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**Program Policies**

**Graduate Program in Cellular and Molecular Physiology**

**The Johns Hopkins University School of Medicine**



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## **1) Mission Statement**

The Cellular and Molecular Physiology Graduate Program (CMP) awarded its first PhD in 1954. The mission of the Cellular and Molecular Physiology Graduate Program is to provide advanced and rigorous research training in cellular and molecular physiology and to prepare students for leadership roles in academia and industry.

## **2) Application and Admissions**

The CMP accepts students for graduate study leading to the degree of Doctor of Philosophy. Candidates for the degree of Master of Arts in Physiology are not accepted, although an MA degree can, in some circumstances, be awarded to students who do not complete their PhD studies. The goal with the application and admissions process is to identify those applicants with the best potential to make important contributions to the discipline of physiology, and to become leaders in their fields. The number of students admitted each year is determined by the Chair of the Department of Physiology.

### Program/Application Requirements

Applicants must have a bachelor's degree or equivalent in a science or engineering discipline, and are expected to have a year of chemistry, biochemistry, physics, mathematics (including calculus) and significant course work in one or more areas related to the biological sciences. Strong research experience is a significant positive factor for admission. GRE scores are no longer required. Three letters of recommendation are required for application. We recognize that some students may have unusual backgrounds, such as training abroad, which is not directly comparable to most US applicants, and thus exceptions can be made for students who are judged to have exceptional potential.

### Application

The CMP program uses an online application form and process shared by graduate programs operated by the Graduate Student Affairs office. Fees from applications to the CMP program go to the Graduate Student Affairs Office to offset their costs for running the program. The application deadline for the CMP program is generally in early December every year.

### Admission Review Process

The program typically has far more applicants than there are positions in the program – in recent years there have been more than 80 applicants for 2-4 positions. Thus, there is an initial “triage” review by the CMP Program Director to eliminate applicants who are not competitive. Following this triage all applications are reviewed by the Admissions Committee, occasionally with input from other faculty with regard to specific students. The most promising applicants are brought to campus for interviews with CMP faculty. International students not presently in North America are interviewed by telephone or video conferencing. Based on review of academic records and results of the interviews with faculty, the Admissions Committee ranks the applicants in accordance with their potential to achieve the goals of the program. The maximum number of students admitted each year is determined by the Chair of the Department of Physiology. Offers are made to students on a rolling basis, and in accordance with the Council of Graduate Schools policies to which Johns Hopkins is party.

### Transfer Students

CMP does not encourage transfers, and students can only transfer into CMP from another institution as part of the normal admission process. These students must satisfy all the CMP requirements including rotations. At the discretion of the Program Director, significant earlier research experience may be used to waive one rotation and earlier course work may be used to waive some or all CMP course requirements. For students who move to Johns Hopkins with their advisors, admission may occur at any time during the year, although students must still meet admissions requirements for the CMP program. The approval of the CMP Program Director is required for non-CMP graduate students at Johns Hopkins to transfer their research training to a mentor within the CMP. The student must still satisfy all CMP requirements, although some accommodation for variations in early course work may be appropriate.

### Matriculation

Students will matriculate in the fall of each academic year, the exact date being set by the School of Medicine Calendar (last week in August). However, with the Program Director's approval, incoming CMP students may choose to matriculate early to work in a faculty member's lab during the summer prior to the start of their first academic year. Early matriculants must identify an available mentor for their summer research, and the mentor

must pay the student's stipend and health insurance during this time. A summer research effort of this type will make the student eligible to waive their regular spring rotation, and enter a thesis laboratory early.

#### Diversity

The CMP program values students from all backgrounds and strives to maintain a diverse student body.

### **3) Leadership, faculty, participation**

#### Leadership

CMP is a small program and is run in an open fashion with ongoing consultations and discussions among the faculty on program related issues. This allow CMP to have a compact organizational structure. The primary responsibility for operation of the program lies with the Program Director, who is appointed by the Chair of the Department of Physiology. The Admissions Committee consists of the Program Director and at least two additional faculty in the department. The Policy Committee meets as needed to oversee major policy initiatives such as curriculum and qualifying exam changes.

