

Program in Molecular Biophysics

2021–2022 Student Handbook v.2021.2.0

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Introduction

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.

PMB Graduate Student Milestones by Year

Year One

The first year in PMB has many more organized items than subsequent years. For this reason, PMB has created a google calendar that displays the dates and times of courses, modules, rotations, and other important activities. You can access the first-year calendar by giving Nicole your gmail address. For further reference, the link is [PMB21](#).

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 Nicole if you have any doubt.

Below, you will find a summary of major first year activities and dates (as of August 22, 2021). It is both *incomplete* (because we cannot include the occasional small things that come up during the academic year) and *subject to change*. When changes occur you will likely get emails or announcements from instructors, TAs, administrators and staff, or the program director or co-director. It is your responsibility to assimilate these changes into your schedule. If you have any question, confirm with instructors, administrators, staff, and each other.

2021–2022: A year with some uncertainties

Because of the SARS-CoV-2 pandemic, schedules and activities in this handbook differ from past years and may be modified with little notice to ensure everyone's health and safety according to the university's directives. As of Aug 22, 2021, we anticipate that classes and events will be held in person, but this may change. Watch for announcements.

Fall Semester

Schoolwide Orientation (online on Blackboard)	
Program Orientation	Aug 23
Institute for Biophysical Research Retreat, Part 1	Aug 24
Online Safety Course (MyLearning)	Aug 25 – 26
Schoolwide Welcome Bag Pick Up	Aug 26
Online “Avoiding Plagiarism” Course (MyLearning)	Aug 25 – 27
Library Orientation	Aug 27
Computer Boot Camp	Sep 1 – Sep 30
Statistics and Data Analysis Module	Oct 4 – Oct 8
Faculty Research Forums	TBA

Physical Chemistry of Biological Macromolecules	Aug 30 – Dec 06 (Final TBA)
Proteins and Nucleic Acids 1	Aug 30 – Dec 06 (Final TBA)
Rotation 1	Oct 11 – Dec 10 (Rotation talks Dec 10)
Biophysics Seminars	Sep – Dec
Student Evening Series	Sep – Dec
Institute for Biophysical Research Retreat, Part 2	TBA (Dec or later)
Self-study in Biochemistry, Cell & Molecular Biology	Ongoing – Make time for this in your schedule.

Intersession

Solutions Biophysics Module	Jan 4 – Jan 10
NMR Module	Jan 11 – Jan 20
Biophysics Seminars	
Self-study in Biochemistry, Cell & Molecular Biology	Ongoing – Make time for this in your schedule.

Spring Semester

Proteins and Nucleic Acids 2	Jan 21 – Apr 30
Rotation 2	Jan 24 – Mar 18 (rotation talks Mar 18)
PMB Interviews/Recruiting	Jan 27 – Jan 30
Single Molecule Module	Mar 21 – Mar 25
Rotation 3	Mar 28 – May 20 (rotation talks on May 20)
SOM Registration*	July 5
Biophysics Seminars	Jan – May
Student Evening Series	Jan – May
Self-study in Biochemistry, Cell & Molecular Biology	Ongoing – Make time for this in your schedule.
Join Thesis Laboratory	May 23
Proficiency Evaluation	May 24 & 27

*For students joining a lab at the East Baltimore Campus (SOM & SPH). This must be done *in person* on the specified date. Tammy Hubbe is the contact person for confirmation.

Summer

Macromolecular Simulations Module	Jun 6 – 10
X-Ray Module	Jun 13 – 17
RCR Course	TBA

Year Two

Fall Semester

Elective*

Biophysics Seminars Sept – Dec

Student Evening Series Sept – Dec

Intersession

RCR Workshop

Spring Semester

Elective*

Proposal writing workshop TBA

Savvy Seminars Didactic Sessions TBA

Biophysics Seminars Jan – May

Student Evening Series Jan – May

Graduate Board Oral Examination April/May

Summer

Savvy Seminar Practice Seminars TBA

*One full semester elective (equivalent to three academic electives) is required, and can be taken either in the fall or spring semester. Courses taught at the School of Medicine are typically half semester course. Two of those courses are needed to complete the elective requirement. Ideally, the elective will be taken in the second year, although in extenuating circumstances, a student may wish to take a specialized elective course that is only offered in the student's third year. Courses required from the first-year proficiency evaluation count as electives. Electives (and third-year requests) must be approved by both the student's thesis advisor and by the PMB program director.

Check [here](#) for the Hopkins definition of the credit.

Year Three¹

Fall Semester

Thesis Proposal Practice Talk* Oct – Dec

Thesis Proposal Seminar Oct – Dec

Student Evening Series Sep – Dec

*The practice talk is to be scheduled in the student evening series, one week prior to the seminar at the latest.

¹ Although there is no program activity planned for the summer months beyond Year 2, graduate students are expected to work in the lab and must register according to the Registrar's schedule. See page 11.

