

# **Graduate Student Handbook**

Cell, Molecular, Developmental Biology and  
Biophysics Graduate Program

**The Johns Hopkins University**  
**Baltimore, MD**

This handbook is subject to change and corrections.

**September 1, 2008**

This manual is designed to provide graduate students (and faculty) with information about the policies of the Cell, Molecular, Developmental Biology and Biophysics (CMDDB) graduate training program.

## **TRAINING PROGRAM POLICIES**

The Ph.D. training program has five components: coursework, lab rotations, teaching, a qualifying exam (Graduate Board Oral Exam) and thesis research.

### **A. STUDENT STIPENDS**

All students accepted into the program are provided stipends. During the first year of study, graduate students are guaranteed a 12-month research fellowship (currently set at \$26,855), a scholarship covering the full cost of tuition (currently set at \$37,700) and waiver of the University matriculation fee of \$500 as long as satisfactory academic progress is maintained. Each student is required to maintain health insurance. The Johns Hopkins University student health insurance plan is provided by the program or by the student's research mentor. If the Hopkins plan is not elected, students must sign a waiver indicating that they have outside health insurance comparable to the University plan.

In the second year of study, graduate students are provided a teaching assistantship as long as satisfactory academic progress is maintained.

During the third and subsequent years of study, support will be provided students who passed their graduate board oral exams by the end of their second year and meet annually with their thesis review committees to ensure that normal academic progress is maintained.

Students are encouraged to apply for fellowships from the National Science Foundation and the National Institutes of Health. Any student receiving a fellowship (during the years of Departmental support) will receive a supplement in recognition of their achievement. Applications for these fellowships can be obtained on the appropriate websites:

NSF [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=6201&org=NSF](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201&org=NSF)

NIH <http://grants.nih.gov/grants/guide/pa-files/PA-04-032.html>

FORD FOUNDATION

<http://www7.nationalacademies.org/fordfellowships/fordpredoc.html>

### **B. COURSE WORK**

Our academic program aims to give students a broad training in the modern biological sciences. In the first year, four core courses are offered in molecular biology, cell biology, biophysics, and developmental biology and genetics. The core curriculum covers the

fundamentals in each area at a rigorous, graduate level. They are intended to provide all students with a common ground of discourse and discussion, and a foundation for more advanced scholarship and research in an area of the student's choosing. In addition, a one-semester seminar provides an overview of the research interests, philosophies and practices of the training faculty.

Entering students are required to take a fixed curriculum consisting of six classes during the first year (see descriptions below). Students who have successfully completed the first-year curriculum (with a GPA of 3.0 or higher, calculated cumulatively, and also calculated separately for rotations and for courses) must then take four additional electives during the remainder of their thesis work to fulfill all their course requirements. At least one of these four must be a seminar. A list of current elective classes can be found on the CMDB website. Choices of courses and seminars should be made in consultation with a student's advisor and/or the Director of the CMDB Graduate Program. All electives must be taken during either Fall or Spring semesters. Tuition support is not provided for Summer courses, so costs associated with courses taken during the Summer will be assumed by the student.

If a graduate student wishes to enroll in a course that is not offered by either the Biology or Biophysics Department, or is not listed on the pre-approved electives site, permission must be given in writing by the CMDB Program Director in order for the course to count towards the course requirements for the Ph.D. degree. If the course is not intended to count towards the Ph.D. requirements, permission to enroll must be obtained from either the student's advisor or the CMDB Program Director.

### **REMAINING IN GOOD ACADEMIC STANDING**

Letter grades are given for graduate coursework and will be recorded on the graduate transcript. Students are also evaluated at the end of each rotation period (see evaluation form in the Appendix). Letter grades for performance during the rotation period are assigned by the faculty mentor. Rotations grades count similarly to course grades for calculating GPA and evaluating academic standing. The CMDB Program Director will review the performance of all first year students at the end of the first semester. Any student receiving one grade of C or lower in a course or rotation, or with a combined GPA less than 3.0, will be placed on probation with written notification. Any student who receives two grades of C or lower during the first year, who has a combined GPA less than 3.0, or who fails to otherwise meet the conditions of their probation, may be subject to dismissal from the program.

For students in all years, grades and a list of those requirements that have been met will be available on the program website at the end of each semester. A student may request to see their grades at any time. A grade of B- or better must be obtained in all courses in order to fulfill the requirements for a Ph.D. A student may only retake courses to improve a grade twice. Students must maintain a Grade Point Average of 3.0 to remain in good academic standing. If a student has not attained a 3.0 average in Core CMDB courses by the end of the second year, he/she will not be allowed to take the GBO and will be asked to leave the program. Students must also make satisfactory progress in their thesis research, and in completing other requirements for the Ph.D. degree (e.g. teaching requirements and passing the GBO exam), to

remain in good academic standing. Students who do not meet the above requirements will be placed on probation and may be subject to dismissal from the program.

## **THE FIRST YEAR CORE CURRICULUM**

The six first year courses are described below. A list of approved electives can be found on the CMDDB webpage at [www.jhu.edu/cmdb/](http://www.jhu.edu/cmdb/).

### **1. 020.601 Current Research in Cell, Molecular, Developmental Biology & Biophysics (Fall)**

This course involves 30 minute sessions with each member of the training faculty. It is designed to acquaint incoming graduate students with the research topics and research philosophy of each laboratory. This should help students choose future rotations. More generally the course provides a range of perspectives on the future of specific fields and strategies for success in science. No grades will be given in this pass/fail course, but attendance is mandatory.

### **2. 020.668 Advanced Molecular Biology (Fall)**

Advanced Molecular Biology stresses the basic facts and principles of molecular biology and their application in problem solving and in the design of experiments. Topics covered include nucleic acid structure and synthesis, genetic engineering and important areas of prokaryotic and eukaryotic genetics.

### **3. 020.686 Advanced Cell Biology (Fall)**

Advanced Cell Biology covers a wide range of topics, but in general builds from cellular levels of organization, organelles, membrane traffic and cell division, to consider cell interactions with one-another and with their environment.

### **4. 020.674 Graduate Biophysical Chemistry (Spring)**

Graduate Biophysical Chemistry will provide an overview of protein and nucleic acid structure, fundamentals of thermodynamics and kinetics, ligand binding, folding and stability of macromolecules, and the principles of biophysical methods such as fluorescence spectroscopy, NMR and X-ray crystallography. Students interested in pursuing biophysical research, who have taken undergraduate physical chemistry, may opt to take a two semester series in Molecular Biophysics (250.689-690). Similar topics are covered in the two semester series, but with greater emphasis on mathematical and quantitative analysis. Students wishing to pursue this option should consult with the CMDDB Program Director.

### **5. 020.637 Genomics and Development (Spring)**

Genomics and Development covers the processes of fertilization, cleavage, gastrulation, organogenesis and gametogenesis with emphasis on the molecules involved and how these processes can be studied using molecular genetics.

### **6. 020.699 Responsible Conduct in Research Course (Intersession)**

The Johns Hopkins Departments of Biology, Biophysics, Chemistry and Carnegie Institution are committed to promoting the highest ethical standards among our administration, faculty members, and students. Therefore, all trainees and training faculty are required to attend the discussion series, Responsible Conduct of Research. The two week series meets for 6 two hour sessions and will be offered every January. Graduate students must attend the discussion series during their first year of study.

Science has come under increased scrutiny and scientific misconduct has become a public issue regularly addressed in the media. Against this background of public skepticism, each university must make a visible commitment to responsible conduct of research. We believe

that this is best accomplished by case-based discussions involving both trainees and faculty who are active investigators. In addition to general information, such as *Honor in Science*, participants will be expected to read related handouts sent to them before each session. Copies of the material contained in the suggested reading list will also be available. Through the use of pre/post testing and presentation evaluations, the course will respond to the specific needs of trainees and faculty.

## **The Dates for the MANDATORY Responsible Conduct in Research Class are in the Calendar section of the Appendix**

### **C. ROTATIONS & SELECTION OF RESEARCH ADVISOR**

#### **1. LABORATORY ROTATIONS**

The laboratory rotation system has been designed so that each graduate student may be exposed to a variety of research projects and techniques and also to the research approach of a variety of professors. Rotations should not be viewed only as an opportunity to preview a potential thesis research laboratory, but also as an opportunity to learn interesting and valuable new information. During the first year, students are required to do rotations in at least four different laboratories. (Students may do an additional rotation during the Summer after the first year.) Students should register for each laboratory rotation under a course entitled "Introduction to Research" (020.823-826). To ensure maximal supervision, only one CMDB student may rotate in a lab during each rotation period.

#### **Dates for the four rotation periods are in the Appendix**

Students may do their rotations in the laboratories of any members of the CMDB Training Faculty. This includes many full-time faculty members of the Biology Department, the Carnegie Institution of Washington's Department of Embryology, the Biophysics department, and specific members of the Chemistry Department. Please note that not all faculty of the above departments are CMDB Training Faculty and a complete list of the training faculty can be found on the web at [www.jhu.edu/cmdb/](http://www.jhu.edu/cmdb/) and in the Appendix.

