PhD student has the responsibility, as possible, for their well-being, should consider discussing any concerns with the advisor or other mentor(s), and should connect with available resources when needed.**

Policies:

- **The PhD student has the responsibility to familiarize themselves and comply with University, school, and program-specific policies and requirements for PhD students.**
- **The PhD student has the responsibility to discuss with the advisor relevant policies, commitments, and expectations related to funding, work, research assistantships, teaching assistantships, sick leave, or vacation.** As needed, the student will provide any documentation relevant to stated policies on leave and other requirements to the student's program, school, or the University.

Responsible conduct:

- **The PhD student has the responsibility to conduct themselves in a responsible and ethical manner at all times.**
- **The PhD student has the responsibility to familiarize themselves with University codes of responsible conduct for PhD students**.
- **The PhD student has the responsibility to engage in responsible research conduct.** This responsibility includes completing the responsible conduct of research training requirements of their specific school and program, and any specific discipline training requirements (e.g., animal and human subject work). The student will maintain accurate and contemporaneous records of research activities in accordance with the norms of best practices in their own discipline. The student should discuss authorship and intellectual property issues with the advisor.
- **The PhD student has the responsibility to complete Title IX Training regarding sexual misconduct and sexual harassment as required by the University.**
  http://oie.jhu.edu/training/