Intersession

RCR Workshop

Spring Semester

Student Evening Series Jan – May

Year Four

Fall Semester

Thesis Advisory Committee Meeting Oct – Dec
Student Evening Series Sep – Dec

Intersession

RCR Workshop

Spring Semester

Student Evening Series Jan – May

Year 5 to Final Year

Fall Semester

Thesis Advisory Committee Meeting Oct – Dec
Student Evening Series Sep – Dec

Intersession

RCR Workshop

Spring Semester

Thesis Advisory Committee Meeting Apr – May
Student Evening Series Jan – May

Final Year

Fall Semester

Thesis Advisory Committee Meeting Oct – Dec (as applicable)

Intersession

RCR Workshop (as applicable)

Spring Semester

Thesis Advisory Committee Meeting Apr – May (as applicable)
Private thesis defense to thesis committee
Submit final dissertation to MSEL
Thesis Seminar (after submission of corrected thesis to library)

Code of Conduct

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. Students must refrain from acts that they know, or under the circumstances have 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 work the same or substantially similar work of another; knowingly furnishing false information to any agent of the University for inclusion in the academic records; dishonesty in discharging teaching assistant duties; falsification; and forgery.
- **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 (physical or verbal)², 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.

A Johns Hopkins University guide, [Academic Ethics for Undergraduates](#), is accessible on the web. Although the guide is written for undergraduates, the principles regarding academic integrity apply to all students in the University.

Procedures for handling allegations of misconduct by full-time and part-time graduate students in the Schools of Arts & Sciences and Engineering can be found at <http://homewoodgrad.jhu.edu/academics/policies/>

PMB Code of Conduct

PMB follows Johns Hopkins code of conduct and that of the Biophysical Society (BPS). 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,

² Definition of harassment: The term "harassment" includes but is not limited to epithets, unwelcome slurs, jokes, or verbal, graphic or physical conduct relating to an individual's race, color, religious creed, sex, national origin, ancestry, citizenship status, age, gender or sexual orientation that denigrate or show hostility or aversion toward an individual or group.

Sexual harassment refers to unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature. Behavior and language that are welcome/acceptable to one person may be unwelcome/offensive to another.

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.

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.”

Go to <https://oie.jhu.edu/discrimination-and-harassment/equal-opportunity-statement.html> for the full statement.

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. Drop an email to pmb@jhu.edu to indicate your interest.

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.

2021–2022: Additional information

Additional rules of conduct, related to public health, must be followed as prescribed by the university. For information and updates, visit

<https://covidinfo.jhu.edu/>

PMB Administration

Administrative Structure

Dr. Juliette Lecomte is the director of the Program in Molecular Biophysics. Dr. Karen Fleming is the co-director. They are jointly responsible for the day-to-day operations of the program. Major policy questions and serious issues concerning the status of individual students are addressed by the PMB Steering Committee, a standing committee with PMB faculty representatives from the four participating schools.

Administrative Contacts

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Faculty Composition

The list of 36 participating faculty and their affiliations is on page 28.

Useful Information

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 and 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 are 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 Teri Pennington 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).

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) that courses are not taken. Registering on time is important: missing the deadline will result in substantial fines to be defrayed by the student.

Financial Support

It is expected that financial support covering living costs will be made available to all accepted students throughout their education, provided that satisfactory progress towards the degree is being maintained. Most PMB students are provided with stipend and tuition support for their first two years by an NIH training grant. From the start of year three to completion of degree, stipend and tuition expenses are borne by research grants to the student's thesis advisor. If financial emergencies arise during a student's thesis research (owing to interruption in external funding to the thesis advisor, for example), every effort will be made by the program to help support student expenses, although in such situations, it is expected that support will primarily be provided at the departmental level.

Employment

All Kirschstein-NRSA fellows (individual fellowships) and trainees (institutional training grants) are required to pursue their research training full time. Full-time is generally defined as devoting at least 40 hours per week to research training activities, or as specified by the awardee institution in accordance with its own policies.

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

Leave

PMB follows NIH policies for vacations, holidays, parental, and sick leave. See section 11.3.16 of <https://grants.nih.gov/grants/policy/nihgps/nihgps.pdf>

Vacations and Holidays

Trainees and fellows may receive the same vacations and holidays available to individuals in comparable training positions at the grantee or sponsoring institution. Trainees and fellows shall continue to receive stipends during vacations and holidays. **At academic institutions, the times between semesters or academic quarters (e.g., winter, spring, and summer break) are considered an active part of the training period.**

As such, students are to receive **10 days** of vacation each year, plus normal University holidays, such as Thanksgiving while they are on the training grant. Spring and fall breaks (as scheduled in the undergraduate calendar) are **not** considered University holidays. Once students are off the training grant their vacations are negotiated with their faculty advisors, but generally fall under the NIH guidelines applied to trainees.

Sick Leave

Trainees and fellows may continue to receive stipends for up to 15 calendar days of sick leave per year. Under exceptional circumstances, this period may be extended by the NIH awarding office in response to a written request from the Program

Director, countersigned by an Authorized Organization Representative in the Johns Hopkins Sponsored Projects Office. Sick leave may be used for medical conditions related to pregnancy and childbirth. In rare cases, students require extended medical leave.

Parental Leave

Trainees and fellows may receive stipends for up to 60 calendar days (equivalent to 8 work weeks) of parental leave per year for the adoption or the birth of a child. Either parent is eligible for parental leave. This leave is available to new parent trainees regardless of whether leave is available to their spouse/partner. The use of parental leave must be approved by the training Program Director.