The CMDB Program Director is responsible for rotation assignments. These assignments are based primarily on preferences expressed by the students. Preferences for laboratory rotations should be given to the CMDB Program Director at least four weeks prior to the start of the next rotation. Except for the first rotation, students are **REQUIRED** to contact prospective rotation advisors before submitting their requests to the CMDB Program Director.

One purpose of rotations is to give students an opportunity to sample various labs in which they might want to do their thesis research. Students should pay attention both to the nature of the research in the lab and to the philosophy and organization of the lab. For example, a person who craves a great deal of independence may not be happy in a lab with a great deal of structure and vice versa. Rotations also provide research training and experience. For example, a rotation is good way to learn specific techniques or to become familiar with a particular model system. Students should plan their rotations to their advantage.

Rotation faculty advisors are asked to orally review a student's performance at the end of the rotation, and to submit a written evaluation and grade. Rotations grades count similarly to course grades for calculating a student's GPA and evaluating academic standing. Students are also required to present their rotation project as a short talk at the end of each rotation. All first year students are expected to attend these rotation talks, which are also attended by faculty and other members of the program.

## 2. SELECTION OF RESEARCH ADVISOR

A research advisor is usually chosen at the end of the fourth rotation. To prevent decisions being made prematurely, **no agreements between a faculty member and a student regarding joining a lab for thesis work may be made prior to the end of the last rotation period.** During the final week, students may approach prospective thesis mentors to express interest in thesis work and to discuss potential projects. To formally join a laboratory, written permission from the proposed research advisor is required (see below). This form can be obtained from the Academic Program Coordinator and a copy will be placed in student mailboxes after the last rotation talks are completed. **Only training faculty affiliated with the CMDB program are eligible to be mentors for CMDB students, without exception.**

## D. PARTICIPATION IN CMDB AND DEPARTMENTAL EVENTS

A number of academic activities occur on a regular basis that constitute a large portion of the training experience in the CMDB Graduate Program. Progress Reports, departmental seminars and Colloquia present opportunities for one's horizons to be broadened and to be exposed to a wide array of subjects and experimental approaches. **As a significant adjunct to individual thesis training, student attendance at these activities is mandatory.** In addition, individual labs or groups of investigators with shared interests also have group meetings, journal clubs and other intellectual activities in which a student is expected to participate.

Progress Reports are held in Mudd 100 each Tuesday at noon and involve research talks from students in the CMDB program and postdoctoral fellows in the Biology Department. All CMDB students are required to present a Progress Report each year after their second year (see below). Students are expected to regularly attend the Progress Report talks.

Seminars. The Biology Department (Thursdays at 4PM), Biophysics Department (Mondays at 4PM), Chemistry Department (Wednesdays at 4PM) and Carnegie Institution (Mondays at 12:15PM) each sponsor seminar series which include talks by visitors from other universities. Attendance at seminars is strongly encouraged, and **attending at least one seminar per week is required.** Notices concerning seminars in other departments are located on the bulletin board across from Mudd 100 and on each department's web pages. The schedule can be found on the Biology Department website at [www.bio@jhu.edu](http://www.bio@jhu.edu) or a Hopkins-wide seminar listing can be found at <http://www.hopkinsmedicine.org/scical/>.

Biology Colloquia are held once a month during the academic year. This series involves members of the CMDB Training Faculty. These talks commence at 4:30PM on the first Wednesday of each month (with a few exceptions) and **attendance by CMDB students is required.**

CMDB Program Retreat. During the Fall semester, there is a retreat for all CMDB students along with faculty, postdoctoral fellows, and research associates from the Biology Department, and training faculty from Carnegie, Chemistry, and Biophysics. During the retreat, members of the Training Faculty will present short talks about the research that is currently being conducted

in their laboratories. Graduate students and postdoctoral fellows also present their work at a poster session. In addition to the stimulating science, the retreat offers a chance for CMDB students to become acquainted with training faculty and other members of our scientific community in a relaxed and enjoyable atmosphere. **CMDB students are expected to attend and participate in the retreat during each of their years in the program.**

## E. TEACHING

During the second year of graduate school, each student must teach in one undergraduate-level Biology or Biophysics course (with a corresponding lab course) for each of two semesters. **Students are expected to be serious and conscientious regarding their teaching responsibilities**, as this is an excellent learning experience and is an important aspect of the university's mission. Students who excel in their teaching responsibilities are eligible for departmental teaching awards. Students who do not successfully complete the teaching requirements will be placed on probation and may be subject to dismissal from the program.

Teaching assignments for second year students are made by Dr. Robert Horner ([rdhorner@jhu.edu](mailto:rdhorner@jhu.edu)) (Cell Biology and Biochemistry laboratories) and by Dr. Beatrice Kondo ([bkondo@jhu.edu](mailto:bkondo@jhu.edu)) (Genetics and Developmental Biology laboratories). Drs. Horner and Kondo are also responsible for teaching assistant evaluations in these laboratories. Students are encouraged to communicate any course assignment preferences to Drs. Horner and Kondo.

Teaching assistantships in Biophysics for students beyond the second year will be assigned by Dr. Karen Fleming ([Karen.fleming@jhu.edu](mailto:Karen.fleming@jhu.edu)). Evaluations will be made by individual course instructors. Additional teaching opportunities are available for students beyond their 2nd year. These teaching assistantships for Biology courses are assigned by Cindy Holstein.

## F. GRADUATE BOARD ORAL EXAMINATIONS

The graduate board oral examination is a university-mandated and administered requirement that serves as a qualifying exam for students to advance to candidacy for the Ph.D. degree. It must be taken before the end of the second year of study (i.e. by August 31<sup>st</sup> of that year). In order to be eligible to take the Graduate Board Oral examination (GBO) a student must have a grade point average of 3.0 overall. In addition, a grade of B- or better must be earned in the required courses. (This means that while one or two B- grades will not necessarily doom you, you must in turn have some grades better than a B to satisfy the GPA requirement.) In preparation for the oral examination, students must write a thesis research proposal in the form of an NIH postdoctoral fellowship application. This research proposal should be distributed to the examining committee two weeks before the exam. The oral examination, however, is designed to test the breadth and depth of a student's knowledge and his or her reasoning abilities. The exam is not intended to judge productivity and does not commit one to perform a specific thesis project.

The possible outcomes of a GBO are: unconditional pass, conditional pass, and fail. A conditional pass is given when a student's exam performance indicates weakness in one or more specific areas in which a specific remedy can be identified to correct the weakness (typically writing a paper, taking a course, or giving a seminar). The conditions required by the committee must be successfully completed by the deadline stipulated by the committee, which should be no later than six months after the original exam date (for conditions requiring a longer time frame, such as courses only offered the following spring, the committee can stipulate such a deadline). **When a student is required to take a course to fulfill a GBO requirement, this course must be taken for a letter grade and the student must receive a B- or better.** Note:

since the GBO is a University Exam, only the GBO committee can decide when the conditions have been met and a student has passed the GBO. The student's advisor, CMDDB Program Director and Department Chair can offer advice, but do not make this decision. Therefore, the student should contact their GBO Committee Chair if they have any questions about whether they are appropriately meeting the conditions this committee has set for them.

A failing grade is given when the overall performance on the GBO exam is unsatisfactory and/or no specific remedy for the weaknesses is readily identifiable. Students are allowed to retake the GBO examination one time only, and this must occur within six months of the original exam date. Students will be re-examined by the same GBO committee unless written approval is obtained from the CMDDB Program Director.

## **1. FORMAT OF THESIS RESEARCH PROPOSAL**

It is recommended that students address questions they think are interesting and important, using what they consider to be the most appropriate methods. The resulting proposal may end up being broader (or narrower or even very different) than one's actual thesis work. In preparing the written proposal students should allow for some creativity, even if a certain approach might be limited by logistic considerations (e.g., no access to a high energy neutron source, no resources for a 100,000 animal mouse colony, or unwillingness of your advisor to authorize travel to Antarctica). At the same time, students should explicitly discuss any significant drawbacks or uncertainties that are inherent for a given approach.

In the "real world", a grant is judged on the importance of the goals and on the probability of success. The measure is slightly different for a GBO exam. In common with the "real world" of grants, we are certainly looking for significant goals. The difference in the GBO exam is that rather than measuring whether WE (the examiners) think a given approach will work, a key goal of the GBO is to assess whether students have the training and scientific skills to start off in the field. What this entails is knowledge of background literature, understanding of limitations and risks to the available approaches, and an ability to design control experiments that will be needed to provide definitive information. Students should prepare the initial proposal with only minimal guidance and input from the thesis advisor, but after that, the level of involvement of the advisor is at the discretion of the advisor. Some advisors take this as an opportunity to teach their students grant writing skills; however, the primary ideas and concepts must be the student's own. Additionally, students should learn from this grant writing experience the value of writing and re-writing multiple drafts, and are encouraged to read each others' proposals to make constructive criticisms regarding clarity and logic. Multiple rounds of editing and polishing are absolutely necessary for the final document to be clear and easy-to read for a broad audience, as is typically the case for most grant applications.

The thesis proposal should be written in the format of an NIH postdoctoral fellowship grant application with five sections. The proposal should include sufficient information to permit an effective review without reviewers having to refer to the literature. Brevity and clarity in the presentation are important. The proposal (including any tables or figures) should not exceed 10 pages single-spaced with one inch margins and a font size of 12. The proposal must be distributed to committee members at least 2 weeks before the exam date.

