

Student Guide

(updated 1/2017)

Department of Biochemistry and Molecular Biology PhD Training Program



www.jhu-bmb-phd.org

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INTRODUCTION

The goals of the Department of Biochemistry and Molecular Biology (BMB) are to increase current knowledge of the biochemical and molecular basis of normal and abnormal cellular processes relevant to public health and medicine, and to train highly qualified scientists who, through research, teaching, and service will continue to provide new insights into the biochemical, molecular, and biophysical underpinnings of biomedical issues that have an impact on the health of the public.

Research activities in BMB span a broad range of topics including DNA replication and repair pathways (genome integrity), cellular stress responses, reproductive biology, stem cells, cell differentiation, aging, cancer, and chronic diseases. The department is also home to a structural biology technological platform with ongoing efforts focusing on cell signaling and genome integrity.

PhD PROGRAM REQUIREMENTS

Required Coursework

All Ph.D. students in BMB have a common core curriculum during their first and second years as outlined in Table 1. Students who are funded through our National Cancer Institute training grant in their second year and beyond are also required to take Fundamentals of Cancer: Cause to Cure (ME.510.706) offered by the Sydney Kimmel Comprehensive Cancer Center. During their first year students spend about one-half of their time conducting bench research by completing four laboratory rotations. At the end of the fourth rotation, students choose their thesis advisor. In consultation with their advisor, all students are required to write a research proposal based on their thesis project and defend this proposal no later than October 15th of their second year (see details on page 5 and Appendix II). In addition all students are required to take a University administered Preliminary Oral Examination no later than April 30 of their second year. The thesis proposal and Preliminary Oral Examination are described in more detail below.

A rich array of seminar programs and journal clubs are available to all students. Students may also elect, in consultation with their thesis advisor, to take additional coursework in their chosen area of interest. In addition to registering for required coursework, students also register for thesis research once they have chosen a thesis advisor.

All students, regardless of year, must regularly attend the weekly Biochemistry and Molecular Biology Seminar Series given on Mondays at noon throughout the academic year and the annual BMB Retreat. Students who have completed their first year of study are also required to participate in the weekly journal club and attend the monthly BMB Colloquium series each academic year.

Table 1. Course Requirements for BMB Ph.D. Students**Year 1:**

1 st term	Macromolecular Structure and Analysis	ME.100.709
	Biochemical and Biophysical Principles	ME.100.710
	Biochemical Techniques (laboratory rotations)	PH.120.850
	Current Research Literature	PH.120.852
	Current Topics in BMB	PH.120.872
	Special Studies and Research/BMB	PH.120.840
	Academic and Research Ethics	PH.550.860
2 nd term	Molecular Biology and Genomics	ME.260.709
	Genetics	ME.260.708
	Computational Biology and Bioinformatics (taken either year 1 or 2 at student's discretion)	ME.800.707
	Organic Mechanisms in Biology	ME.330.709
	Biochemical Techniques (lab rotations)	PH.120.850
	Special Studies and Research/BMB	PH.120.840
	Current Research Literature	PH.120.852
3 rd term	Cell Structure and Dynamics	ME.110.728
	Pathways and Regulation	ME.360.728
	Biochemical Techniques (laboratory rotations)	PH.120.850
	Special Studies & Research/ BMB	PH.120.840
	Current Research Literature	PH.120.852
4 th term	Cancer Biology	PH.120.624
	Biochemical Techniques (laboratory rotations)	PH.120.850
	Special Studies & Research/BMB	PH.120.840
	Current Research Literature*	PH.120.852

Year 2:

1 st term	Special Studies & Research/BMB	PH.120.840
	Thesis Research	PH.120.820
	Responsible Conduct of Research	PH.550.600
2 nd term	Special Studies & Research/BMB	PH.120.840
	Thesis Research	PH.120.820
	Public Health Perspectives on Research	PH.550.865
3 rd term	Special Studies & Research/BMB	PH.120.840
	Thesis Research	PH.120.820
4 th term	Special Studies & Research/BMB	PH.120.840
	Thesis Research	PH.120.820

Notes: Courses designated ME are offered by the School of Medicine and those designated PH are offered by the Bloomberg School of Public Health.

Special Studies and Research/BMB = Monday Departmental Seminar Series

*Current Research Literature 4th term = Thesis proposal writing workshop

Additional requirements:

- Three (3) credits of a course in Epidemiology – Practical Epidemiology for Basic Scientists (PH.340.688.01 – offered in the 4th term).
- Six (6) credits of course work outside BMB but within BSPH. **Note: PH.500 series courses do not count toward this requirement.**

Laboratory Rotations

All first year students in the Ph.D. program are required to carry out four laboratory rotations. Each rotation lasts eight weeks. The purpose of these rotations is to familiarize the student with research activities in the department and to allow the student to make an informed decision in choosing a thesis advisor. Each rotation will be assigned by the department with input from the student, as follows:

- For the first rotation, students will receive a list during the summer of laboratories available for rotations. After receiving this list, students will provide the Academic Program Coordinator, Shannon Gaston, with the names of three labs for possible rotation assignment. Assignments will be made by the department's Curriculum Committee.
- For the second through fourth rotations, students are required to meet with available faculty and discuss possible rotations during the two weeks prior to the end of their current rotation. Following these discussions, students will provide the Academic Program Coordinator with the names of three labs for possible rotation assignment. This list must be submitted one week prior to the end of the current rotation. Rotation assignments will be determined by the Curriculum Committee and communicated to the students.

Students are allowed to rotate only once in any given lab. Normally, the rotations will be distributed so there is only one rotation student per laboratory. This rule may be waived if a given class is particularly large or if there are unusual circumstances. To assist students in rotation choices, the department offers a one-credit course entitled "Current Topics in BMB" held twice a week (12:00-1:00 PM) early on in the academic year, in which training faculty describe his/her ongoing research.

Upon beginning a rotation the student will be given a research project. The student is expected to acquire the necessary background information to carry out the project. In carrying out the project, the student can expect assistance as required from the faculty heading the lab and his/her trainees.