Students should notify their advisor in a timely manner when requiring sick leave and should provide medical documentation when appropriate. Students should also notify their advisors well in advance when planning parental leave.

The leave-of-absence policy is described in detail on page 31.

Probation and Dismissal from the Program

The program director, co-director and faculty will make every effort to help a student who is performing poorly. However, if a student's performance remains unsatisfactory, the director or thesis review committee will take the following actions:

- The student will receive a letter of warning and may be placed on probation.
- If the student's performance does not improve, they will receive a second letter stating a fixed date of termination from the program.
- Before a student is terminated from the program, the Steering Committee will be consulted to review the grounds for dismissal.

Information regarding Probation and Dismissal can be found at <https://homewoodgrad.jhu.edu/academics/policies/>

Unsatisfactory performance includes coursework grades that are below expectations, unsatisfactory rotation evaluations, and unsatisfactory dissertation research (see Policy on Grades and Rotation Evaluations). **Unsatisfactory performance also includes, and is not limited to, failure to follow PMB instructions for thesis reviews** (see Mid-stage thesis review) **and failure to attend RCR sessions** (see Responsible Conduct of Research). In addition, if no mutually agreeable arrangements for thesis research between a PMB faculty member and a student have been made by the end of July in the first year, the director will consult with the Steering Committee as to whether the student should be permitted to continue looking for an advisor or asked to leave the program.

Academic Advisors

Students are advised to discuss questions about the program, minor academic problems, and other issues that may arise with the PMB academic advisor. Drs. Juliette Lecomte and Karen Fleming will serve as academic advisors for first-year PMB students. For PMB students in their second year and beyond, Juliette Lecomte will serve as academic advisor.

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 Center for Educational Resources (CER) 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 and co-director work directly with the student to mediate a workable solution.

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 process is also time consuming for Hopkins administrators. Students should warn Nancy Foltz (nfoltz@jhu.edu) on the Homewood campus or Rhea Dubs (rcdubs@jhmi.edu) on the East Baltimore campus of their intention to submit an application *at least one month ahead of the agency deadline*. In addition, the completed application must be provided to their office *at least one week ahead of the agency deadline*. Note that you will need an ORCID number/account to submit. Registering takes a few minutes.

Program Requirements

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, and the shorter duration of these two rotations.* 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 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 timing and type of elective, whether half or full.) The first thesis review will take place in the fifth semester. 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

http://web.jhu.edu/administration/provost/initiatives/phd_board/rights_responsibilities

Core Courses

As of August 2017, the following courses are required of all entering PMB students. Because of curriculum upgrade, some changes may apply, to be communicated when available.

- Physical Chemistry of Biological Macromolecules (*García-Moreno & staff, Homewood*)
- Proteins and Nucleic Acids 1 (*Woodson/Bowman, Homewood*)
- Proteins and Nucleic Acids 2 (*Berger & staff, SOM*)
- Introduction to Computing Course (*Bowman & staff, Homewood*)
- Safety Course (*online*)
- Avoiding Plagiarism Course (*online*)
- Responsible Conduct of Research Course (*Bosch & staff, Homewood*)
- Modules in Molecular Biophysics (6) (*Lecomte & staff, Homewood*)
- Biophysics Seminar (*Lecomte, Homewood*)
- Elective
- Savvy Seminars (*Fleming, Homewood*)
- Writing Workshop (*Barrick/Bowman, Homewood*)

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.

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, first year students are required to attend (1) the biophysics seminars on the campus where they are doing their rotations; (2) all named lectures; and (3) the *Chalk It Up* series (see page 19). Homewood biophysics seminars are held on Mondays, 12 noon; SOM biophysics seminars are held on Wednesdays, 1:30 PM. **Repeated absences will result in a failing grade for the seminar course.**

During their second year, students are required to attend the biophysics seminars on the campus where they are doing their thesis work, and all named lectures and *Chalk It Up* series.

Beyond the second year, students are expected to attend as many seminars as possible, and all named lectures and *Chalk It Up* series.

Policy on Grades

- Students must receive a grade above a C+ in any of the required courses or the course must be repeated.
- Failure to receive a grade above a C+ in two required courses is grounds for termination from the program.
- Failure to receive a grade above a C+ in a required course a second time 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 it for two semesters is grounds for termination from the program (see Probation and Dismissal from the Program, page 13).

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 Probation and Dismissal from the Program, page 13).

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 a 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 a yearly mandatory RCR workshops, organized by PMB faculty. These workshops typically take place at the beginning of the calendar year during the January intersession (but watch for announcements). **Failure to attend the RCR workshops without prior alternative arrangement with the program director will result in probation.**

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.

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.

Laboratory Rotations

Perhaps 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 first-year laboratory rotations are the primary means by which students will inform this key decision. Thus, the main goal of each rotation is to give the student experience with particular research and the feel for a laboratory and campus.

Each student is required to complete three laboratory rotations during their first academic year. Each rotation has a duration of eight to nine weeks (dates are given on pages 4 and 5). Although these rotations are short on the time-scale of scientific discovery, students should strive to advance their projects and make scientific contributions in each.