**Program Director:** Dr. Steven M. Claypool

**Department Chair:** Dr. William B. Guggino

**Academic Administrator:** Madeline McLaughlin

**Admissions Committee:** Drs. Steven Claypool, Anastasia Kralli, Zhaozhu Qiu

**Policy Committee:** Drs. Steven Claypool, William Wong, and Svetlana Lutsenko

#### CMP Faculty: Membership

Faculty members with primary appointment in the Department of Physiology are automatically members of CMP. To further enrich and broaden the program, other faculty members may wish to join and/or be invited to join CMP. Such faculty are subject to an evaluation process that assesses the suitability of their research programs for training CMP graduate students, their level of funding to support graduate student training, and their stated level of interest in contributing to the overall mission and activities of CMP. On a rolling basis, the primary faculty in the Department of Physiology will review faculty candidates for membership in the CMP program. Approval will require a majority vote.

#### Expectations for Faculty Participation

Program participation is required for continuing membership in the CMP program. In addition to mentoring students in their labs, program members are expected to participate annually in serving on oral exams, interviewing perspective students during recruiting, and in additional activities including: teaching in core or elective courses, serving on thesis committees, serving on the admissions committee, and attending student rotation presentations. Other opportunities include serving on the policy committee, running a core or elective course, and organizing events that enrich the experience of CMP students.

The CMP program reviews faculty participation annually. Faculty members who have not contributed during the past academic year may receive a letter from the director reminding them that their membership in the program is dependent on participation, and are given one more year to engage. Failure to participate can result in labs being closed to new students or dismissal from the program.

### **4) Financial Support for Students**

#### Student Financial Support

It is the goal of the program that students shall receive full financial support throughout their graduate studies. The program provides stipend, tuition and health and dental insurance for students through their first year of study (August – June). Normally, students will enter their thesis laboratories in early June, at which time the preceptor assumes the costs for the student. Tuition is covered by the School of Medicine.

Faculty may encounter funding difficulties that prevent them from paying the student's stipend for an extended period of time. In this case, students who have not yet completed three years of study will normally be transferred to other thesis laboratories. Students who are further along in their training may be permitted to transfer, although it is the goal of the program for them to complete their degrees in their current laboratories.

In the case where a student stays with the current laboratory, the mentor must first request support for the student from their primary department's Chair. If funds are not available from the primary department, the CMP program will make every effort to support the student.

#### External Fellowships

It is JHU School of Medicine Policy that students receiving an external fellowship are eligible for a one-time stipend supplement (currently \$3,000). The current criteria are the fellowships must be merit based (scientific), nationally competitive, written and submitted by the applicant and greater than \$10,000. Eligible fellowships are determined by the Dean for Graduate Student Affairs, but include for example NSF, individual NRSA, Ford, UNCF/Merck, Soros, Samsung, ACS, CFF.

## 5) Program Requirements

### Overview of Program Requirements

#### Year One

Five Core (BCMB) Courses  
Organ Systems Physiology  
Research Ethics Course  
Current Physiology  
Primary Source Readings and Analysis (Journal Club with Pharmacology students)  
Research  
Research Seminars  
Physiology Journal Clubs  
Three Laboratory Rotations (Research)

#### Year Two

Graduate Board Examination (Between Jan 1 and March 31<sup>st</sup>)  
Research  
Research Seminars  
Physiology Journal Clubs  
Have first Thesis Committee Meeting by August 15<sup>th</sup>.

#### Years Three and Higher

Annual thesis Committee Meetings (done on a yearly basis)  
Four Electives (to be completed before graduation)  
Student Individual Development Plans  
Research  
Participation in Research Seminars  
Physiology Journal Clubs  
Research Ethics  
Dissertation and Thesis Seminar

### Year One Requirements

The goal of the first year CMP curriculum is two-fold. First, it is designed to provide students with a broad and up-to-date knowledge base in the cellular and molecular underpinnings of modern physiology. Second, students should acquire a broad understanding of human organ level physiology and be able to integrate advanced cellular and molecular biology concepts.

#### Courses:

##### **Analysis of Macromolecular Energetics, Structure and Function**

The course will cover (1) macromolecules, (2) physical chemical principles dictating their biological behavior, and (3) methods to study them. Macromolecular interactions and functions are interpreted through a framework that combines theoretical concepts with experimental illustrations thereof. Key methods include: X-ray crystallography, nuclear magnetic resonance, cryo-electron microscopy, mass spectrometry, absorption and emission spectroscopies, hydrodynamic methods, and single-molecule approaches. Lectures will focus on practical applications of the methods, experimental design, data collection, and elementary aspects of data analyses.