At the end of the rotation, first year students present a report on their rotation project before the faculty and other interested parties. Each student will write a brief abstract describing the project and the results obtained, and then give an oral presentation lasting 10 minutes. A five-minute question period follows each oral presentation. Each student is also required to complete a rotation self-evaluation form at the end of each rotation (Appendix I). The completed form should be discussed in person with the faculty host who will provide his/her own assessment of the student's understanding of the project, effort, interest and technical abilities in carrying out the project. The faculty's assessment, including an overall rating for the rotation, will be documented on the final page of the form. **The signed form will be returned**

to, and briefly discussed with, the Program Director, Dr. Matunis.

Satisfactory Academic Progress and Laboratory Rotation Performance

- Students must receive a grade of B or better in each of the eight core (ME) courses listed in Table 1 and in Genome Integrity and Cancer. Accumulation of two or more C's or lower in these courses is grounds for dismissal from the program. If a student receives a C or lower grade in any of these nine courses, he or she must repeat the course and receive a B or better grade the second time.
- The University requires Ph.D. candidates to achieve a final GPA of 3.0 or higher for graduation.
- Students must also receive satisfactory evaluations for each of the four laboratory rotations. Two or more "poor" evaluations is grounds for dismissal from the program
- Academic progress and laboratory rotation performances will be evaluated by a faculty committee in mid-April, prior to the completion of the 4th rotation. Students who have met both academic and laboratory rotation standards will be notified and permitted to select a laboratory for thesis research. Students who have not met these standards may be dismissed from the program.

Selecting a Thesis Advisor

As a general policy, the department prefers that only one student enter a given laboratory in any one year. Exceptions to this policy are made when circumstances warrant. Students will be provided in late March/early April with a list of labs that are open for thesis studies. Students are required to meet with possible thesis lab advisors during the two weeks prior to the end of the fourth rotation. Following these meetings, students will provide the Academic Program Coordinator with the names of three labs for possible thesis studies, listed in order of preference. This list must be submitted one week prior to the end of the fourth rotation. Students are required to meet and discuss thesis lab choices with the Program Director, Dr. Matunis, during the last week of the final rotation. Thesis lab placements will then be formalized between the student and lab heads following discussions with the Program Director. Every effort will be made to give students their first choice of thesis research lab.

Thesis Proposal/Oral Exam

Students must successfully pass one departmental examination (step 1; beginning of year 2) and one oral examination practice session (step 2; beginning of year 3) before they are permitted to take the Preliminary Oral Exam of the University (early in year 3; cf. next section). The first of these steps, the departmental examination, is a two-part written/oral exam that must be based on the student's doctoral thesis project. Students are asked to write a six page research proposal that follows the format of a NIH F31 fellowship. This proposal shall be written with close guidance from the thesis advisor in early fall of the second year. The completed proposal will be submitted by the first week of October of the second year to a committee consisting of the student's thesis advisor and two other JHU faculty members that may be within or outside of BMB. The student must present the research proposal and defend the rationale and experimental plan during an oral exam that must take place before October 15th of the second year. The committee will provide instructive feedback and recommended changes for a revised written proposal that the student submits by November 15th. Once the revised proposal is approved by the committee, the student has passed the departmental written and oral exam requirement. Full details of the process are provided in Appendix II. Additionally, detailed instructions on how to develop and write the research proposal shall be disseminated as part of the Current Research Literature class taken in the 4th quarter.

Preparation for Preliminary Oral Exam

Students are required to take a university administered Preliminary Oral Exam (described below). In preparation for this exam, students are required to schedule an oral examination practice session within 4 months of completing their Thesis Proposal/ Oral exam. This practice session should be held no later than 1 month prior to the Preliminary Oral Examination. The purpose of the practice session is to help assess exam readiness. The student will select a committee consisting of his or her Ph.D. thesis advisor and five peers. These five peers should be pre-doctoral students who have already taken and passed their oral exam, and/or postdoctoral students. No more than two of the peers can be from the student's own laboratory. Scientific diversity is highly encouraged. The role of the advisor is to ensure that the practice session emulates the official Preliminary Oral Examination mandated by the university, and to provide feedback and guidance to the student for the final stages of his/her preparation. A form (available from the BMB academic office) attesting that the practice session has taken place must be signed and dated by the members of the committee, including the student's advisor, and filed with the department's academic office. The student is allowed to finalize the faculty panel and schedule the Preliminary Oral Examination prior to the oral examination practice session. However, the latter must be completed before the official examination.

Preliminary Oral Examination

The Preliminary Oral Examination is a University-administered examination that is designed to test the student's breadth and depth of knowledge in his or her area of study. Students must pass this examination to officially become candidates for the Ph.D. degree. The examining committee must:

1. consist of at least five voting members, no more than three of whom may be from the department sponsoring the candidate; **the student's thesis advisor will not be a member of the examining committee;**
2. be comprised of duly appointed faculty members of Johns Hopkins University departments and must hold, at the time of selection, an appointment at the rank of Assistant Professor, Assistant Research Professor or Assistant Public Health Professor or higher;
3. be comprised of three departments of Johns Hopkins University, two being from the Bloomberg School of Public Health; and
4. include a faculty member outside of BMB who has a rank of Associate or Full Professor, Research Professor or Public Health Professor; there must be at least one member who has neither a primary nor joint appointment in BMB.

The Chair of the committee is appointed by the Senior Associate Dean for Graduate Affairs. The senior faculty member outside of the student's department will normally serve as Chair, and must hold the rank of Associate or Full Professor. One adjunct faculty member or Scientist track faculty member may serve on the Committee, but may not serve as Chair. Once a Ph.D. candidate's Examination Committee has been approved by the Office of Academic Affairs, substitution of Committee members may not be made without prior approval of that office. Students are encouraged to select their committee members and two alternates in consultation with their thesis advisor. Forms must be completed at least one month prior to the exam and submitted to the office of Academic Affairs.

Students then meet with their committee to take the oral exam. During the oral examination, each faculty member of the committee is given an opportunity to ask questions designed to probe the student's understanding of the basic principles of biochemistry and molecular biology. The examination has three possible outcomes: unconditional pass; conditional pass; or failure. In cases of conditional pass, students may be required to take additional coursework, or write an essay, in order to remove the condition. If the

student fails the Preliminary Oral Examination and is permitted a re-examination, he/she must be re-examined within one year. **The Preliminary Oral Examination should be completed by April 30th of the second academic year.**

Thesis Advisory Committee

Upon successfully completing the Preliminary Oral Examination, a Thesis Advisory Committee is formed to monitor the student's progress of his/her thesis research. The committee consists of at least three faculty members (typically four) including the student's thesis advisor. Members of the committee may have primary appointments in BMB or in other departments of the university. Students are encouraged to select members of their committee in consultation with their thesis advisor. In addition to regularly scheduled meetings with their Thesis Advisory Committees, students are also encouraged to consult with their committee members for advice as necessary.