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

Students are expected 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. Secondary considerations include availability of individual faculty members and coordinating with the interests of other first-year students. To accommodate such scheduling issues, students should take charge of contacting faculty to discuss possible rotation and thesis projects. Students will meet one-on-one with the program director and co-director (Lecomte and 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. In case two students are interested in the same labs, rotations will be assigned by Drs. Lecomte and Fleming.

For the first two rotation periods, only one PMB rotation student is permitted in an individual lab. This policy avoids crowded rotations, which can be difficult for rotation students and labs hosting them. In the third rotation period, multiple students can rotate in the same lab, in case students were unable to rotate in one of their top choices in periods one and two.

At the end of each rotation period, students will present 10-minute talks with their rotation advisors and other 1st-year students present. All other PMB faculty and students will be invited to attend.

Students are expected to choose a laboratory and begin their thesis research following the completion of their third rotation. In unusual circumstances, the program director may authorize a fourth rotation (see Probation and Dismissal from the Program, page 13). 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.

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 year 21–22, the individual meetings are likely to take place during winter intersession or early in the spring semester.

Rotation Evaluations

The rotation advisor must complete a form evaluating the student's effort, interest, comprehension, and skill. This form will become part of the student's departmental academic file. An evaluation with unsatisfactory rankings will result in a warning letter to the student, and a second rotation with unsatisfactory rankings is grounds for dismissal (see Probation and Dismissal from the Program, page 13). The form is appended at the end of the handbook.

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 should work on improving these areas in future rotations and beyond.

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 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 similar to the Graduate Board Oral 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 exam does not jeopardize a student's standing in the program.

Any student who does not pass the proficiency exam in May will be given the opportunity to study during the summer and take it again in September. A second interview is not a requirement.

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 these are listed below.

- Thomas C. Jenkins Department of Biophysics seminar series comprises the required course *Biophysics Seminar* (AS250.601-602) mentioned above. Homewood students are expected to continue to attend this Monday noon seminar series after their second year.
- The Department of Biophysics & Biophysical Chemistry sponsors a series of seminars from invited outside speakers. These are held on Wednesdays at 1:30 PM in the School of Medicine. PMB students enrolled in the Department of Biophysics & Biophysical Chemistry are expected to attend these seminars.
- 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 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 PMB faculty 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.
- *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, and Eric Greene. Each year, two senior students are identified by the PMB director to organize the speaker selection and visiting schedule. This year, the speaker is William Bialek, scheduled for March 30, 2022.

The seminar course *Topics in Macromolecular Structure and Function* (ME100.804), offered by the Department of Biophysics & Biophysical Chemistry, meets Wednesday mornings at 9:15. The

seminar course has a different theme each semester, and classes (seminars) are presented by both students and faculty covering different topics relevant to the theme. Auditors are welcome. PMB students are required to attend the third year proposal presentations in this series.

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 big 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 eyes of others.

Writing Workshop

Writing is a critical part of the enterprise of science. 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 creating and placing figures and tables. Students and faculty will meet in groups and in one-on-one sessions, and will get direct feedback on their written proposal from faculty, students, and in the course of preparing their proposal, their faculty mentors.

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 the starting point for submission of an NIH F31 predoctoral fellowship. These fellowships not only provide research support to the student's thesis lab, they are prestigious awards that provide significant advantage to the recipient student in applying for postdocs, postdoc research fellowships, and subsequent professional positions.

Student Evening Series

To provide students with additional speaking opportunities and feedback on their research, and to build and maintain camaraderie, selected students will organize an evening series in which all students will participate and third-year students will present their thesis projects to other PMB students. As the name implies, these seminars are held in the evening. Frequency is approximately once per month and the setting, if in-person, will depend on the location of the presenter's lab (Homewood or East Baltimore Campuses). These series are organized by 4th year PMB students,

who should be selected by the students on 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 Nicole to avoid potential conflicts with other program activities (e.g., recruiting, third-year practice talks, retreat organizers, organizers for the student invited speaker). Student Organizers also work with Nicole to advertise the schedule and announce upcoming presentations to the entire PMB class. Participation in the student evening series, both as a third-year presenter and an all-year participant, is a PMB requirement.

Graduate Board Preliminary Oral Examination

- **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 composition of the committees is decided by the program director in accordance with the spirit of the Graduate Board.

It is PMB's 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.

- **Scope of the exam:** The preliminary oral examination is designed to test the breadth and depth of the student's knowledge and reasoning abilities. The exam does not focus extensively on the student's thesis research area, although GBO committees often ask for a brief description of their project to provide some background. Although the topics covered in the GBO can in principle be quite broad, the PMB GBO focuses first and foremost on molecular biophysics. The materials that students have encountered in their first-year curriculum, and in particular, biomolecular structure, function, physical chemistry, and methods of inquiry related to these topics are central. Students can also expect some coverage of material from the proficiency evaluation, though the central focus is molecular biophysics.
- **Setting up the oral exam:** The program administrator will notify students of when they are scheduled to appear.
- **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. It is the responsibility of the student and the advisor to ensure that the conditions are met.

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. (See page 22 for details).

Thesis Requirements

Thesis Advisor

Students are expected to choose a thesis advisor from among the PMB faculty at the conclusion of their third rotation. This is a critical choice for both student and advisor, and it should be made with care. Faculty are not required to accept all students interested in their laboratories. In unusual circumstances, the director may authorize a fourth rotation (see Program Requirements).