### **i. Title and an Abstract** (1 paragraph)

### **ii. Specific Aims.** State the specific purposes of the research proposal and the hypothesis to be tested. (<1 page)

The "specific aims" section should begin with a short introductory paragraph which provides some context of the work in the overall field of study: why is this field of study important and what are the current outstanding questions. There should then be an enumeration of specific

aims (generally 2-5 aims). Each aim should center on an experimental goal or biological question that can be summarized in one or two lines. After each specific aim, a few sentences of explanation should give a summary of the approaches that will be taken toward the experimental goal. At the very end of the specific aims section, it is useful to have a paragraph describing how the proposed research will fit into the larger realm of research in the long run. This section often includes potential applications or experimental directions that may be beyond the scope of the proposed time period, but which demonstrate the long-term significance of the proposed work.

**iii. Background and Significance.** Sketch briefly the background to the proposal. State concisely the importance of the research described in this application by relating the specific aims to broad, long-term objectives (3-4 pages).

Assume that the person reading the proposal has finished the first year of graduate school but that they have never heard of the research in your lab and that they know nothing of your field. Your introduction should provide them with a working understanding of where the field has been, where it might be going, and what significance the proposed work will have in our understanding of biological processes and in practical applications. This section should be a major part of the proposal, but remember to leave room for the research design and methods section.

**iv. Research Design and Methods.** Provide an outline of research design and the procedures to be used to accomplish the specific aims and a tentative sequence for the investigation (4-5 pages).

This is the central core of your proposal. The goal of this section is to describe the experimental approaches that will be used to address each specific aim, including a concise description of experimental design for "standard" approaches, as well as a full description of any novel experimental designs that you propose. For each experimental direction, you should note the nature of conclusions that might be drawn, the types of control experiments that will be needed to support these conclusions, and the potential experimental problems or ambiguities that might be encountered. (The proposal will be much clearer if there is some prioritization of effort). Some ways to do this (depending on the nature of the project) are: (a) stating a percent effort for each approach (for approaches to be taken simultaneously), (b) giving a list of experiments in rank order (for sequential approaches), (c) stating how far a given approach will be pursued before shifting efforts (e.g., for a genetic screen or for attempts to crystallize a protein), or (d) presenting a flow-chart.

**v. Bibliography** (not included in page limit)

## **2. COMPOSITION OF THE EXAMINING COMMITTEE**

The GBO examining committee consists of five members plus two alternates. The Graduate Board, which is a JHU committee that oversees GBO exams and approves examiner committee composition, requires that two or three members be from outside the student's home department. The Graduate Board has in the past invalidated GBO exams administered by a committee with an incomplete attendance or with the incorrect composition. Therefore, the exam should not begin until the ENTIRE committee is present. If a committee member is unable to attend, they must be replaced by the appropriate alternate committee member before beginning the exam. The advisor is not a member of the examining committee, but may be a silent observer in the exam. The student's research advisor should select the members of the committee and work with the student and examiners to determine the examination date. The Academic Program Coordinator will contact faculty, schedule the exam and complete the required paperwork. The paperwork is sent to the Graduate Board at least three weeks in advance. The Graduate Board approves the committee and returns a copy of the examination

form to the Department. The Academic Program Coordinator will confirm the appointment of the committee members and notify them of the date, time and place of the examination via email.

For graduate board oral examination committee membership eligibility, please check the appropriate section below, based on the primary departmental affiliation of the research advisor. These rules are subject to change. Please check with Academic Program Coordinator for a final version. At least one outside member of the committee must be an Associate Professor or higher so that he/she may serve as chairman of the examination committee.

Advisor Department	Inside Members	Outside Members
Biology	If 2 Biology If 3 Biology	3 Other JHU Department/Carnegie maximum of 2 2 Other JHU Department/Carnegie maximum of 1
Biophysics	If 2 Biophysics If 3 Biophysics	1 Other JHU Department and 2 Biology 2 Biology
Carnegie	If 2 Carnegie If 3 Carnegie	1 Other JHU Department and 2 Biology 2 Biology
Chemistry	If 2 Chemistry If 3 Chemistry	1 other JHU Department and 2 Biology 2 Biology
NIH	If 1NIH If 2 NIH	2 Other JHU Department and 2 Biology 1 Other JHU Department and 2 Biology

**(For students in GPP, a maximum of 2 NIH investigators may serve on the committee as inside members.)**

The examination must be taken prior to the start of the fifth semester in residence (i.e., this deadline date usually would be August 31st). Any exemptions to this deadline must be obtained in writing from the CMDDB Program Director. If the student is required by his/her committee to be retested, the requirement must be satisfied within six months of the date of the examination. **All examinations must take place on the Homewood Campus.**

### 3. STUDYING FOR THE EXAM

The written proposal is an exercise in grant writing and students should be given feedback by the committee on their ability to write and communicate scientific information. However, students should keep in mind that the GBO is a test of general knowledge and scientific reasoning, and is not based solely on the written proposal. Although some questions will deal with issues directly related to the subject of the thesis proposal, many questions are only peripherally related to this topic. Students should assume that any issues related to topics covered by any of the core courses are possible subjects for questioning by the committee.

To successfully conduct research in biology and biophysics, a solid, general background in chemistry, biochemistry, molecular, cellular and developmental biology is essential. As a starting point, you might review concepts in a text such as "Molecular Biology of the Cell" and a rigorous biochemistry text. Another very good suggestion is to choose a half dozen key papers in your field and read the methods sections of each in detail, making sure that you understand why each experimental approach was taken, how the experiments were designed, and how the authors were (hopefully) able to draw definitive conclusions. One piece of advice for studying: concepts are more important than details. Don't waste time memorizing facts: they won't be useful in the exam and you'll forget them in 2 months.

An example:

Should you memorize the name of every protein in a ribosome? No.

Should you try to understand what a ribosome is and what it does? Yes.

Many students form study groups, as well as participate in 'mock' GBO exams administered by more senior students. These types of activities, as well as the day-to-day process of engaging in scientific discussions with your peers, lab mates, and seminar speakers, all contribute to preparation for doing well in the GBO exam.

#### **4. PROCEDURE OF ORAL EXAMINATION**

**Remind the members of your committee of the place and time of the exam.**

As a courtesy to committee members not on campus, the academic program coordinator will send parking passes to them.

The academic program coordinator will make arrangements in advance and have your academic folder brought to the examination.

##### **Part 1: Pre-exam closed committee meeting (generally 5-15 minutes)**

Student leaves the room (but advisor stays). There will be a general discussion of the student's progress in the first two years, strengths or weaknesses, and organization of the exam.

##### **Part 2: Main part of the exam (generally ~90 minutes total)**

Student presents the proposed project and answers questions. The advisor is welcome in the room for this part of the exam but must remain silent.

There are at least two formats for this part of the exam:

Formal: Approximately 10 minutes (keep it short – your examiners will have read your proposal and will be familiar with your project) are allotted for the presentation, with questions waiting until after the presentation.

Informal: The student starts the presentation and committee members interrupt with questions as they see fit.

The choice of format is up to the committee and will be agreed upon at the beginning of the exam. In most cases the committee will allow the student to choose the format. With format (a), some type of timer should be used to signal the presentation time limit.

The exam is designed to assess whether the student is ready to pursue full time research toward a Ph.D. thesis. This entails knowledge of background literature, understanding of limitations and risks to available approaches, and an ability to design control experiments that will be needed to provide definitive information.

The written proposal (and oral presentation) are concrete examples of the student's knowledge and intellectual skills and is thus certainly relevant to the exam. In the past, some exams have been derailed by debates over the merits of experimental approaches taken in the advisor's lab or on interpretation of specific experiments that the student has already carried out. While such discussions can be valuable, they should not be allowed to overshadow the focus of the exam on the student's knowledge and critical abilities. This is an exam of the student, not of the student's advisor.

Rule 1: Don't panic during questions. If you get asked a question that you can answer, answer it. If you get asked a question that you can't answer, you might suggest how you would find out (experimentally or in the library). If you get asked a question that you don't understand, ask the questioner to rephrase the question until you understand what is being asked. If you know the answer, but can't think of the specific name for something, admit it but describe what you do know – knowing something is better than knowing nothing.

### **Part 3: Post-exam closed committee meeting.**

Student and advisor leave the room. Members of the committee discuss the student's strengths and weaknesses, performance on the exam, and any other issues that might be relevant to the transition to full-time research status. If there are significant deficits, the committee should decide on a course of action, either failing the student or giving a "conditional pass" (spelling out specific conditions). If there are less significant deficits, the committee may decide on specific suggestions for the student or advisor.

### **Part 4: Post-exam meeting with student and advisor.**

Student and advisor come back into the room. Generally the chairperson gives a general summation of the results of the exam.

Although it is not a formal part of the GBO exam, it may be valuable to the student to:

- (1) critique his or her own performance in the presentation and questions
- (2) express any deficits that they feel they have in their graduate preparation and ask for suggestions regarding how to rectify the deficits (no one is perfect!).