Students are required to meet with their Thesis Advisory Committees at least once each year, beginning from the time that they select a thesis lab in April. Thesis committee meetings will be conducted using the following format:

1. Students will designate one committee member as the chair – this should be the most senior departmental faculty member on the committee, excluding the thesis advisor. If the thesis advisor is the only departmental faculty member on the committee, the chair should be the most senior faculty member from outside of the department.
2. The student “Annual Thesis Committee Meeting Form” (Appendix III) will be completed and mailed to all committee members at least one day in advance of the meeting.
3. The meeting begins with the student stepping out of the room, allowing for a private discussion by the committee members.
4. The meeting proceeds with the student presenting research progress and any other relevant information related to meeting individual development plans and progress toward graduation.
5. Following completion of the student presentation, the committee chair will lead a discussion that summarizes the committee's views on student progress and recommendations for continued success. Specific points in the committee's “Annual Thesis Committee Meeting Form” (Appendix IV) will also be discussed and the form will be completed by the chair and signed by all committee members before the end of the meeting. The student will retain a copy of the form and return a copy to Shannon Gaston.
6. The meeting concludes with the thesis advisor stepping out the room, allowing for a private discussion between the student and all other committee members.

Individual Development Plans

After joining a thesis research laboratory, all predoctoral trainees and their preceptors are required to participate in an Individual Development Plan (IDP) process on an annual basis. The form being used for this purpose is provided in Appendix V. As part of this process, trainees and their mentor discuss the following elements during a confidential, face-to-face meeting set up specifically for the IDP purpose: i) career goals; ii) assessment of relevant skills, ranging from proficiency at the lab bench to knowledge of

the literature, oral presentation, writing, leadership, collegiality, etc., as they relate to these goals; iii) list the achievements of the last year; iv) set specific goals relating to productivity, training, and professional development for the upcoming year; and v) discuss time to graduation and preparation for post-graduation professional life. Completed IDP forms are to be sent to the IDP program director, Dr. Daniella Drummond-Barbosa.

Thesis Preparation

Once a target date for completion of the thesis project has been set by the Thesis Advisory Committee, the student should begin preparing to write his or her thesis. The thesis must consist of novel and publishable results, and may contain material that has already been published by the student during the course of the thesis project.

The thesis will be evaluated by a Thesis Committee composed of four readers that include the student's thesis advisor. Two committee members must have a primary faculty appointment in a department other than BMB. The readers should have a rank of Assistant Professor or higher. A minimum of three departments of Johns Hopkins University, two from the School of Public Health, must be represented. Two readers must be primarily affiliated with BMB. At least one member must have neither a primary nor joint appointment in BMB. The committee may be increased to five members, provided that the above conditions are satisfied for four readers.

The committee and the required Final Oral Examination Form must be submitted to the BMB Academic Office at least one month prior to the date of the thesis defense. The thesis, accompanied by a letter from the student's advisor signifying that the thesis is ready for distribution to the committee, should be submitted to the Thesis Committee at least two weeks prior to the thesis defense.

Thesis Defense

The thesis defense consists of a seminar in which the student presents some or all of the findings of his or her thesis project. This seminar, which is sponsored by BMB, is open to the public. Immediately after the seminar, the student will meet privately with the Thesis Committee. The Committee will ask questions about the thesis and will inform the student if the thesis is satisfactory. Ultimately, the student will submit the thesis to the Registrar. Thesis fees are the responsibility of the student, unless his or her mentor agrees to pay them.

Table 2. Summary of program milestones and completion dates

Ph.D. Program Milestones

Completion Dates

Laboratory rotations (year one)	(Specific dates vary) 1 st : September/October 2 nd : November/December 3 rd : January/February 4 th : March/April
Thesis lab selection (year one)	April 15
Thesis proposal / oral exam (year two)	Oral defense: October 15 Revised proposal: November 15
Departmental practice POE (year two)	Before March 31
University POE (year two)	Before April 30 (within one month of departmental practice POE)
Thesis Advisory Committee Meetings (years three to completion)	Annual
Individual Development Plans (year two to completion)	Annual
Thesis defense	To be determined / Maximum of 7 years

Competencies

A table showing the academic competencies that Ph.D. students in the department are expected to obtain prior to graduation is available at my.jhsph.edu/sites/BMB.

Laboratory Notebooks

While different laboratories may use different kinds of physical (or online) notebooks, all share certain fundamentals. A proper laboratory notebook is an accurate, contemporaneous, permanent, and legible record of the student's deeds and thoughts regarding his or her research project. This notebook is the property of the laboratory and should not leave the laboratory, though students are free to make and take copies. The student's notebook will be consulted by others to establish what the student did, and to find out how he or she did it, often long after the student has gone. So, if a student has not developed good record-keeping habits, this is an excellent time to begin. Consult the faculty preceptors for guidance and please refer to the Bloomberg School of Public Health Student Handbook (www.jhsph.edu/student_affairs) for Policy and Procedures on the subject of Academic Ethics.

Residency Requirements and Time Limitations

In accordance with Johns Hopkins University policy, a minimum of four consecutive terms of registration as a full-time student is required. Experience indicates that a minimum of four and one-half years is necessary to fulfill all Ph.D. requirements and that the average student requires about five to six years. Not more than seven years may elapse between the date of matriculation and fulfillment of all requirements for the degree.

Withdrawal from Program

If a student withdraws from the Ph.D. program prior to completion of his or her degree, whether for personal or academic reasons, tuition and stipend support will be provided by the department for the remainder of the term during which the decision to withdraw is made. The department may opt to deviate from this policy depending on the particular circumstances.

Vacation

The department considers graduate education, research and training to be a full-time, 12-month-per-year undertaking. It is the policy of the Department that graduate students are permitted two weeks of vacation annually, on average, in addition to the week between Christmas and New Year's Day. Only in exceptional circumstances will a student be permitted to take a vacation of more than one month's duration. Students should not make vacation plans without consulting with their thesis advisors.