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 frequency of meetings is once a year in Year 3 (by the TRC) and 4 (by the TAC), and twice a year beyond Year 4 (by the TAC).

It is a University requirement that every student enrolled in the program must have at least one yearly thesis review.

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, (ii) the student is actively writing the thesis, (iii) 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.

Actual writing of the dissertation is monitored by the advisor.

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 the 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. 3) It serves as a first 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 on the Homewood campus will be evaluated on that campus, typically during the normal Monday noon seminar time slot in the T.C. Jenkins Department of Biophysics. Students at the East Baltimore campus will be evaluated on that campus, typically in a fixed morning time-slot (currently Wednesdays at 9:30 AM).

The reviewing committee (the TPSRC) will consist of a core group of two PMB faculty, 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 ad hoc member is designated as the reader. Both members of the core group will be from the same campus as the student for scheduling reasons; the same core will evaluate all students in a given campus in a given year and the senior member of the core group will serve as the chair of the committee. The core committee will be selected by the PMB director, each member serving for two years. The PMB director will coordinate with the core group, student and thesis advisor to find a date that works within the seminar schedule. 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 program (Nicole Goode) of the committee composition and to provide the seminar coordinator for either the Jenkins Department (assistant in 110 Jenkins Hall) or the Department of Biophysics and Biophysical Chemistry (Casey Jacobs) with a presentation title.

Format of the proposal: The student must provide a 5-page research proposal to the TPSRC at least one week prior to the review. The reader will be responsible for going over the written document in advance of the presentation and for meeting with the student to provide feedback. The student should also arrange a meeting with the thesis advisor to discuss matters related to the Individual Development Plan (IDP) required by NIH and fill the IDP questionnaire.

Practice talk: Each student must schedule an evening practice talk with their PMB classmates no later than one week prior to their public presentation. Students should coordinate with Nicole to be sure 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.

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 will meet with the student in private to discuss the thesis proposal and preliminary data. This phase of the third-year thesis review should take 30 minutes. Additional time should be reserved for the committee to meet with advisor and student individually. Scheduling should therefore allow for ~1h 15 min. The student will bring the filled IDP questionnaire to the meeting for discussion with the committee. The TPSRC will also briefly critique the seminar, and the reading faculty member will critique the written proposal and provide edits to help the student improve their writing.

Outcome: The committee chair will write to the student a letter summarizing the committee discussion and any recommendations or requirements. 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.

Note on the core committee: Appointments are staggered to ensure continuity. In the second year of service, the core member will serve as the TPSR chair, and is responsible for drafting a letter, to be modified and approved by the committee as a whole, and sent to Nicole Goode (for students on the Homewood campus) or Tammy Hubbe (for students on the East Baltimore campus) in a timely manner, who will send the evaluation to the student and thesis advisor.

Mid-stage Thesis Review

In years four and beyond, students meet one-on-one with their Thesis Advisory Committees (TAC) to discuss their progress with their research and their future research and career plans. Mid-stage review happens once in year four (in October or November), and twice in years five and beyond (in October or November and April or May). The object of the thesis review is to provide detailed discussion and 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, and two more PMB faculty. There is no restriction as to which campus TAC members are drawn, but **the TAC must be composed of PMB training faculty**. Rare 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 they hear 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 the IDP questionnaire (information available on the PMB web page). At the close of each review, students must initiate the scheduling process to ensure that the next meeting will occur within the prescribed time window.

Format: TAC meetings will consist of a closed presentation to the TAC presentation of less than 30 minutes. This presentation should include relevant background, results, challenges, and future plans to complete the thesis. This presentation will be interrupted by questions and suggestions from the committee. The meeting ends with a discussion of the student's long-term plans after leaving PMB and steps the student has taken to achieve those goals. In total, the meeting should last no longer than 1.5 hours. The student must provide a one-page research summary at least one week in advance. The student will bring the filled IDP questionnaire to the meeting for discussion with the committee.

Outcome: The committee chair, appointed by the program director, will write the student a letter summarizing the discussion and any specific recommendations. This letter 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 (Nicole Goode), 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. Repeated failures will result in 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 the 4th year (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.

Individual Development Plan (IDP)

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 on page 28. Note the requirement of attending the NIH Career Symposium.

Thesis Defense Committee (TDC) and Final Oral Examination

The final oral examination committee, or Thesis Defense Committee (TDC), must consist of **five 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. **Students who have scheduled their defense must provide the information to Nicole Goode as soon as available.** All five committee members and the alternate receive a copy of the dissertation **at least two weeks prior to the exam.**

Failure to deliver copies of the thesis 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.

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 his/her dissertation is sufficient; and
- To authorize the student to go forward with presenting the thesis seminar.

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 a presentation during the final oral exam to highlight the major findings of the dissertation, approximately 40–50 minutes in length. 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.

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 additional 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 Nicole Goode or Casey Jacobs. Thesis submission fees are covered by the two Biophysics Departments.

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.

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. Sometimes delaying submission by one day can delay degree conferral by four months.
- Presentation of the student's thesis seminar.