Next, each member of the committee should give a few comments to the student that sum up strengths and weaknesses in the proposal and of the student's presentation. These should be kept very short (a minute or so each) if the student did very well in the exam and passed, and may be longer if the student had significant deficits.

Finally, the chairperson of the committee should explain to the student any conditions for passage or re-examination, and the written exam record should be filled out by the chairperson and signed by the committee members. The student and mentor will be given a copy of any specific conditions that need to be satisfied in the event of a 'conditional pass'. **Only the GBO committee can decide when the student has satisfied these conditions.** The chair of the GBO committee is responsible for communicating with the chair of the Graduate Board regarding the outcome of the exam, and also informs the Graduate Board in writing when the conditions have been satisfied. It is the responsibility of the student to communicate with the

GBO committee chair to ensure that the conditions are understood and met. Students who do not resolve the conditions their GBO exam by the deadline stipulated by the committee (usually within six months of the exam date) are subject to dismissal from the program.

Results of the oral examination should be recorded on the graduate board oral examination form that the chair of the committee receives. This form is subsequently recorded by the program office, Graduate Board, and finally by the Registrar. (See Academic Program Coordinator for these guidelines and forms.)

## **G. THESIS RESEARCH**

### **1. ANNUAL THESIS REVIEW COMMITTEE**

After a student has chosen a laboratory for thesis research and has passed the GBO exam, he/she, in consultation with the research advisor, will select a minimum of two additional faculty members to serve on the thesis review committee. Often, these two faculty members were also on the student's GBO committee, but this is not required. There are no requirements for inside and outside members of the thesis committee, and the members can be from the same or different departments as the thesis advisor. **In the third year of study and beyond, the committee must meet annually.** Typically, this is coupled with the student's progress report which provides a convenient forum for updating the thesis committee on the thesis research. The student should prepare a short (~2-3 pg.) summary of the progress to date and plans for the coming year, and distribute this summary to the committee members one week before the thesis committee meeting. The thesis committee is expected to evaluate the student's general knowledge and progress on their thesis research, as well as to offer both general and specific advice on the current research (see Annual Review Evaluation form).

In keeping with a general goal of graduation in 5-5.5 years, a special 'thesis review' committee meeting will be held at the end of the 4<sup>th</sup> year or beginning of the 5<sup>th</sup> year of study. In collaboration with the thesis mentor, the student should prepare a preliminary thesis outline and a plan for graduation in 12-18 months. The outline and plan should be distributed to the committee members one week before the meeting. The student should also be prepared to discuss plans following graduation to receive advice and input from the committee for how to prepare for and obtain a desired position. The final thesis review committee meeting should be 4-6 months prior to the anticipated thesis defense date, and the committee must officially approve the thesis content and outline at this time in order for the student to schedule their thesis defense (see below). Results of the meeting must be reported to the Academic Program Coordinator. Students are responsible for setting up the meetings of the committees. As with the graduate board oral examinations, all thesis review meetings should be held on the Homewood Campus.

A student's review for a particular academic year must be completed by August 31<sup>st</sup>. If a student fails to meet this requirement, stipend and tuition support will not be provided for the upcoming semester and a student may be terminated from the program. Before having the annual review, please obtain a form from the Academic Program Coordinator (see the Appendix for a sample form).

### **2. PROGRESS REPORT**

Every graduate student beyond their second year of study must present a progress report of their research during the academic year. This series was organized to provide students and post-docs with an opportunity to present their results and to promote interaction between laboratories. Graduate students (beyond the second year) and postdoctoral fellows from all labs will give talks (25 minute talk and 5 minute question period) based on their work. Graduate students are encouraged to utilize this talk as a preliminary presentation for their Annual Thesis

Review. The progress reports are held on Tuesdays at 12:00 PM in Mudd 100. Each summer, the Progress Report Coordinator will schedule the talks for the next academic year in conjunction with the research advisors. As with the annual thesis review, failure to participate in the progress reports by August 31 of each year will result in a termination of stipend and tuition support.

### **3. EVALUATION OF THE PERFORMANCE OF GRADUATE STUDENTS**

At the end of each academic year, the Program Director of the training program will convene the entire Training Faculty to discuss the progress of all graduate students. For first year students, performance in laboratory rotations and the students' coursework record will be evaluated after the first semester by the Program Director, and at the end of the first year by the Training Faculty. As discussed above, any student who receives two grades of C+ or worse during the first year, who has a combined GPA less than 3.0, or who fails to otherwise meet the conditions of a probation, may be subject to dismissal from the program. The performance of students in the second year and beyond will also be reviewed by the CMDB Program Director and the training faculty. Close attention will be paid to the outcome of the annual thesis reviews, as well as to the completion of other degree requirements (above). **Students failing to make adequate progress toward the Ph.D. degree will be placed on probation and may be subject to dismissal from the program.** Students entering the sixth year or greater of graduate study must present a plan for completion of study, and obtain permission to continue in the program signed by the Program Director, in order to register.

### **4. THESIS PLANNING MEETING**

For students who are at or beyond the start of the 5th year of study the student should have a thesis planning meeting. For this meeting, the student should prepare (with help from their PI) a preliminary outline of the chapters for the thesis, along with a plan for graduating in 12-18 months. A separate, brief summary of progress to date may also be appropriate, or may be a natural part of the thesis outline. These materials should be distributed to the committee members about a week before the meeting. These plans are not considered as binding, but the idea is to keep everyone on track and focused on the same goals, with the understanding that not all projects work out as planned, and that in some cases a little more time is necessary to complete a Ph.D. thesis.

The student should also be prepared to discuss ideas they have for post-graduation plans at the 'thesis planning' meeting, so that advice can be sought from the committee members for how to make those plans a reality, and how and when to take steps toward the future goal.

### **5. FINAL GRADUATION REQUIREMENTS**

Upon completion of the thesis research and preparation of the thesis in the form specified by the Graduate Board, a public seminar of the thesis research is given followed by an oral examination by four knowledgeable and recognized experts in areas related to the research. Specific steps must be completed while preparing the final thesis and scheduling the thesis defense (see Graduation Checklist and Timeline in the Appendix). Before beginning this process the student should check with the Academic Program Coordinator to be sure that all other academic requirements are met.

#### **i. PRELIMINARY THESIS APPROVAL MEETING**

4-6 months prior to an anticipated thesis defense, a student must meet with their annual thesis review committee and outline the contents of their thesis. This committee must approve the

outline in writing before a thesis defense can be scheduled. The committee might require that additional experiments be done or that additional background material be presented. (See the Appendix for a copy of the form.) Approval for a student to schedule their thesis defense does not constitute approval of the final thesis itself.

#### **ii. FINAL THESIS EXAM COMMITTEE**

The final Thesis Defense committee will ordinarily include the research advisor, the two members of the annual thesis review committee and one additional member. One member of this committee must be from outside the department in which the student has performed his/her thesis work. Students conducting research in the Biophysics Department must be evaluated by an expert outside the Hopkins community.

#### **iii. DISSERTATION**

The dissertation must be written and given to the primary and secondary readers (see below) at least 4 weeks in advance of the scheduled thesis defense. A revised version must be distributed to the entire Thesis Defense Committee 2 weeks prior to the scheduled thesis defense. University-wide rules for the dissertation format can be obtained from the Academic Program Coordinator. After the thesis has been successfully defended, the final dissertation should be submitted to the Commercial Binding office in the MSE Library for binding and copyrighting. Please contact that office at ext. 68397 for further information. An extra bound copy (paid for by the department) should be provided to the CMDB Director for the collection of CMDB theses, housed in the student lounge. There are some specific rules you may not be aware of that must be followed, including the use of gutter-margins and copying the thesis onto the correct type of paper. University-wide rules for the dissertation format can be obtained from The Graduate Board or from the following website:

<http://www.library.jhu.edu/services/cbo/guidelines.html>.

#### **iv. READER' S LETTER**

The thesis advisor is ordinarily designated the Primary Reader of a thesis. One of the other members of the thesis defense committee is to be designated the Secondary reader. Prior to circulating a thesis to the rest of the thesis defense committee, the thesis must be approved by both the Primary and Secondary Readers. The Readers must sign a letter recommending acceptance of the dissertation. A sample letter can be found in the Appendix. This letter must be filed at least 2 weeks in advance of the thesis defense. **A copy of this letter must accompany each copy of the thesis given to other members of the defense committee.** This means that the readers must approve the thesis at least two weeks before the scheduled thesis defense. Therefore the student must have the thesis written early enough to allow the readers time to read it and the student to make appropriate modifications (i.e. at least 4 weeks before the scheduled thesis defense).

For those students from non-JHU affiliated programs (i.e., GPP-NIH, etc.), students must have a member of the training faculty designated as a reader. Any deviation from this policy would require special permission from the graduate board.

#### **v. THESIS SEMINAR AND FINAL EXAMINATION**

The Thesis Defense consists of a public thesis seminar followed by a private final examination administered by the Thesis Defense Committee. The thesis seminar is open to all members of the scientific community and should take the form of a scientific seminar targeted to the broad audience of scientists represented in the CMDB program. Family and guests are also welcome to attend. The final examination includes only the student and the Thesis Defense Committee

and should encompass a rigorous defense of the thesis and address any final concerns of the committee members.