Sick Leave/Leave of Absence

Where feasible, it is the responsibility of students who are ill to inform their thesis advisors of their situation. With proper documentation, a leave of absence may be granted to an individual student who faces a difficult illness or personal problem. A request for a Leave of Absence must be submitted to the department chair through the BMB academic office. The chair may elect to consult with department faculty before coming to a decision. Every effort will be made to maintain confidentiality about the student's situation.

Parental Leave Policy for Graduate Students and Postdoctoral Fellows

Graduate students and postdoctoral fellows at the Johns Hopkins Bloomberg School of Public Health shall receive 30 calendar days of paid parental leave following the adoption or birth of a child. Additional *unpaid* leave may be granted at the discretion of the advisor. Parental leave applies to either parent. If both parents are graduate students and/or postdoctoral fellows in the same school, both may request simultaneous parental leave. Complete details regarding this policy can be found in the Bloomberg School of Public Health Student Handbook at www.jhsph.edu/student_affairs.

STUDENT FUNDING

Tuition and Fees

The department provides full tuition and fee support for all Ph.D. students.

Health Insurance

All full-time and foreign students are required to be enrolled in a qualified health insurance plan. At the time of registration, students must provide written proof of enrollment in a plan that meets standard guidelines in the State of Maryland. For those students who do not have existing health insurance coverage, the Bloomberg School of Public Health offers the Student Health Plan (SPH). The Department provides full support for individual enrollment in SHP. The department also supports the required UHS Clinic Fee and (optional) individual dental coverage (Access Plan). For more information on health insurance, please see the Bloomberg School of Public Health Student Handbook (www.jhsph.edu/student_affairs).

Stipends, Salaries and Income Taxes

During their first year, Ph.D. students will receive stipend support from departmental (non-sponsored) funds. After the first year, Ph.D. students may receive stipend support from an institutional training grant, salary support from a research grant, or a combination of both. In keeping with federal guidelines, stipend (scholarship/fellowship) income is not taxed by Johns Hopkins University, although it is likely to be taxable income. Salary to graduate students from research grants is taxed, although these wages are not subject to Social Security or Medicare tax (FICA).

Stipend recipients should investigate making federal and state estimated tax payments. All students should use their December 31 pay stub as documentation of compensation for tax purposes, as forms W-2 and 1099 will not include stipend payments. Pay stubs may be viewed and printed by clicking on the “MyPayroll” icon at my.jhu.edu.

Visit the IRS website at www.irs.gov to obtain form 1040ES, regarding Federal estimated tax payments. Student Tax Issues are addressed in IRS Publication 4. Visit Maryland's website (www.comp.state.md.us) to receive form 502D for Maryland estimated tax payments. Assistance may also be obtained from the JHU Tax Office (Eastern Campus) at 443-997-8442, or by emailing tax@jhu.edu. Consultation with a personal tax advisor is encouraged.

Taxation of Nonresident Aliens: Nonresident aliens are usually taxed on earnings received while living in the United States. Generally, nonresident aliens (F-1 and J-1) are exempt from FICA (Social Security tax). If the Visa type is F-1 or J-1, the student may be exempt from Federal taxes only if the country

where the student lived before arriving in the US has negotiated an income tax treaty with the United States government. The country in which the student was born is not a deciding factor. If the country of residence has negotiated an income tax treaty, and it covers the type of payment the student is receiving while visiting the United States, the student should complete Form 8233 for earned wages or Form W-8BEN for scholarship/fellowship payments. These forms must be completed each calendar year so that Federal tax is not withheld. State taxes must be withheld on wage payments paid by the University. Forms are available at the JHU Tax Office website at finance.jhu.edu/depts/tax/taxforms.htm. At year-end, the University issues to nonresident aliens either a Form 1042-S or Form W-2, or both, which summarizes income. Nonresident aliens are required to complete federal form 1040NR to report and pay taxes, if appropriate, on any income. An excellent guide to Nonresident Alien taxation is IRS Publication 519, available from the IRS web site (www.irs.gov).

NOTE: The department cannot provide individual tax advice to students. All tax-related questions should be directed to the JHU Tax Office at (443) 997-8442 (finance.jhu.edu/depts/tax.) The office is located at the Eastern Campus at 1101 East 33rd Street. To assist international students, the Office of International Students, Faculty, and Staff Services, in cooperation with the JHU Tax Office, conducts tax seminars in March of each year.

Training Grants

Most eligible students are supported by training grants in their second year, and some students may be supported by training grants for multiple years. Over the course of his/her studies, each student may remain on the same training grant, be moved to a different training grant, or be moved to a faculty research grant. Appointment to a training grant will be based, in part, on the student's intended research interests. The department currently has trainee slots on one NIH funded Institutional Research Service Award (training grant) listed below:

Training in Areas Fundamental to Cancer Research
Dr. Pierre Coulombe and Dr. Michael Matunis (Co-PIs)
National Cancer Institute (NIH)

Training Grant Requirements

All students supported by NIH training grants are subject to the following requirements:

- Complete an online Statement of Appointment annually.
- Provide annual reports on the progress of his or her doctoral studies.
- Acknowledge the training grant in all publications resulting from his or her doctoral studies.
- Complete an online Notice of Termination upon termination of training grant support.

Course Requirement specific to the NCI-funded Training Grant

Cancer Training Grant: Training in Areas Fundamental to Cancer Research

- Fundamentals of Cancer (ME.510.706 – 1st and 2nd terms)

RESPONSIBLE CONDUCT OF RESEARCH

All research students must complete courses in the responsible conduct of research before graduation. Currently, the online course *Academic and Research Ethics* (PH. 550.860) must be completed by all students during the first term of matriculation. Students must also take the course *Responsible Conduct in Research* (PH.550.600), in the 1st term of their second year. Students should refer to the Bloomberg School of Public Health Student Handbook (www.jhsph.edu/student_affairs) for Policy and Procedures on the subject of Academic Ethics.

ADMINISTRATIVE ISSUES

Human and Animal Subjects

Before beginning contact with either human or animal subjects, students (as all researchers) must obtain the appropriate approval for their projects from either an Institutional Review Board or the Institutional Animal Care and Use Committee. In both cases, the student's faculty mentor must be involved in this process, since the protocol for the research project is submitted under the advisor's name with the student listed as a student investigator. It is important to remember that NO contact can be made with humans, human tissue, human samples or human records without prior approval.