Participation in Scientific Meetings

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.

2021–2022: Another extraordinary year

Owing to the SARS-CoV-2 pandemic, the 2021 retreat will be in two parts. In the first part, on Tuesday, August 24th, there will be a virtual poster session, first year introductions and a keynote address. In the second part, to be scheduled in December (or later) according to pandemic conditions, there will be several presentations by faculty, post-docs, and students.

Travel to Meetings

The training grant can provide limited funds to allow students to attend meetings. Such travel is not an automatic right, 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.

Internships and beyond

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 manuscripts published or at least submitted for publication. Students who are struggling to get their thesis project on track should first focus on their research. Choosing the right time 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 internships 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.

Career Counseling

PMB uses several mechanisms to prepare its trainees for post-graduation employment. These include IDP 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 <https://provost.jhu.edu/integrative-learning-and-life-design/life-design/phutures/> for more information.

Semi-annual PMB Career Workshop: PMB hosts a semi-annual all-day event 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 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. These career workshops are currently supported by the Provost's office and are organized by Dr. Cynthia Wolberger. First and second year students are welcome to these events but are not required to participate.

General Resources for Graduate Students

Office of KSAS Graduate Affairs

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

Graduate Representative Organization

The 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. For more information, visit <http://gro.jhu.edu/>, gro@jhu.edu.

Graduate Student Association

The GSA is the major graduate student organization of The Johns Hopkins University School of Medicine. For more information, visit http://www.hopkinsmedicine.org/som/students/life/graduate_student_association.html

Student Health & Wellness Center

Graduate school can be stressful. Research is challenging, and experiments often don't work. Multiple times. 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? Policy? These and other uncertainties are hard to deal with, 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 simple techniques and activities that can help counteract these feelings. These include exercise, hobbies, meditation, journaling, and socializing with friends. We encourage you to develop and maintain habits that will work for you.

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 Juliette Lecomte and Administrator Nicole Goode. These conversations will be confidential, and will be used to 1) get students to mental health experts and 2) 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.

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 5:30 PM. During the academic year, it is also open on Saturdays from 11:00 AM to 2:00 PM. For more information, visit <https://studentaffairs.jhu.edu/student-health/>.

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 jhsap.org. Additional resources are available at <https://www.hopkinsmedicine.org/getting-help>

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 (Kristina Nance, GradDisabilityOffice@jhmi.edu, 667-208-8058) to discuss your specific needs.

Counseling Centers

The Counseling Center at Homewood offers individual and group counseling, consultation and referral services, and help with career decision-making. Services are confidential and free of charge. The Counseling Center is located at 3003 N. Charles Street, Suite S200 and open Monday through Friday from 8:30 AM to 6:00 PM. 410-516-8278. For more information, visit <http://web.jhu.edu/counselingcenter>.

Students on the East Baltimore campus are eligible for services through the Johns Hopkins Student Assistance Program (JHSAP). 443-287-7000, jhsap@jhu.edu. For more information, visit <http://jhsap.org/>.

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 website provides clear and consolidated information on sexual assault policies and available services and support in the event of an incident of sexual assault. Sexual Assault Helpline 410-516-7333, <http://sexualassault.jhu.edu/>.

Office of Institutional Equity

This office oversees concerns relating to sexual harassment, discrimination/compliance, and disability services. <http://web.jhu.edu/administration/jhuoie>; Wyman Park Building, Suite 515, office telephone 410-516-8075, disability support services 410-516-8949.

Johns Hopkins University Career Center, Homewood campus

The Johns Hopkins Career Center serves all full-time students (freshmen through Ph.D. candidates) in the Krieger School of Arts & Sciences and the Whiting School of Engineering.

<https://studentaffairs.jhu.edu/life-design/>; Wyman Park Building, Suite 2 west, 410-516-8056, lifedesignlabhomewood@jhu.edu.

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.

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. See <https://provost.jhu.edu/integrative-learning-and-life-design/life-design/phutures/> for more information. The provost office is in Garland Hall, Suite 265, 410-516-8070.

Policies Regarding Leave of Absence and Standing in the Program

Leave of Absence (Homewood Campus Policy)

Graduate students may apply for up to four semesters of leave of absence (not including the summer term) when medical conditions, compulsory military service, or personal or family hardship prevents them from continuing their graduate studies. Financial difficulty alone does not warrant a leave. For detailed and up-to-date leave of absence (LOA) policies, see

<http://homewoodgrad.jhu.edu/academics/graduate-board/new-grad-board-residency-page/>

To be approved for a leave of absence (LOA), graduate students on the Homewood campus must complete the LOA application, available here:

<https://homewoodgrad.jhu.edu/academics/graduate-board/enrollment-status-change-forms/>

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

During a leave of absence, students do not receive a stipend, regardless of whether they are supported by the training grant, by funding from their advisor, or through their own fellowship. 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, 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.

A student on a leave of absence is not to make use of any University services or facilities (e.g., counseling center, health center, library, athletic facilities, etc.). Moreover, a student on a leave of absence is not to work on his or her research, either in the laboratory (here at Hopkins or at the laboratory of a collaborator) or remotely via electronic means. Nor should a student generate written content related to his or her thesis; this includes manuscripts to be published, and thesis material.