A seminar notice should be given to the Academic Program Coordinator at least one week prior to the seminar so that it may be posted. All examinations and seminars are to be held on the Homewood campus.

The following times should be avoided when scheduling the thesis seminar to ensure that the maximum number of program members can attend:

	Monday	Tuesday	Wednesday	Thursday	Friday
8:30AM-10 AM	X	X	X	X	X
12-1:15 PM	X	X			
4PM-5PM	X	X	X*	X	

\* Do not schedule on first Wednesday of each month during academic year due to Biology Department Colloquia.

#### vi. APPLICATION FOR GRADUATION

An application for graduation must be completed and sent to the Office of the Registrar. Forms may be obtained from the Academic Program Coordinator or the Commencement section of the Registrar's Office, located in Garland Hall.

In addition, the dissertation must be formally submitted to and accepted by the University Library. Finally, before departing the University, the student should notify the Program Office of their forwarding address and position.

#### I vii. INTERNATIONAL STUDENTS

If you are planning on staying at JHU after graduation you must apply for OPT at least 90 days in advance of your graduation date.

It is important that international students coordinate **their last day of employment to coincide with their dissertation submission date.** An international student must be removed from the payroll on the same date that they submit their dissertation to the library. If the dates are not an exact match, any salary received after the submission date must be refunded to the University.

## **GRADUATE PARTNERSHIPS PROGRAM AT NIH**

The following requirements are designed specifically for graduate students enrolled in the GPP/NIH program:

### **LAB ROTATIONS**

GPP/NIH students will do two rotations at Homewood during their first year. After that time, GPP/NIH students may choose to do their final rotations in different laboratories at GPP/NIH. A GPP/NIH rotation may also be completed the Summer before matriculation.

### **COURSEWORK**

Core courses and the ethics course must be completed at Johns Hopkins University. Electives may be taken at JHU or NIH (with permission of the CMDDB Program Director). When possible, GPP students are encouraged to complete all required electives by the end of the 2<sup>nd</sup> year to qualify for non-resident tuition status.

### **TEACHING**

Two semesters of teaching must be performed at Johns Hopkins Department of Biology.

### **GRADUATE BOARD ORAL EXAMINATION**

The graduate board oral examination must be taken after the second year of study is complete (August 31). See Section entitled "*Graduate Board Oral Examinations*" for further information

### **JHU ADVISOR**

Mark Van Doren and Beverly Wendland are the Homewood Advisors for the NIH students for the Academic year 2008-2009. They will monitor the GPP student's progress during their time as graduate students.

### **GPP ADVISOR**

Orna Cohen-Fixe and Michael Lichten are the Graduate Partnerships Program Advisors for GPP students. They are the liaisons between the CMDDB program and GPP.

### **ANNUAL REVIEWS**

From year 3 and beyond in the program, students must give a Progress Report and have an annual view of their progress. See "*Annual Review*" section. The Annual Review/Progress Report talk must be performed at Mudd Hall. At least one member of the CMDDB program must be a member of the Annual Review Committee.

### **FINAL GRADUATION REQUIREMENTS**

To graduate from the program, students must complete the following requirements: a) submit an approved dissertation, b) submit a reader's letter attesting to the publishing capabilities of the dissertation, c) take a departmental examination, and d) present a final seminar. See Section on "*Final Graduation Requirements*".

The following schedule outlines the GPP program by year:

<b>Year #</b>	<b>Location</b>
<b>Year 1</b> Lab Rotations Coursework	JHU/NIH JHU
<b>Year 2</b> Teaching* Coursework* Thesis Research Graduate Board Oral	JHU JHU NIH JHU
<b>Year 3</b> Thesis Research Annual Review/Progress Report	NIH JHU
<b>Year 4</b> Thesis Research Annual Review/Progress Report	NIH JHU
<b>Year 5</b> Thesis Research Annual Review/Progress Report	NIH JHU
<b>Year 5 and Beyond</b> Complete Graduation Requirements	JHU

\* Teaching and electives may be permitted during the first year with approval of CMDDB and JHU/GPP Directors, with the stipulation that a full effort is expended on TA duties and that satisfactory progress is made in coursework and rotations.

## **OTHER ACADEMIC POLICIES**

### **ADVISING**

The CMDB Program Directors will serve as advisors to entering students until they choose a research advisor. After this time, students seeking additional advice, or who have grievances, should also contact the CMDB Program Directors.

### **VACATION AND LEAVE**

Academic Calendar. Graduate students are required to remain in residence when classes are not in session (e.g. January Intersession, Spring Break and during the summer). First year students continue their laboratory rotations and take the required "Responsible Conduct in Research" course during Intersession. More senior students will be conducting thesis research during these times.

Vacation. The following NIH policy is in force for graduate students:

Vacations must be scheduled and approved of in advance with the research supervisor. According to the NIH Training Grant policies " ... trainees may receive stipends during the normal periods of vacation and holidays observed by individuals in comparable training positions at the grantee institution. For the purpose of these awards, however, the period between the spring and fall semesters is considered to be an active time of research and research training and is not considered to be a vacation or holiday." Vacations are not cumulative. Any additional time off would be at the discretion of the research supervisor. University holidays are also at the discretion of the research supervisor.

Accordingly, the amount of vacation time allowed is decided by the head of each individual lab. In general, and in keeping with JHU and NIH guidelines, students should restrict vacation time to no more than three weeks, or 15 weekdays, per year. Students should notify their supervisor about vacation time well in advance and receive approval.

Parental and Sick Leave. The following NIH policy is in force for graduate students:

"Trainees may receive stipends for up to 15 calendar days of sick leave per year. Sick leave may be used for the medical conditions related to pregnancy and childbirth. Trainees may also receive stipends for up to 30 calendar days of parental leave per year for the adoption or the birth of a child when those in comparable training positions at the grantee institution have access to paid leave for this purpose and the use of parental leave is approved by the 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.

Leave of Absence. Leave of Absence status is granted to those students who must suspend their studies due to medical or family problems. If a student would like to request a Leave of Absence, they must complete an application and submit it for approval by the Program Director. The Leave of Absence is granted for a maximum of two years. Please see the Academic Program Coordinator for an application. A student on Leave of Absence must contact the Academic Program Coordinator when ready to be reinstated as a full-time student.

## **MASTER'S DEGREE**

The program in Cell, Molecular, Developmental Biology and Biophysics does not grant the M.A. degree except in special cases. The Master's Degree is only given to those students who choose not to remain in the program and who have passed their graduate board oral examinations. The Master's degree is not automatically awarded and is given at the discretion of the Program Director. It may be given with or without presentation of a written thesis and defense. The terminal Master's Degree cannot be given to a student on Leave of Absence.

## **NON-RESIDENT STATUS**

Non-resident status is designed for those students who have completed all program requirements except for the thesis research, and have left the campus to pursue their research (i.e., advanced NIH/GPP students). To register for this status please obtain a form from the Academic Program Coordinator. This change in status must be approved by the Program Director and the Graduate Board.

## **TIME LIMITS**

The graduate program has been designed so that a student who is working in a proficient manner should be able to finish coursework and the dissertation in ~5 years. The following time constraints should be adhered to:

- A. Graduate students must choose a research advisor by the end of the first year. Any deviation from this policy needs permission in writing from the CMDDB Program Director.
- B. The graduate board oral examination should be completed by the end of the second year (i.e., August 31). Any deviation from this deadline needs permission in writing from the CMDDB Program Director. Failure to do so may result in forfeiture of tuition support and stipend.
- C. A student in the sixth year of graduate study and beyond is required to obtain permission to register each semester in writing from the CMDDB Program Director. To obtain permission to register, complete a "Permission to Register" form and have it signed by the thesis mentor and the CMDDB Graduate Program Director. The CMDDB Program Director will require an update regarding the student's status and graduation plans. The signed form must be submitted to the Academic Program Coordinator to maintain your student status. (See the Appendix for an example of the Permission to Register form).

## **TRAVEL MONEY**

The NIH training grant provides funds to first year graduate students supported by CMDDB to cover registration costs for the Program retreat.

## **SAFETY PROCEDURES**

Johns Hopkins policies on laboratory safety, biohazards, radioactive materials, disposal of hazardous chemicals and training requirements can be found on the Health, Safety and Environment website:

**(<http://www.hopkinsmedicine.org/hse/index/htm>).**

**CHEMICAL SPILLS ext. 68798**

**ESCORT VAN ext. 68700**

**FIRE ext. 911**

**INJURIES ext. 60450**

**RADIOACTIVITY ACCIDENTS ext. 67278**

**SECURITY ext. 67777**

# **ACADEMIC INTEGRITY AND RESEARCH INTEGRITY**

## **Academic Integrity**

In all aspects of their work, students assume an obligation to conduct themselves in a manner appropriate to the Johns Hopkins University's mission as an institution of higher education. A student must refrain from acts that he or she knows, or under the circumstances has reason to know, may impair the academic integrity of the University. Violations of academic integrity include, but are not limited to: cheating, plagiarism; submitting as one's own the same or substantially similar work of another; knowingly furnishing false information to any agent of the University for inclusion in the academic records; dishonesty in discharging teaching assistant duties; falsification; forgery. Additional information about Academic Misconduct and Integrity in Research can be found on the KSAS Graduate Education website (<http://www.grad.jhu.edu/academicInfo/policies.htm>), part of which is reproduced in the Appendix. The CMDDB graduate program has a ZERO TOLERANCE POLICY for academic and research misconduct. Any example of academic or research misconduct will result in probation or dismissal from the CMDDB program, in addition to any penalties imposed by a course instructor, research advisor or the university.