Students intending to work with human subjects should contact Kear Wright for information on required training and procedures.

Students working with animals must complete an online training course located at web.jhu.edu/animalcare/training. Animal protocols will not be approved or renewed unless individuals working with animals complete this training. It is also mandatory that all individuals working with animals at Johns Hopkins University enroll in the Animal Exposure Surveillance Program. The program is designed to prevent occupation-related disease among those working with animals. Enrollment consists of the completion of an AESP form at www.hopkinsmedicine.org/hse/forms/AESP.

Classroom/Conference Room Scheduling

Rooms W8504, E8015, W8503A and E3130 are available for lab meetings, journal clubs, student exams, and other gatherings. Calendars are maintained online and can be accessed by logging onto the BMB Team Site at my.jhsph.edu/sites/bmb. Erika Vaitekunas can also provide assistance with scheduling when needed. When a room is scheduled for a student exam, please notify Shannon Gaston.

Computer Lab

The Department Computer Lab is located on the 8th floor in Room W8013. Use of the equipment in this room is limited to BMB Ph.D. students, postdoctoral fellows and faculty. Because this facility is costly to maintain, use of computers and printers for personal reasons should be kept to a minimum. The Sharp multipurpose machine (printer/copier/scanner) in the Computer Lab is set by default to print double-sided, in black and white. Single-sided and/or color printing may be selected in situations where it is *scientifically essential*. Please do not hesitate to approach unfamiliar individuals using the facility. If the individual is not affiliated with BMB, advise him or her that Information Systems has computing labs on the third floor and wireless network devices located throughout the Bloomberg School of Public Health.

Copying

Ph.D. students' ID badges are coded to allow access to all copiers in the School that are equipped with the Pharos scanner system. The Sharp machine in the Computer Lab and BMB's main copier, in room W8034, are both on this system. Students should see Erika Vaitekunas for access or questions.

Demographic Data

Any changes regarding one's personal status, home address and phone numbers, etc. should be changed through ESS (Employee Self Service) at my.jhu.edu (MyHR link) so all payroll and online systems can be updated automatically. A forwarding address is required upon graduation or departure from the department. The department's NIH training grants require that we document professional careers of our graduates for a 10-year period following their departure from JHU. Therefore, the Department asks that student alumni keep us informed each time there is a change in their contact information or employment situation.

Facilities Management

Problems with facilities (lights, leaks, etc.) and/or laboratory equipment should be reported immediately to the student's mentor or to Erika Vaitekunas in the Administration Office.

Student Assistance Program (SAP)

This program provides support to students in dealing with the pressures and problems they encounter during their academic careers. SAP services are private and confidential, in accordance with state/federal laws and University policies. There is no cost to a student for utilizing SAP services. For more information please call 410-955-1220, 443-997-3800 or visit the SAP website at www.fasap.org. Also see the Bloomberg School of Public Health Handbook at www.jhsph.edu/student_affairs.

Fire Alarms

All occupants must shut the door to their lab or office and exit the building immediately whenever a fire alarm sounds. For more information on Safety Regulations and Emergency situations, please see the Bloomberg School of Public Health Handbook (www.jhsph.edu/student_affairs).

Foreign Students: Visa Applications and Other Issues

Foreign students are required to report to the Office of International Services located in Reed Hall (1620 McElderry St.) on the first day of arrival in the U.S. They should bring their visa and I-94. During the student's tenure in the department, all visa extensions and other issues pertaining to visa status are handled by Charlene Camponeschi, our payroll/HR coordinator, in cooperation with the OIS. A student's I-9 (employment eligibility) form must also be updated whenever there is a change in his/her visa status. International students are encouraged to visit the Office of International Services web site at www.hopkinsmedicine.org/intlsvcs. This site also provides a link to the JHMI International Society. OIS can be reached by phone at 5-3371.

JHED

The Johns Hopkins Enterprise Directory is an on-line source of address, telephone, e-mail and other contact information for faculty, staff and students throughout the Johns Hopkins University. Incoming

students' information is pulled into the directory from the Registrar and Payroll databases. It is imperative that students maintain current information in JHED since other resources depend on the directory information. To verify and update information, log on to my.jhu.edu. First time users will be prompted to create his/her own password. The JHED user ID and password will be required to access other secure online JHU systems.

Laptop and LCD projector

The department has two Dell laptops and LCD projectors available for lab meetings, journal clubs, student exams, etc. Online calendars are available at BMB's Team Site at my.jhsph.edu/dept/bmb. Erika Vaitekunas can also provide assistance if needed.

Pay Dates and Check Distribution

Students are paid semi-monthly (the 15th and the last day of the month) for effort through that date (no lag). Should a payday fall on a weekend or holiday, funds will be distributed on the previous day. Students are encouraged to sign up for direct deposit; please see Charlene Camponeschi for more details. All paper checks are delivered to Charlene Camponeschi for pick up. You will be notified when your paycheck arrives. If your check is not picked up within 48 hours, we will mail the check to the address on record. Direct deposit stubs can be viewed at my.jhu.edu (MyPayroll link) - paper stubs are not distributed.

Radiation Safety

Radiation safety training will be arranged for all 1st year Ph.D. students during their first term. Badges to monitor external radiation exposure will be issued to students upon completion of the training and on a quarterly basis thereafter. When a student receives a new radiation badge, he or she should return the previous badge promptly to Erika Vaitekunas.

Registration

Students are required to register online at isis.jhu.edu. Students are expected to have their registration approved in advance by their advisors. Specific course information will be distributed in August and again in December.

Lab Safety

The Johns Hopkins University Safety Policy and Procedure Manual is available online at www.Hopkinsmedicine.org/hse. All students must understand that it is their responsibility to comply with appropriate safety and health standards as issued by the department and university. Unsafe conditions should be reported immediately to the student's faculty mentor or to Kear Wright, department administrator.

The Office of Health, Safety and Environmental Health (HSE) has the responsibility of providing guidance and direction in all phases of the safety program. It conducts annual safety and environmental inspections of our laboratories and facilities, advising administration of unsafe conditions or non-compliance with federal and state regulations.