The PMB 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.

Returning from Leave of Absence (Homewood Campus Policy)

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.

Importantly, given that students are not permitted to work on their thesis while on leave, students must return to full-time status prior to resuming and completing their thesis research and dissertation.

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.

PMB Email Etiquette and Netiquette Tips

Since March 2020, our modes of communication have evolved toward greater emphasis on electronic format. We now have multiple apps to interact with each other, from Slack to email, each with its own purpose and flavor. To help you be your best professional selves 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 a day. If you need more time to address the substance of the email, write and let them 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. Then people will 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 email (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 at first.
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.
6. Keep the same rules in mind for any professional interaction outside of the university (with vendors, invited speakers, assistants, etc.)

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.

PMB FAQ: 2021 First year information

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. Access to buildings and offices is limited to those students/staff/faculty who have been granted permission to be on campus.

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 10 and following. Open hours vary during the pandemic.

Q: Where is my mailbox?

A: All first year students have a mailbox, located in 105 Jenkins Hall. Keys to the mailroom are given out at orientation.

Q: Will I be given access to Jenkins Hall?

A: Yes. During the Fall 2021 semester, you can access to Jenkins Hall through the loading dock entrance 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 [? procedure for SOM, etc.?

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 Jcard app, go to <https://studentaffairs.jhu.edu/jcard/>

Q: How do I register?

A: Graduate students register on line. 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://registrar.jhu.edu/idr/>.

Q: What is my schedule for the first year?

A: Your schedule is outlined in the handbook. Details are available on SIS and events are listed on the PMB21 Google calendar

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 you do not require it, 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 first paycheck?

A: Your first stipend payment will be on 9/15/2021. Paychecks are issued semi-monthly on the 15th and last day of the month. If either day fall on a Saturday, Sunday or Holiday you will be paid the day before. All students should sign up for direct deposit. This is especially crucial for this year as you may be unable to pick up your physical paycheck from Jenkins Hall if the office is closed. 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. You should file quarterly taxes. If you need more information, please visit the Tax Office website (

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 and 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. 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. 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 funds availability.

PMB Faculty Composition

	Name	Department	School
1	Bailey, Scott	Biochemistry & Molecular Biology	BSPH
2	Barrick, Doug	Biophysics	KSAS
3	Berger, James	Biophysics & Biophysical Chemistry	SOM
4	Bowman, Greg	Biophysics	KSAS
5	Camley, Brian	Physics	KSAS
6	Fleming, Karen	Biophysics	KSAS
7	Fried, Stephen	Chemistry	KSAS
8	Frueh, Dominique	Biophysics & Biophysical Chemistry	SOM
9	García-Moreno, Bertrand	Biophysics	KSAS
10	Gray, Jeffrey	Chemical & Biomolecular Engineering	WSE
11	Green, Rachel	Molecular Biology & Genetics	SOM
12	Greenberg, Marc	Chemistry	KSAS
13	Ha, Taekjip	Biophysics & Biophysical Chemistry, Biophysics	SOM, KSAS
14	Hilser, Vincent	Biology	KSAS
15	Hristova, Kalina	Materials Science & Engineering	WSE
16	Johnson, Margaret	Biophysics	KSAS
17	Kaiser, Christian	Biology	KSAS
18	Kavran, Jennifer	Biochemistry & Molecular Biology	BSPH
19	Lau, Albert	Biophysics & Biophysical Chemistry	SOM
20	Lecomte, Juliette	Biophysics	KSAS
21	Liu, Jian	Cell Biology	SOM
22	Myong, Sua	Biophysics	KSAS
23	Ostermeier, Marc	Chemical & Biomolecular Engineering	WSE
24	Prigge, Sean	Molecular Microbiology & Immunology	BSPH
25	Rokita, Steven	Chemistry	KSAS
26	Sadegh-Nasseri, Scheherazade	Pathology	SOM
27	Sohn, Jungsan	Biophysics & Biophysical Chemistry	SOM
28	Spangler, Jamie	Biomedical Engineering	WSE
29	Tolman, Joel	Chemistry	KSAS
30	Townsend, Craig	Chemistry	KSAS
31	Twomey, Edward	Biophysics & Biophysical Chemistry	SOM
32	Wolberger, Cynthia	Biophysics & Biophysical Chemistry	SOM
33	Woodson, Sarah	Biophysics	KSAS
34	Wu, Bin	Biophysics & Biophysical Chemistry	SOM
35	Xiao, Jie	Biophysics & Biophysical Chemistry	SOM

The [PMB website](#) has research interest descriptions and contact information.

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
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.

Addenda

Rotation Evaluation Form

Thesis Review Form

PMB LABORATORY ROTATION EVALUATION

20xx– 20xx Academic Year: Rotation x (xx/xx/xx – xx/xx/xx)

Student's Name: _____

Faculty Rotation Advisor: _____

IT IS A REQUIREMENT THAT THE ROTATION ADVISOR DISCUSS THIS COMPLETED EVALUATION WITH THE ROTATION STUDENT.