Students may use only those resources approved by the instructor for completing exams and assignments. Exams must be taken using only specified resources, often only your own brain. Use of other resources such as notes, electronic files or the work of other students is cheating unless those resources are specifically approved. Assignments must constitute a student's own work using approved resources unless collaborations between students are specifically approved.

## **Research Integrity**

As scientists, our mission is to cultivate our thoughts, ideas and data and communicate them effectively through spoken and written word. Therefore, nothing is more important in science than the care we put into producing our ideas and data, the integrity with which we report them, and the credit we give to others whose ideas and data have influenced our own. Violations to this central code of conduct in research and academics should not be tolerated in the scientific community, and will not be tolerated by the CMDDB graduate program. Misconduct in research and academics can take many forms, including plagiarism, falsification of data, failure to properly credit the work of others, and failure to properly report examples of the above.

**Research Integrity.** You are expected to conduct, record, and report all experiments with honesty and accuracy. Omission or falsification of data, or interfering with the experiments of others are grounds for dismissal.

**Plagiarism** If our thoughts, ideas and data are our main product in science, the theft of these constitutes one of the most serious offenses. Plagiarism can be defined as the use of someone else's words, pictures or ideas as your own, or without properly assigning credit. The source of the other words, pictures or ideas does not matter, and uncredited use of even relatively "anonymous" information from the internet is still plagiarism. Plagiarism can take many forms; the uncredited use of someone else's exact words or pictures is only the most obvious form. Plagiarism can even occur unintentionally, since it may not always be clear, even to you, whether a particular idea was yours or came from another source. This is particularly true in science where we are constantly "contaminated" with other people's ideas through discussions, seminars and the literature. It doesn't matter if an act of plagiarism is blatant or mild, intentional or unintentional, it all constitutes academic misconduct. Plagiarism of copyrighted material is also illegal. A student is responsible for understanding the rules of giving proper credit for the work and ideas of others, and for ensuring that their work does not constitute plagiarism

**Student Conduct** The University expects all students to respect the rights of others, and to refrain from behavior that impairs the University's mission of teaching, research/scholarship, and outreach to the local, national, and international community. Violations of appropriate student conduct may include, but are not limited to: harassment behavior (physical or verbal); intimidation or verbal abuse; actions that are a danger to one's own personal safety or that may harm others, and actions that destroy, impair, or wrongfully appropriate property. Appropriate use of the University internet is also expected, and visiting websites with distasteful or lewd content is not permitted.

Students are expected to know and abide by University policies governing student conduct and academic integrity. Those who impair the University's mission are subject to expulsion. Refer to your divisional academic policies and procedures for specific information

### **Disclaimer**

This is not a legal document. This booklet presents current (September 2008) guidelines and practices for the Cell, Molecular, Developmental Biology and Biophysics (CMDDB) graduate program. The Program Director and participating Department Chairs reserve the right to modify requirements, create new ones and otherwise alter graduate program practices without advance notice.

## **APPENDIX**

1. Academic Calendar
2. Important Dates for the 2008-2009 academic year
3. List of CMDB Training Faculty
4. CMDB Administration and Committees
5. CMDB Program Forms:
  - THESIS RESEARCH ADVISOR SELECTION FORM
  - GBO FORM
  - ANNUAL REVIEW FORM
  - GRADUATION CHECKLIST AND TIMELINE
  - PRELIMINARY THESIS APPROVAL FORM
  - SAMPLE READER'S LETTER FOR THESIS APPROVAL
  - FINAL THESIS EXAMINATION FORM
  - PERMISSION TO REGISTER
6. Graduate Ethics and Integrity Guidelines Excerpt
7. Tax Information
8. Preapproved Electives List

## 2008-2009 Academic Calendar

<b>2008</b>	
Tues 9/2 – Wed 9/3	In person registration for graduate students
Thurs 9/4	First day of classes
Mon 10/13	Fall Break Day – classes suspended
Thurs 11/27 – Fri 11/28	Thanksgiving Break
Mon 12/8	Last day of classes
Tues 12/9 – Thur 12/11	Reading period
Fri 12/12 – Fri 12/19	Final examination period
<b>2009</b>	
Wed 1/5 – Fri 1/23	Intersession
Mon 1/19	Martin Luther King Jr. Birthday (obs.)
Thur 1/22 – Fri 1/23	In person registration for graduate students
Mon 1/26	First day of classes
Fri 5/1	Last day of classes
Mon 5/4 – Wed 5/6	Reading period
Thur 5/7 – Thur 5/14	Final examination period
Thur 5/21	University Commencement

## Regularly scheduled activities

### Weekly events

**Progress Reports:** Tuesday noon, Mudd 100

### **Departmental seminars:**

Monday 12:15pm – Carnegie Institute

Monday 4pm – Mergenthaler 111, Biophysics

Tuesday 4:15pm – Remsen 233, Chemistry

Thursday 4pm – Mudd 100, Biology

### Monthly events

**Biology Colloquium:** First Wednesday 4:30pm – Mudd Auditorium

## IMPORTANT DATES FOR ACADEMIC YEAR 2008-2009

### **2008-2009 Rotation Dates**

<b>Rotation #</b>	<b>Dates</b>	<b>Presentation Dates</b>
Rotation 1	9/3-10/29	10/30-10/31
Rotation 2	11/3-1/7	1/8-1/9
Rotation 3	1/12-3/11	3/12-3/13
Rotation 4	3/16-5/13	5/14-5/15

**CMDB PROGRAM RETREAT: October 12-13, 2008**

**Dates for 2009 Responsible Conduct in Research Class  
(TBA)**

**CMDB Interview Weekend: February 13-14, 2009**

### **Choosing a thesis lab**

Dates for approaching potential thesis advisors: May 11-15, 2009

Dates for committing to a thesis lab: May 15, 2009 or after

## TRAINING FACULTY FOR CELL, MOLECULAR, DEVELOPMENTAL BIOLOGY & BIOPHYSICS PROGRAM

### TRAINING FACULTY - BIOLOGY DEPARTMENT

<b>FACULTY NAME</b>	<b>PHONE</b>	<b>ROOM</b>	<b>EMAIL</b>
Karen Beemon	516-7289	Mudd 20B	<a href="mailto:klb@jhu.edu">klb@jhu.edu</a>
Ludwig Brand	516-7298	Mudd 103D	<a href="mailto:ludwig.brand@jhu.edu">ludwig.brand@jhu.edu</a>
Xin Chen	516-4576	Mudd 307B	<a href="mailto:Xchen32@jhu.edu">Xchen32@jhu.edu</a>
Kyle Cunningham	516-7844	Mudd 36A	<a href="mailto:kwc@jhu.edu">kwc@jhu.edu</a>
Michael Edidin	516-7294	Mudd 38A	<a href="mailto:Edidin@jhu.edu">Edidin@jhu.edu</a>
Ernesto Freire	516-7743	Mudd 114A	<a href="mailto:EF@jhu.edu">EF@jhu.edu</a>
Samer Hattar	516-4231	Mudd 227	<a href="mailto:shatter@jhu.edu">shatter@jhu.edu</a>
Edward Hedgecock	516-8761	Mudd 16B	<a href="mailto:ehedgec1@jhu.edu">ehedgec1@jhu.edu</a>
Blake Hill	516-6783	Mudd 20B	<a href="mailto:hill@jhu.edu">hill@jhu.edu</a>
Andrew Hoyt	516-7299	Mudd 36C	<a href="mailto:Hoyt@jhu.edu">Hoyt@jhu.edu</a>
Ru Chih Huang	516-5181	Mudd 249	<a href="mailto:rhuang@jhu.edu">rhuang@jhu.edu</a>
Reiji Kuruvilla	516-2366	Mudd 224A	<a href="mailto:rkuruvilla@jhu.edu">rkuruvilla@jhu.edu</a>
Yuan Chuan Lee	516-7041	Mudd 141A	<a href="mailto:Yclee@jhu.edu">Yclee@jhu.edu</a>
Evangelos Moudrianakis	516-7305	Mudd 130	<a href="mailto:Vanm@jhu.edu">Vanm@jhu.edu</a>
Peter Privalov	516-6532	Mudd 117A	<a href="mailto:Privalov@jhu.edu">Privalov@jhu.edu</a>
Saul Roseman	516-7333	Mudd 214A	<a href="mailto:Roseman@jhu.edu">Roseman@jhu.edu</a>
Joel Schildbach	516-0176	Mudd 235	<a href="mailto:Joel@jhu.edu">Joel@jhu.edu</a>
Robert Schleif	516-5206	Mudd 239	<a href="mailto:schleif@jhu.edu">schleif@jhu.edu</a>
Trina Schroer	516-5373	Mudd 220	<a href="mailto:schroer@jhu.edu">schroer@jhu.edu</a>
Mark Van Doren	516-4717	Mudd 305B	<a href="mailto:Vandoren@jhu.edu">Vandoren@jhu.edu</a>
Beverly Wendland	516-0460	Mudd 36B	<a href="mailto:Bwendland@jhu.edu">Bwendland@jhu.edu</a>
David Zappulla	516-8749	Mudd 129A	<a href="mailto:Zappulla@jhu.edu">Zappulla@jhu.edu</a>
Haiqing Zhao	516-7391	Mudd 226	<a href="mailto:hzhao@jhu.edu">hzhao@jhu.edu</a>