DEPARTMENTAL ACTIVITIES

Departmental Retreat

The departmental retreat is usually held in late March or early April. Attendance is required by all PhD students, postdoctoral fellows and faculty. This retreat allows faculty and students an opportunity to present, in an informal setting, research accomplishments. Students should contact their faculty advisors for more information regarding the format of the presentations. This is a professional retreat and thus family members are not encouraged to attend. Expenses are fully paid by the department. Details of this retreat are provided in February-March.

Happy Hour

A student-run (by BMB students) social hour is held each Friday from 4:30-6:00 p.m. in the Student Lounge Court. This is open to all in the school. Beer and soft drinks are sold; pretzels and potato chips are free.

BMB Happy

A departmental social hour is held the first Wednesday of each month in the McCollum Reading room. Only open to faculty, staff and students of BMB. Beer is sold for \$1; soft drinks, pretzels and potato chips are free.

Social Events at BMB

A luncheon is held in the first two weeks of the first term to welcome the new incoming students. Refreshments are provided by the department. The department also hosts a holiday party on campus each December. Families, including children, are encouraged to attend the holiday party. Other social activities, such as thesis parties, occur throughout the year and provide opportunities for all members of the department to gather informally.

PhD TRAINING PROGRAM FACULTY PRECEPTORS

An, Steve	Assoc. Prof., Env. Hlth Sci, BSPH	(mechanotransduction in cancer)
Bailey, Scott	Assoc. Prof., BMB, BSPH	(DNA recombination, CRISPR)
Berger, James	Professor, Biophysics, SOM	(genome / anti- γ -cancer agents)
Biswal, Shyam	Professor, Env. Hlth Sci, BSPH	(signaling/ Nrf2 & lung cancer)
Burns, Kathleen	Assoc. Prof, Pathology, SOM	(genome / transposons)
Casero, Robert	Professor, Dept. Oncology, SOM	(genome / chromatin structure)
Caterina, Michael	Professor, Biol. Chem., SOM	(signaling / pain & inflammation)
Cole, Philip	Professor, Pharmacol., SOM	(signaling / kinases / Chem. biol.)
Coulombe, Pierre	Prof. & Chair, BMB, T32 PI	(signaling / skin cancer)
Culotta, Valerie	Professor, BMB, BSPH	(signaling / cellular stress)
Drummond-Barbosa	Professor, BMB, BSPH	(signaling / diet / stem cells)
Evans, Janice	Professor, BMB, BSPH	
Ewald, Andrew	Assoc. Prof., Cell Biology, SOM	(cell biol / cancer metastasis)
Greider, Carol	Professor, Mol. Bio & Gen., SOM	(genome / telomeres)
Groopman, John	Professor, Env. Hlth Sci, BSPH	(chemoprevention, cancer risk)
Jordan, Phillip	Asst. Prof., BMB, BSPH	(meiosis / genome integrity)
Kavran, Jennifer	Asst. Prof., BMB, BSPH	(signaling / growth pathways)
Klein, Sabra	Assoc. Prof., MMI, BSPH	
Laiho, Marikki	Professor, Radiat. Oncol. SOM	(genome / DNA repair & cancer)
Leung, Anthony	Asst. Prof., BMB, BSPH	(miRNAs / protein modifications)
Liu, Jun	Professor, Pharmacol, SOM	(signaling / cancer therapeutics)
Matunis, Michael	Professor, BMB, BSPH	(signaling / protein modifications)
Meeker, Alan	Professor, Pathology, SOM	(telomeres / prostate cancer)
Pienta, Ken	Professor, Oncology, SOM	(signaling / prostate cancer)
Pomerantz, Joel	Assoc. Prof., Biol. Chem., SOM	(signaling / immunology & cancer)
Prigge, Sean	Assoc. Prof., MMI, BSPH	
Sears, Cynthia	Professor, Oncology, SOM	(inflammation / colon cancer)
Sharma, Dipali	Assoc. Prof., Oncology, SOM	(signaling / obesity & cancer risk)
Sinnis, Photini	Professor, MMI, BSPH	
Stivers, Jim	Professor, Pharmacology, SOM	(genome / DNA damage, repair)
Velculescu, Victor	Professor, Oncology, SOM	(signaling / kinase proteomics)
Wan, Fengyi	Asst. Prof., BMB, BSPH	(transcription / inflammation)
Wang, Jiou	Assoc. Prof., BMB, BSPH	(protein homeostasis / stress)
Wills-Karp, Marsha	Prof. & Chair, Env. Hlth Sci, BSPH	

ADMINISTRATION

Charlene Camponeschi	HR/Payroll Service Coordinator	W8507	cwalize1@jhu.edu	7-2726
Kia Castille	Budget Specialist	W8501	kcastille@jhu.edu	7-4759
Shannon Gaston	Sr. Academic Coordinator	W8503	sgaston1@jhu.edu	5-3672
Chandan Prasai	Research Service Analyst	W8501	cprasai@jhmi.edu	5-3769
Erika Vaitekunas	Administrative Coordinator	W8041	erikav@jhu.edu	5-3671
Brandon Wright	Academic Program Assistant	W8503	bwrigh29@jhu.edu	5-9030
Kear Wright	Department Administrator	W8041	kwright@jhu.edu	5-3655

HELPFUL WEB LINKS

www.jhsph.edu/dept/bmb	BMB Web Site
my.jhsph.edu/sites/bmb	BMB Team Site (Intranet)
www.jhsph.edu	School Home Page
www.jhsph.edu/student_affairs	Information for Students (including Student Handbook link)
commprojects.jhsph.edu/courses/	Course Catalog
www.welch.jhu.edu	Welch Medical Library Home Page
www.hopkinsmedicine.org/hse/	Office of Health, Safety and Environment
www.fasap.org	Student Assistance Program
www.hopkinsmedicine.org/intlsvcs/	Office of International Services
my.jhsph.edu/Offices/StudentAffairs/RecordsRegistration/DoctoralCandidateInfo/Pages	Preliminary Oral Exam Form Appointment of Thesis Readers Form Final Exam Form
www.jhsph.edu/GER	Office of the Associate Dean for Graduate Education and Research
www.controller.jhu.edu/depts/tax	JHU Tax Office
www.hopkinsmedicine.org/hse/forms/AESP	Forms – Animal Use
secure.lwservers.net	Online compliance training (Animal Care, Human Subjects, et. al)
my.jhu.edu	Johns Hopkins Enterprise Directory (JHED)
www.hopkinsmedicine.org/hse/radiation.htm	Radiation Safety
isis.jhu.edu	Registration