	<i>Significantly below expectations</i>	<i>Somewhat below expectations</i>	<i>Met expectations</i>	<i>Exceeded expectations</i>
Time and effort				
Comments:				
Interest in project				
Comments:				
Skill in laboratory or computer practice				
Comments:				
Comprehension of problem, concepts & context				
Comments:				

	<i>Significantly below expectations</i>	<i>Somewhat below expectations</i>	<i>Met expectations</i>	<i>Exceeded expectations</i>
Ability to work independently				
Comments:				
Quality of oral presentation				
Comments:				

OVERALL EVALUATION	Unsatisfactory <input type="checkbox"/>	Satisfactory <input type="checkbox"/>
OVERALL COMMENTS:		

Do you have any reservations about supervising this student's dissertation? No Yes (please explain below)

Sign below to confirm that the rotation student and rotation advisor have discussed this evaluation.

Rotation student's signature

Rotation advisor's signature

Please return this form to Nicole Goode, ngoode@jhu.edu.

Individual Development Report

Instructions

This Annual Academic Progress and Professional Development Plan document is meant to help you, a Johns Hopkins PhD student, reflect on and discuss with your advisor (a) your academic and research progress and annual goals; (b) your professional goals, including your strengths, areas to explore, areas to improve, values, and plans; and (c) how your advisor and the program can help you reach your goals. The form is intended to be a springboard for productive conversation.

Prior to your thesis review, please meet with your advisor to discuss your progress and goals since the last review. You may find the worksheet on page 3 useful to help you focus on specific strengths and weaknesses. Fill the form at the end of this document (page 4) and share it with your committee members. The form will be kept with your record. There is no need to turn in the worksheet.

At the meeting, make sure to schedule your next TAC review.

Trainee:

- 1) Go to myIDP (<http://myidp.sciencecareers.org/>), update your entries, and send the certificate of completion to Nicole Goode. This step should be done *once every year*, for the fall meeting.
- 2) Meet with your mentor to go over the items below. Address areas A through G. Fill the form with your mentor.

Mentor:

- 1) Meet with your trainee and discuss the relevant sections of this form. Provide comments for areas A, B, C, D, and G.

A. Your research and professional accomplishments since the last review

List your achievements and highlight those of which you are particularly proud.

B. Your research project

In a few words, outline the long-term goal of your project.

What are your research goals for the coming months? How will you accomplish these goals? Be specific and give a timeline. What aspect are you most excited about?

Do you anticipate serious challenges in meeting your short-term project goals? *What can your advisor or the program do to help reduce barriers to progress?*

C. Graduation and career goals

What are your long-term career goals?

In addition to carrying out your project, what are your professional goals for the next six to twelve months? For example, are you planning on attending a scientific meeting, taking a professional development course, or interning (see opportunities at <http://www.jhu.edu/~pdo/>)?

When do you hope to graduate? If you are close to graduation, what do you need to accomplish to graduate?

D. Mentoring

Name two things (or more) that your mentor could do better that would help you.

Name two things (or more) that you, as a trainee, could do better.

E. Responsible conduct of research (RCR) training

List up to four useful pieces of information that you learned during your latest RCR refresher.

Suggest topics for additional discussion.

F Rigor and reproducibility (R&R) training

Explain how you have incorporated R&R training in your work since your last thesis review.

G. Comments

Include any comment you may have about how the program can better help you achieve your goals.

Use this worksheet with your advisor to reflect on various areas relevant to your career goals. For example, flag the items for which you feel well prepared with (+) and those for which you would like to improve with (-). Mark with (h) those for which you would like additional help. There is no need to address every category.

Area	Student's flag	Advisor's flag
Research/Scholarship		
Broad knowledge of discipline		
Key methods of discipline		
Critical reading and analysis of literature of field		
Analytic skills		
Creativity and innovation in thinking		
Writing		
For a scholarly publication		
For a lay audience, the media, or practitioners		
Grammar/structure		
Oral communications		
To a specialized or technical audience		
To a lay audience, the media, or practitioners		
In a classroom setting		
One on one		
Leadership/Management		
Providing constructive feedback		
Leading and motivating others		
Advocating for change		
Professionalism/interpersonal		
Identifying the need for and seeking advice		
Upholding commitments/meeting deadlines		
Maintaining positive relationships		
Approaching difficult conversations		
Demonstrating workplace etiquette		
Networking		
Establishing a professional identity		
Project management		
Prioritizing work		
Planning projects, breaking into parts, setting timelines		
Time management		
Managing data and other resources		
Bringing a project to completion		
Teaching/grading		
Course planning		
Lecture delivery		
Leading seminars/discussions		
Active learning strategies		
Timely completion of assignments		
Career Advancement		
Developing/maintaining a professional network		
Writing a job letter		
Interviewing skills		
Preparing a job talk		
Negotiating salary and other job elements		

Individual Development Report

Bring the completed form to your TAC meeting (see instructions). At the end of the meeting, schedule your next TAC meeting with your committee members unless you are certain to graduate within the next 4 months.

Name		Date of Meeting	
Arrival date in the lab		Year of Study	
Anticipated graduation month/year			
Anticipated date of next meeting*			

A. Your research and professional accomplishments since the last review

B. Your research project

C. Graduation and career goals

D. Mentoring

E. Responsible conduct of research (RCR) training

F Rigor and reproducibility (R&R) training

G. Comments

Use additional page as necessary.