### TRAINING FACULTY - BIOPHYSICS DEPARTMENT

<b>FACULTY NAME</b>	<b>PHONE</b>	<b>ROOM</b>	<b>EMAIL</b>
Douglas Barrick	516-0409	Jenkins 214	<a href="mailto:Barrick@jhu.edu">Barrick@jhu.edu</a>
Gregory Bowman	516-7850	Jenkins 302	<a href="mailto:gdbowman@jhu.edu">gdbowman@jhu.edu</a>
Richard Cone	516-7259	Jenkins 320	<a href="mailto:Cone@jhu.edu">Cone@jhu.edu</a>
Bertrand Garcia-Moreno	516-4497	Jenkins 002	<a href="mailto:Bertrand@jhu.edu">Bertrand@jhu.edu</a>
Karen Fleming	516-7256	Jenkins 420	<a href="mailto:Karen.Fleming@jhu.edu">Karen.Fleming@jhu.edu</a>
Juliette Lecomte	516-7244	Jenkins 116	<a href="mailto:lecomte_jtj@jhu.edu">lecomte_jtj@jhu.edu</a>
Sarah Woodson	516-2015	Jenkins 402	<a href="mailto:sWoodson@jhu.edu">sWoodson@jhu.edu</a>

### TRAINING FACULTY - CARNEGIE INSTITUTION

<b>FACULTY NAME</b>	<b>PHONE</b>	<b>ROOM</b>	<b>EMAIL</b>
Alex Bortvin	246-3034	Carnegie	<a href="mailto:Bortvin@ciwemb.edu">Bortvin@ciwemb.edu</a>
Chen-Ming Fan	246-3022	Carnegie	<a href="mailto:Fan@ciwemb.edu">Fan@ciwemb.edu</a>
Steven Farber	246-3072	Carnegie	<a href="mailto:Farber@ciwemb.edu">Farber@ciwemb.edu</a>
Joseph Gall	246-3017	Carnegie	<a href="mailto:Gall@ciwemb.edu">Gall@ciwemb.edu</a>
Marnie Halpern	246-3018	Carnegie	<a href="mailto:Halpern@ciwemb.edu">Halpern@ciwemb.edu</a>
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### TRAINING FACULTY - CHEMISTRY DEPARTMENT

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### CMDB PROGRAM ADMINISTRATION

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### CMDB COMMITTEES

#### Executive Committee

Douglas Barrick  
Karen Beemon  
Bertrand Garcia-Moreno  
Doug Koshland  
Allan Spradling  
Mark Van Doren  
Beverly Wendland

#### Graduate Admissions Committee

Mark Van Doren, Co-Director of Graduate Admissions  
Beverly Wendland, Co-Director of Graduate Admissions  
Greg Bowman  
Marnie Halpern  
Andrew Hoyt  
Rejji Kuruvilla  
Evangelos Moudrianakis  
Sarah Woodson

#### Progress Reports Coordinator

Andrew Hoyt

#### Retreat Committee

Blake Hill, Chair

#### Graduate Student Representatives

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PROGRAM IN CELL, MOLECULAR,  
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144 Mudd Hall/3400 N. Charles Street  
Baltimore, MD 21218

**THESIS RESEARCH ADVISOR SELECTION FORM**

\_\_\_\_\_  
**Date**

\_\_\_\_\_ has permission to join my laboratory  
**NAME OF STUDENT**

to perform thesis research and I agree to support her/him.

---

\_\_\_\_\_  
**Student Signature**

\_\_\_\_\_  
**Advisor Signature**



**GRADUATE STUDENT ANNUAL REVIEW**

**NAME:** \_\_\_\_\_ **YEAR OF STUDY:** \_\_\_\_\_

**ADVISOR:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**PROGRESS:** \_\_\_\_\_ **SATISFACTORY** \_\_\_\_\_ **UNSATISFACTORY**  
(Please complete each item in detail)

**EVALUATION OF PROGRESS REPORT TALK:**

**Overall knowledge of research field:**

**Description of progress during the last year:**

**Description of experiments to be carried out during next year:**

**Estimate of time & experiments to be completed for PhD:**  
(For students who have been in the program for at least 4 years)

**Describe any problems:**

**Recommendations:**

**Student:**

**Advisor:**

**SIGNATURES OF REVIEWERS:**

**GRADUATE STUDENT ANNUAL REVIEW – Thesis Planning Meeting Form**

**NAME:** \_\_\_\_\_ **YEAR OF STUDY:** \_\_\_\_\_

**ADVISOR:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**PROGRESS:** \_\_\_\_\_ **SATISFACTORY** \_\_\_\_\_ **UNSATISFACTORY**

(Please complete each item in detail; use back of page or additional sheets if needed.)

**EVALUATION OF PROGRESS REPORT TALK:**

**Overall knowledge of research field:**

**Description of progress during the last year:**

**Description of experiments to be carried out during next year:**

**Evaluation of preliminary thesis outline:**

**Evaluation of plan for graduation in 12-18 months:**

**Advice to help student make plans for after graduation:**

**Describe any problems:**

**Recommendations:**

**Student:**

**Advisor:**

**SIGNATURES OF REVIEWERS:**

## GRADUATION CHECKLIST AND TIMELINE

	Hold 'Thesis Planning' meeting	End of 4th year/beginning of 5th year of study
	Check with Academic Program Coordinator to make sure all course and other requirements have been met	6 months prior to completion
	International students that wish to remain in U.S. should apply for optional curriculum training (OPT) at Office of International Students and Scholars	6 months before completion
	Preliminary Thesis Approval Meeting	4-6 months before completion
	Assemble Thesis Defense Committee. Schedule Defense date & secure rooms. Decide on thesis "readers". Submit all of above to Graduate Program Director for approval.	2 months before completion
	Submit completed thesis to Primary and Secondary Readers	5-6 weeks before Defense
	Prepare "Readers Letter" and obtain Readers' signatures. Submit to Academic Program Coordinator.	3 weeks before Defense
	Present revised thesis with a copy of the reader's letter to defense committee	2 weeks before Defense
	Prepare seminar notice and give to Academic Program Coordinator	1 week before Defense
	<p>After thesis seminar and exam:</p> <ol style="list-style-type: none"> <li>1. Submit thesis to library when in final format. If graduating in the fall, this should be before the tuition grace period deadline (usually end of October) if possible. <b>International students should only turn in thesis on their last day on JHU payroll as a graduate student.</b></li> <li>2. Fill out application to graduate.</li> </ol>	

**JOHNS HOPKINS**  
UNIVERSITY  
PROGRAM IN CELL, MOLECULAR,  
DEVELOPMENTAL BIOLOGY & BIOPHYSICS  
144 Mudd Hall/3400 N. Charles Street  
Baltimore, MD 21218

## PRELIMINARY THESIS DEFENSE COMMITTEE APPROVAL FORM

---

Name of Student

has met with his/her thesis committee on \_\_\_\_\_.  
Date\*

We approve the commencement of the thesis writing.

\* This date must be approximately 4-6 months prior to the completion of all thesis requirements.

Signatures of Thesis Defense Committee

-----

**SAMPLE READERS ' LETTER**



**(MUST BE ON READER'S DEPT. LETTERHEAD)**

Date (4 weeks prior to defense)

Dr. Bruce Barnett  
Chair, Graduate Board  
The Johns Hopkins University  
Baltimore, MD 21218

Dear Dr. Barnett,

The undersigned have read the dissertation submitted by **(FULL NAME OF STUDENT)** entitled **(DISSERTATION TITLE)** and recommend its acceptance in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

We certify that this dissertation is a significant contribution to knowledge. We believe that the thesis is worthy of publication (a)\* in its present form or (b)\* with slight modifications).

Sincerely,

Name of First Reader  
Title  
Department

Name of Second Reader  
Title  
Department

\* Pick the appropriate phrase.