##### **Molecular Biology and Genomics**

This course module covers the Molecular Biology and Genomics of both prokaryotes (using E. coli as the model organism) and eukaryotes, with a focus on "model organisms" including yeast, flies, worms, mice, and humans. Both the Molecular Biology (reductionist) perspective and the Genomics (systems biology) perspective will be provided on each topic, and there will be heavy emphasis on mechanism and regulation of fundamental processes in biological information transfer DNA->RNA-> protein. This lecture module will cover genes and genomes, transcription and RNA, replication, chromosome structure and function, and genome instability.

## **Principles of Genetics**

Genetics covers fundamentals principles of genetics, focusing primarily on yeast, the fruit fly, and the mouse. Problem sets are an integral learning tool in this course.

## **Pathways and Regulation**

This course will cover the principles of membrane transport, bioenergetics, metabolic pathways, cell cycle and cell death with particular emphasis on regulatory mechanisms including receptor-mediated signaling, small GTPases, lipid molecules, kinases and phosphatases.

## **Cell Structure and Dynamics**

The objective of this course is to provide the basics of cell biology, including the structure, function and biogenesis of cellular organelles. Also covered are essential concepts on the cytoskeleton, cell-cell and cell-extracellular matrix interactions, cell motility, chaperones, and protein turnover.

## **Organ Physiology**

The course provides a basic understanding of the many different aspects of the internal structure and function of the body. It aims to present a comprehensive survey of the complex interrelationships that exist between the structure and function of cells and organs.

## **Additional Requirements**

### **Current Physiology** (Wednesdays from 12-1 pm)

Students are required to attend all Physiology Department Seminars, which will be posted throughout the department. Also, students are required to attend 12 luncheons with seminar speakers. For six of the seminars, the students will be required to read a relevant paper from the speaker's lab prior to the seminar (a relevant paper can be found by searching the web). After the seminar, students will write and submit a 1 page (12 point, Times New Roman) document describing 1 or 2 "next experiments", which significantly extend or otherwise enhance the findings of a part of the seminar they attended. (Dr. Steven Claypool will review the 1<sup>st</sup> seminar summary for formatting.) The objective of this exercise is to go beyond understanding the work that was presented by the speaker, and encourage students to think about gaps in knowledge, formulate the next important questions, and design experiments that move a field forward. Grades will be based upon attendance (50%) and the summaries (50%).

### **Research Ethics Course**

Students must complete the Research Ethics Course coordinated by the Graduate Student Affairs Office. This is a two part course combining lectures and small group discussions to provide practical information on the ethical issues involved in research protocol, development and implementation of human research subjects.

### **Primary Source Reading and Analysis**

Students will receive articles in their inbox, which they should read prior to the group meeting. Students should be prepared to discuss the information and also present an article at a scheduled date.

### **Research Seminars** (Every other Friday from 12-1pm; alternating weeks with Physiology Journal Clubs.)

Speakers are faculty, postdocs, and graduate students within the Department of Physiology. First year students will do a presentation based on work done during lab rotations.

### **Physiology Journal Clubs** (Every other Friday from 12-1pm; alternating weeks with Research Seminars.)

CMP students are required to attend the student run journal club. Articles are provided for discussion and students and postdocs will lead discussion on a rotating basis.

### **Grading**

Students who receive one or two grades of C, must re-take the course/s the following year and receive a "B-" or higher grade. Students who receive more than two grades of C or one D (or below) will be reviewed by the Admissions Committee and are subject to dismissal from the program. First year students receiving a C or lower in a first year elective have the option of repeating the same course or enrolling in a different first year elective course the following year.

If a first year student receives three or more "C" grades or below in the Core Courses and first year electives, they will be counseled by the Director of the Cellular and Molecular Physiology Graduate Program, at which time, the status of the student's enrollment in the program will be discussed.

## **Lab Rotations:**

Research represents the core of the training experience in the CMP program, and has two phases – the laboratory rotations and the dissertation research. Research in the first year is in the form of three research rotations in different laboratories. The purpose of the research rotations are, in order, to allow students and mentors to identify a good match for subsequent thesis research, to provide the student with technical and scientific skills in several specialized areas of physiology, to strengthen social interactions within the program and its member laboratories.