APPENDICES

Rotation Evaluation Report



**Department of Biochemistry and
Molecular Biology**

1. **Name:**

2. **Date:**

3. **Rotation number:**

1 2 3 4

4. **Laboratory Rotation Advisor:**

5. **Rate your overall performance during this rotation:**

1 2 3 4 5

Exceptional

Poor

6. **Rate your overall ability to manage your time during this rotation:**

1 2 3 4 5

Exceptional

Poor

7. **Rate your time and effort spent working in the lab:**

1 2 3 4 5

Maximum effort

Minimum effort

8. Rate your time and effort spent reading and learning about your project:

1 2 3 4 5

Maximum effort

Minimum effort

9. Rate your understanding of the research problem that you worked on:

1 2 3 4 5

Exceptional

Poor

10. Were you able to make any independent contributions to your project? Explain:
Introduce new ideas? Developed your own experiments? Contributed to data analysis?

11. Rate your ability to learn new scientific techniques and approaches:

1 2 3 4 5

Exceptional

Poor

12. Rate the quality and reproducibility of the data that you produced during your rotation:

1 2 3 4 5

Exceptional

Poor

13. Rate your ability to organize your results:

1 2 3 4 5

Exceptional

Poor

14. Rate the quality and completeness of your lab notebook:

1 2 3 4 5

Exceptional

Poor

15. Rate your ability to interact and work with other lab members:

1 2 3 4 5

Very well

Not so well

16. Rate your ability to interact effectively with the lab head:

1 2 3 4 5

Very well

Not so well

17. Rate your ability to accept constructive criticism:

1 2 3 4 5

Very well

Not so well

18. Rate your time and effort preparing for your rotation report:

1 2 3 4 5

Maximum effort

Minimum effort

19. Rate your rotation report performance:

1 2 3 4 5

Exceptional

Poor

20. **Weaknesses**

From the list above, what skills do you think are the most important for you to improve?

21. **Work environment**

Give examples of things you did during your rotation to contribute to a positive work environment:

22. **Strengths**

Provide examples of some of the skills that you are performing well.

23. **Work environment**

Do you have recommendations for improving the work environment and rotation experience?

24. Mentoring

Interactions with the lab head were:

Just right

Too frequent

Too infrequent

25. Would this be an acceptable lab for your thesis research?

Yes

No

Maybe

26. Other comments:

Rotation Evaluation Report: FACULTY SECTION

Summarize your meeting with the student. Specifically comment on:

(1) Overall performance:

1 2 3 4 5

Exceptional

Poor

(2) At least two areas where the student demonstrated competency in their research efforts.

(3) At least two areas where the student could improve their performance.

(4) Any reservations that you may have about the ability of the student to conduct thesis research in your laboratory.

Faculty Advisor Signature / Date:

Student Signature / Date:

APPENDIX II

THESIS RESEARCH PROPOSAL / ORAL EXAM

In completion of the departmental written and oral exam requirements

All students that matriculated as of fall 2014 must prepare a research proposal that meets the requirements of the “Research Training Plan” section of an NIH F31 grant application. Specific guidelines for preparing this proposal, as detailed in the F31 grant application guide, are attached below. Other specifics and a timeline for completing the proposal and oral exam are as follows:

May – September, year 1: Student works full-time in their chosen thesis lab to generate the preliminary data and ideas for developing a research proposal. The mentor must work closely with the student in defining the research project to pursue. The student and mentor choose a committee of two additional faculty that will act as additional consultants for the student, reviewers of the written proposal and serve as members of an oral examination committee. These faculty members may come from within the BMB department or from outside the department should they provide special expertise in the research area and in writing fellowships. Over the summer the student should schedule the oral exam component of the proposal that should occur within the first two weeks of October (see below).

September – October, Year 2: The student writes the first draft of the proposal. The mentor is expected to play an active role in proposal development and coaching the student to write in a clear, concise, study section-friendly manner. The advisor should not write the proposal but provide guidance and feedback through several drafts. Consultation with other committee members is also encouraged.

October 1st-15th, Year 2: The student submits their proposal to the committee at least one week in advance of the oral exam which must be scheduled no later than October 15th. For this oral exam, the student presents in a chalk talk format, the rationale and experimental sections of the research plan. The committee will test the student’s ability to defend the proposed experiments – is the rationale sufficiently compelling to support the experiments proposed? The committee will also provide guidance as how to re-structure the proposal as needed and improve the research plan.

October 15th – November 15th, year 2: The student prepares a revised version of the proposal that addresses concerns and incorporates suggestions by the committee. The advisor should work closely with the student in assembling this revised application. The revised application must be submitted to the committee no later than November 15th for review. Following approval of this revised application, and satisfactorily completing the oral exam component, the student has officially passed the departmental written and oral exam requirement.

Additional comments: This exercise is designed to help students prepare quality research proposals that can be submitted as fellowship applications for funding considerations. It is expected that a majority (but not all) students will choose to submit their proposals to the NIH and the exam requirement will be completed in time for the December 8th F31 deadline. Other students may choose alternative funding sources, but regardless, the exam requirements remain the same: A minimum 6-page research plan with separate Specific Aims page as outlined below. Students seeking non-NIH funding sources should be able to re-format the proposal as needed to meet the specific agency requirements.

The reviewing committee should be considered as a continual resource for the student. Prior to submitting the fellowship for funding considerations, the student is recommended to solicit feedback from their committee on all aspects of the fellowship application including pages that address selection of sponsor and institution, description of research experience, etc.

Timeline Summary

May-September, yr 1	Define specific aims of the proposal, identify two committee members, generate preliminary data
September-October, yr 2	Prepare first written draft of the proposal
October 1 st -15 th , yr 2	Submit the proposal to examining committee, schedule and complete oral exam
October 15 th – November 15 th	Submit revised proposal for review by the committee

Guidelines for Preparing the Proposal (verbiage taken directly from NIH guidelines)

The Research Training Plan should include sufficient information needed for evaluation of the project, independent of any other document (e.g., previous application). Be specific and informative, and avoid redundancies. This section should be well-formulated and presented in sufficient detail that it can be evaluated for both its research training potential and scientific merit. It is important that it be developed in collaboration with your sponsor, but it should be written by you, the fellowship applicant.