**JOHNS HOPKINS**  
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144 Mudd Hall/3400 N. Charles Street  
Baltimore, MD 21218

## FINAL EXAMINATION FORM

---

Name of Student

has successfully completed the Final Examination on \_\_\_\_\_.  
Date

Signatures of Examination Committee

---

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Baltimore, MD 21218

**PERMISSION TO REGISTER\***  
*(\*for any student in their 6th year of study and beyond)*

**Name of Student:** \_\_\_\_\_

**Year of Study:** \_\_\_\_\_

**Fall/Spring Semester, \_\_\_\_\_ (year)**

**Anticipated Graduation Date:** \_\_\_\_\_

**Date:** \_\_\_\_\_ **Signature:** \_\_\_\_\_  
Advisor

**Date:** \_\_\_\_\_ **Signature:** \_\_\_\_\_  
Program Director

**The Johns Hopkins University**  
**Krieger School of Arts & Sciences/Whiting School of Engineering**

[see <http://www.grad.jhu.edu/>]

**PROCEDURES FOR HANDLING ALLEGATIONS OF MISCONDUCT BY FULL-TIME & PART-TIME GRADUATE STUDENTS**

Established March 2006

The Krieger School of Arts and Sciences (“KSAS”) and the Whiting School of Engineering (“WSE”) full-time programs and Engineering and Applied Science Programs for Professionals (“EPP”) establish the following procedures to address instances of misconduct by all graduate students enrolled in full-time, part-time or non-degree (special student) Krieger School of Arts and Sciences and Whiting School of Engineering graduate programs. The procedures in this document do not apply to Krieger School Advanced Academic Program students. Their policy is contained in the Advanced Academic Programs Code of Conduct posted on the web at [www.advanced.jhu.edu/ethics/index.html](http://www.advanced.jhu.edu/ethics/index.html).

The goal of these procedures is twofold: (1) to ensure the highest level of professional conduct by graduate students, and (2) to provide a fair, deliberative, and efficient process for resolving allegations of misconduct by graduate students.

### **GRADUATE STUDENT MISCONDUCT**

Graduate student misconduct covered by these procedures includes academic misconduct including, but not limited to the following: cheating or facilitating cheating; plagiarism; reuse of assignments; unauthorized collaboration; alteration of graded assignments; knowingly furnishing false information to any agent of the University for inclusion in academic records; unfair competition; lying; and falsification, forgery, alteration, destruction or misuse of official University documents or seal. Graduate student misconduct also includes the failure to comply with University or governmental rules, regulations, and laws, and the disregard of the norms of expected conduct, including nonacademic conduct that would adversely affect the integrity and reputation of the University as a whole or the Krieger and Whiting Schools. A non-exclusive list of examples appears in Appendix A. These procedures do not apply to research fraud, including the intentional falsification or fabrication of data or results, misconduct in the application of research procedures so as to bias results, and other deceptive research practices which are all addressed under the WSE and KSAS Procedures for Dealing with Issues of Research Misconduct.

### **APPENDIX A** **EXAMPLES OF ACADEMIC MISCONDUCT**

Academic misconduct is the act of stealing ideas, thoughts, and words. Any act that violates the spirit of authorship or gives undue advantage is a violation. Although no list can be entirely comprehensive, the following non-exclusive examples are the most common types of academic misconduct.

#### **CHEATING ON EXAMINATIONS**

- Use of unauthorized materials (e.g., notes, books) during an in-class or take-home examination
- Consultation of unauthorized materials while being excused (e.g., on a restroom break) from an examination room
- Discussion of an exam's contents during its administration
- Copying answers from another student
- Obtaining an examination or answers to an examination prior to its administration
- Studying from an old exam whose circulation was prohibited by the instructor

#### PLAGIARISM

- Submission of the same or substantially similar work of another person, such as an author or classmate
- Use of the results of another student's work (e.g., exam, homework, computer code, lab report) while representing it as your own
- Improper documentation of quotations, words, ideas, or paraphrased passages taken from published or unpublished sources

#### REUSE OF ASSIGNMENTS

- Submission of the same or substantially similar assignment to fulfill the requirements of more than one course

#### IMPROPER USE OF THE INTERNET

- Plagiarism from a published or unpublished Internet source
- Improper documentation of an Internet source
- Use of paper writing services or paper databases on the Internet

#### IMPROPER USE OF ELECTRONIC DEVICES

- Consultation of unauthorized electronic devices (e.g., calculators, cellular phones, computers, PDAs) during examinations
- Use of electronic devices to communicate within or outside an examination room (i.e., use of cellular phones is not permitted during an exam)
- Storage of test answers, class notes, and other references in electronic devices for use during examinations

#### UNAUTHORIZED COLLABORATION

- Collaboration when solving homework problems or writing lab reports, computer programs, or papers unless explicitly approved by the professor

#### ALTERATION OF GRADED ASSIGNMENTS

- Submission of an examination or assignment for a regrade after making changes to the original answers or text

#### FORGERY AND FALSIFICATION

- Falsification or invention of data in a laboratory experiment
- Citation of nonexistent sources or creation of false information in a written assignment
- Attributing to a source ideas or information that is not included in the source
- Forgery of university documents, such as letters and transcripts
- Impersonating a faculty member

## LYING

- Request for special consideration from professors or university officials based upon false information or deception
- Fabrication of a medical or emergency excuse as a reason for needing an extension on an assignment or for missing an examination
- Claiming falsely to have completed and/or turned in an assignment
- Falsely reporting an ethics violation by another student

## FACILITATING ACADEMIC DISHONESTY

- Intentionally or knowingly aiding another student to commit a violation of academic conduct
- Allowing another student to copy from one's own examination paper during its administration
- Providing copies of course materials whose circulation was prohibited (such as exams or assignments) to students enrolled in or planning to take that course
- Taking an examination or completing an assignment for another student, or permitting another student to do so on one's behalf

## UNFAIR COMPETITION

- Willfully damaging the academic efforts of other students
- Stealing another student's academic materials (e.g., books, notes, assignments)
- Denying another student needed resources, such as hiding library materials or stealing lab equipment

## EXCEPTIONS

In some cases, exceptions to the above examples may apply. For example, some instructors assign problem sets or laboratory projects with the intention that students will work together or form study groups. In these cases, all collaborating partners should be noted on a submitted assignment.

Some instructors may accept assignments completed for another course. Students must secure written permission from the instructor to do so. Other instructors expect or encourage students to consult old exams and write new exams accordingly. Instructors should be certain that access to these exams is universal by placing them on reserve at the MSE Library.

To know what constitutes cheating for a particular course, students must ask the professor of the course for clarification. The general policy should be set forth during the first class of each semester and should be explained in the course syllabus. Students are expected to ask for clarification of unexplained or ambiguous areas. Ignorance of policies is not a valid excuse for cheating.

In general, it is important to remember the distinction between copying and collaborating. It is cheating to copy another's work and turn it in as your own. Professors, however, often encourage students to compare solutions or class notes with each other, to analyze differences in outcomes, to discuss methods, and to ask for

explanations. Cheating requires no engagement or understanding, while collaboration promotes interactive learning.

## **TAX INFORMATION**

Fellowship payments (stipends) made to graduate students are not subject to Social Security or Medicare tax (FICA). Fellowship payments made to graduate students are taxable for income purposes; however, they are not subject to income tax withholding. Individuals receiving fellowship payments are responsible for making quarterly estimated federal and state income tax payments, if needed.

### **Federal quarterly estimated income taxes**

Visit [www.irs.gov](http://www.irs.gov) to obtain the instructions, worksheet and vouchers for FORM 1040-ES.

### **State quarterly estimated income taxes**

Visit [www.marylandtaxes.com](http://www.marylandtaxes.com) to download the instructions, worksheets and vouchers for FORM 502D.

## **PAYMENT DATES FOR 2008**

You may pay all of your estimated tax by April 15, 2008, or in four equal amounts by the dates shown below:

1 <sup>st</sup> payment	April 15, 2008
2 <sup>nd</sup> payment	June 16, 2008
3 <sup>rd</sup> payment	September 15, 2008
4 <sup>th</sup> payment	January 15, 2009

PreApproved Electives			
Dept/Institution	Course #	Title	# of electives
JHMI	ME 440.811	NEUROSCIENCE COGNITION I	1
JHMI	ME 440.709	NEUROPHARMACOLOGY	1
JHMI	ME 260.708	GENETICS	1
JHMI	ME 110.703	MEMBRANE TRAFFICKING	1/2
JHMI	ME 260.812	GREAT EXP. IN BIOLOGY	1/2
JHU BIOPHYSICS	250.689	BIOLOGICAL MACROMOLECULES	1
JHU BIOPHYSICS	250.685	PROTEINS AND NUCLEIC ACIDS	1
JHU BIOPHYSICS	250.683	INTRO TO UNIX/PYTHON	1
JHU BIOPHYSICS	250.690	METHODS: MOLECULAR BIOPHYSICS	1
JHU CHEMISTRY	030.601	STATISTICAL MECHANICS	1
JHU CHEMISTRY	030.632	TOPICS IN BIOORGANIC CHEMISTRY	1
JHU CHEMISTRY	030.635	NUCLEAR MAGNETIC RESONANCE	1
JHU CHEMISTRY	030.631	BIOORGANIC CHEMISTRY	1
JHU BIOMED	580.640	CELL AND TISSUE ENGINEERING	1
NIH FAES	GENE 505	EMBRYOLOGY, DEVELOPMENTAL BIOLOGY AND HUMAN MALFORMATIONS	1/3
NIH FAES	GENE 418	THE GENOMICS & PROTEOMICS OF MITOCHONDRIAL BIOGENESIS OF THE CELL	2/3
NIH FAES	PHARM 400	PHARMACOLOGY	1
NIH FAES	STAT 500	STATISTICAL MECHANICS	1

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