**Eligible Faculty for Lab Rotations.** Rotations must be done with faculty who are members of CMP. This includes all faculty members with primary appointment in the Department of Physiology as well as those from other Departments who have been accepted into CMP. An updated list of faculty can be obtained from the Academic Administrator or Program Director.

**Students will do three laboratory rotations.** These will engage the student in different research projects in three different laboratories working in different areas.

**Familiarity with the research of the faculty.** At the start of the semester, the office will arrange appointments of 30-60 minutes between the students and each faculty member to give the student an opportunity to learn about the research goals of that laboratory and to discuss possible rotation projects.

**Prior to each rotation cycle, faculty will be asked to indicate whether or not their lab is available in the next rotation.** Acceptance of a rotation student implies that the student will be considered for thesis work in that lab. A student may rotate in a lab to gain experience in a specific technique even though that lab is not open for thesis work, as long as this is made explicit prior to the rotation. The Program Director will assign students to rotations, and if unusual circumstances arise will consult the faculty. No more than one CMP student may rotate in any lab at the same time.

**First rotation.** After meeting with all faculty, the student will submit the names of three faculty members with whom they would like to do a rotation to the Program Director. The student may include a brief statement of why they desire a rotation in a particular lab. There is a limit of one CMP student per lab for the first rotation.

**Second rotation.** The student will submit a rank-ordered list of three faculty with whom they would like to do a rotation, with the highest preference listed first. The student must speak with each faculty member on the list before submitting a name. The student may include a brief statement of why they desire a rotation in a particular lab. There is also a limit of one CMP student per lab for the second rotation.

**Third rotation.** The student is free to choose any CMP-affiliated laboratory. The Director must be informed of the students' choice one week before the beginning of the third rotation. There is no limit on how many CMP students can rotate in a given lab, as long as the faculty member agrees.

**Duration of rotations.** The rotations cumulatively last approximately 10 months. All rotations together should not exceed 12 months, i.e., the student must select a lab for thesis work before the beginning of the second year of the program.

**Rotation Presentations.** Students will present results from each of their rotations at the Friday Seminar series, as scheduled by the program.

**Research Credits.** Students will register for Research in Physiology. Grades will be assigned by the Program Director with input from the faculty

**Lack of progress.** A student who fails to enter a thesis laboratory before the start of their second academic year is not making adequate progress, and may be dismissed from the program.

**Evaluations.** The mentor will provide a written evaluation of the student's progress to the Program Director at the end of each rotation.

**Lab Selection.** At the end of the third rotation, students are asked to select a laboratory for their thesis. In rare occasions, and with the permission of the Program Director, students may be allowed to do a fourth rotation.

## **Student Advisor During the First Year**

During the first year, the CMP Program Director serves as the student's advisor.

## **Year Two Requirements**

### **Graduate Board Examination:**

It is University policy that all students successfully pass a Qualifying Oral Examination (GBO). CMP students shall schedule and take this examination between January 1<sup>st</sup> and March 31<sup>st</sup> of their second year. Students should arrange at least one mock GBO as a requirement before their actual GBO Oral Exam; students should arrange it themselves. At the beginning of the exam, students should be prepared to give a short (5-10 minutes is standard) overview of their proposed thesis research. The exam typically takes two hours, but students should allow three hours, when scheduling.

The goals of the exam are to test the depth and breadth of knowledge as covered in the first-year coursework and to examine the student's ability to design and interpret experiments.

### **Structure of the Oral Exam Committee**

The Graduate Board Oral Examination is conducted by five faculty members. The committee consists of three "inside" members who must be a part of the Cellular and Molecular Physiology (CMP) Graduate Program, and two outside members who are not affiliated with the program. Faculty holding joint and secondary appointments with the Department of Physiology are considered as "inside" the department. Two alternates must also be selected, one from inside and one from outside the Program. At least one examiner from outside the department must be an Associate or Full Professor, and the senior outside faculty member will serve as Chair of the Oral Exam Committee (as determined by the Graduate Board). The advisor may not be included on this committee.