The following page limits apply (All page limits include all tables, graphs, figures, diagrams and charts).

Specific Aims – limited to one page.

Research Strategy – limited to six pages (does **not** include the Bibliography and References Cited section).

Be succinct and remember that there is no requirement to use all six pages allotted to the Research Strategy. Note that the Research Training Plan may include graphic images of gels, micrographs, photographs, etc.; however these images may not be included in an Appendix.

Note: Begin each text section of the Research Training Plan with a section header (e.g., Specific Aims, Research Strategy).

Specific Aims are limited to one page.

State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology.

Research Strategy is limited to six pages.

Organize the Research Strategy in the specified order using the instructions provided below. Start each section with the appropriate section heading — Significance, Innovation, Approach. Cite published experimental details in the Research Strategy section and provide the full reference in the Bibliography and References Cited section (there is not page limit to the Bibliography and References Cited section).

Significance

Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.

Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.

Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

Innovation

Fellowship applications should not include an Innovation section unless specified in the FOA.

Approach

- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Unless addressed separately in Item 14 (Resource Sharing Plan), include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.
- Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
- If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high risk aspects of the proposed work.
- Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised. A full discussion on the use of select agents should appear in Item 15, below.
- If research on Human Embryonic Stem Cells (hESCs) is proposed but an approved cell line from the NIH hESC Registry cannot be identified, provide a strong justification for why an appropriate cell line cannot be chosen from the Registry at this time.

If an applicant has multiple Specific Aims, then the applicant may address Significance, Innovation and Approach for each Specific Aim individually, or may address Significance, Innovation and Approach for all of the Specific Aims collectively.

As applicable, also include the following information as part of the Research Strategy, keeping within the three sections listed above: Significance, Innovation, and Approach.

Preliminary Studies for New Applications.

For new applications, include information on preliminary studies, if any. Discuss the applicant's preliminary studies, data and/or experience pertinent to this application. When applicable, provide a succinct account of published and unpublished results, indicating progress toward their achievement

Annual Thesis Committee Meeting Form (Student)



Department of Biochemistry and Molecular Biology

Project Title

- Student name / PhD training program:
- Meeting date / date of last committee meeting:
- Year in which student entered the program / thesis lab:
- Thesis research advisor:
- Thesis committee members:

Accomplishments since previous committee meeting:

- Publications:
- Presentations:
- Teaching, mentoring and outreach:
- Course work:
- Fellowships submitted:
- Expected graduation date / timeline for completion:

Project Description (1-2 pages)

Introduction:

Summary of past progress:

Summary of current work and future studies:

Annual Thesis Committee Meeting Form (Committee)



Department of Biochemistry and Molecular Biology

Student's name: _____

Date of meeting: _____

Thesis Advisor: _____

Year of study: _____

Committee members in attendance: _____

Please evaluate each of the areas below by circling the appropriate descriptor and also by providing comments where appropriate (to be completed by the student's thesis advisor).

1. Progress since last thesis committee meeting (or qualifying exam if no prior meeting):

Cause for concern to committee Meets Expectations Outstanding

If cause for concern, please explain:

2. Does the student have a publishable story or at least the beginnings of one that could be completed within one year?

Yes Probably Maybe No Too soon to say

3. Should the student consider switching to a new project?

Yes No Too soon to say

Comments: if in doubt please describe additional experiments to assess the viability of the project

4. What specific goals should the student focus on to move the project to its next stage?

High priority experiments:

Investigation of new directions (recommended reading or consultation with outside experts, pursuit of potentially new techniques or approaches, etc.):

Others:

5. Is the student on track to graduating in under 6 years (from date of entry into the program)?

Yes Probably Maybe No Too soon to say

6. When should the student have another committee meeting?

3 months 6 months 9 months 12 months

7. Is the student ready to write his/her thesis and graduate? Does the committee agree with the student's proposed thesis outline and plan for graduation (assuming it was presented)?

Yes, means that it is the last thesis committee meeting and the student is being given permission to write up the dissertation and to schedule a thesis seminar date.

Yes No

If no, please explain:

8. Any other comments:

Advisor's signature: _____

Thesis committee member's signatures:

Appendix V

Individual Development Plan for Doctoral Students

A. Information

Name: _____

PI: _____

Date: _____

PLEASE NOTE: No signatures are required; instead, cc your mentor in the same e-mail sent to me with the attached IDP form.

B. Research Project(s)

- Describe the aims and experimental approaches of your current research project(s).
- What is the significance of your research?

C. Annual Progress Report

- List or briefly describe major research accomplishments this year (do not include publications or presentations here):
- List new techniques/expertise acquired this year:
- List references for publications submitted or published this year. List references for abstracts that were presented at meetings. In each case, underline your name in the author list.
- List your funding source(s) and grants applied for this year. Describe your visa status if appropriate:
- List honor/awards received this year:
- List intellectual and/or technical collaborations established or continued this year:

- List accomplishments this year in other aspects of career development (e.g. teaching, clinical, committees, course work, etc.). Include mentoring of graduate students, undergraduate students, etc. in the laboratory:
- Describe and explain your level of satisfaction with your research progress in the past year?
- Describe and explain your level of satisfaction with other aspects of your career development in the past year?

D. Plans for Up-Coming Year

- Research Project Goals for the up-coming year (be brief):
- What are your plans for improving your scientific writing skills and your oral presentation skills in the up-coming year?
- Anticipated research techniques to learn in the up-coming year:
- Anticipated publications to submit in the up-coming year (indicate projected titles):
- Anticipated meeting and workshop attendance in the up-coming year:
- Fellowship or other funding applications planned for the up-coming year. Describe your plans to alter your visa status if appropriate:
- Anticipated collaborations to establish in the up-coming year:
- Anticipated other professional training for the up-coming year (e.g. teaching, course work, etc.):
- How can your PI help you achieve your goals for the upcoming year? What do you want/need from your PI/mentor?
- [Question for Mentor] How can the graduate student/postdoctoral fellow improve performance and achieve his/her goals for the upcoming year?

E. Career Goals

- What are your short-term career goals? Describe your time line for achieving them?
- What are your long-term career goals? Describe your time line for achieving them?
- In reference to your career goals, what resources can your PI provide or help you find?
- What further research activity or other training is needed before it is appropriate to start a job search/postdoc search?
- When will you begin a job/postdoc search? If you do not know, estimate.