### **Selection of the Oral Exam Committee**

Students may, with input from their preceptor, suggest the members for this committee to the Program Director by submitting a list of prospective names prior to scheduling the exam. Since the mandate of the committee is to test the breadth and depth of the students' knowledge, there should be a diversity of expertise on the committee. Faculty members whose research spans disciplines may fill the requirement of any of their areas of expertise. If you propose an Oral Exam Committee which the Program Director feels is too narrowly focused, you may be asked to broaden the scope by suggesting alternate members on your list and resubmitting. Alternatively, the Program Director may select other members. While the student is allowed input into the selection of the committee, the final composition of the committee is determined by the Program Director.

### **Outcomes for the Exam**

The result of the examination will be either Unconditional Pass, Conditional Pass, or Fail. An Unconditional Pass is self-explanatory. A Conditional Pass means that the committee noted a deficiency that needs to be addressed to ensure the student has the necessary foundation for success. A Fail does not mean immediate dismissal. Instead, the student is typically given an opportunity to retake the exam with the same or a new committee. Other conditions will be stated on the Oral Examination form. A second Fail will result in dismissal from the program.

### **Dissertation Research:**

The goal of the dissertation research is to provide the student with mentored training in how to perform advanced research in physiology. Through this training the student should develop the skills and knowledge that will allow them to become a successful independent scientist. This includes being able to understand difficult problems, pose well stated hypotheses, design experiments to test specific hypotheses, perform and interpret experiments, present findings orally and in written form, communicate with other scientists, collaborate with other scientists, evaluate science productively and critically, and other skills expected of a PhD.

Students will generally be assigned to a laboratory after their third rotation, based on mutual agreement with the head of the lab. Research toward a PhD thesis will be performed under the guidance and direction of a program faculty member. Together, they will define the focus and direction of the proposed dissertation research.

### **Research Seminars**

There are currently two seminar series in the Department, a Wednesday seminar normally given by prominent scientists from outside the department and a Friday seminar given by faculty, students and postdoctoral fellows associated with the Department of Physiology. Beginning in the first year, and continuing throughout their education CMP students are expected to attend both of these regularly. Students are also expected to present progress on their research during the Friday seminar at least every other year.

### **Physiology Journal Clubs**

CMP students are expected to participate in the student run journal club that is held on alternating Fridays.

### **Thesis Committee:**

The thesis committee consists of the advisor and a minimum of three additional faculty (full-time Johns Hopkins faculty that are assistant professors or above) who are knowledgeable in the relevant field of study and whose expertise may be beneficial to the students project. There are no other restrictions on the composition of the committee, but it must be approved by the student's advisor. The first thesis meeting should take place as soon as practical after successfully completing your Oral Exam and required courses, but not later than August 15th at the end of the second year. Prior to the first thesis meeting, a thesis proposal, typically in the format of an NIH fellowship application, is prepared and distributed to the thesis committee 1 week before the actual meeting. If the student has previously written a fellowship in the format of a different funding agency, this may be used in lieu of the NIH format (max length 6-7 pages).

### **Years Three and Up Requirements**

#### **Thesis Committee:**

For every thesis committee meeting after the first one, a brief description of progress made in the year since the last thesis committee meeting will be prepared and distributed to all Thesis Committee members at least 1 week in advance of the meeting. Meetings must be held once per year following the initial meeting. A thesis committee form that outlines progress of a student should be completed at each meeting and turned into the Program Director. Students beyond Year 5 can be required to hold thesis committee meetings every 6 months as they near completion of their dissertation research. Students will receive an email reminder from the Academic Program Administrator approximately 60 days prior to this deadline. If the student fails to hold his/her annual meetings by the established date, they can be placed on academic probation with a stated deadline to hold the thesis meeting.

#### **Electives:**

Four (4) electives must be completed as a part of the degree requirements. These 4 electives must be completed by the end of Year 5. Courses must be germane to the student's studies in physiology, as determined by the Program Director. One elective credit is 12-24 classroom hours, or equivalent. Up to one required elective can be satisfied by a course taken outside of Johns Hopkins. For a course to satisfy an elective requirement it must be relevant to the student's course of study, of high educational quality and substantive in terms of effort (such as summer courses offered by MBL and CSHL). Credit will be granted if a student receives a grade of B- or higher or a Pass. Also, two of the four elective requirements may be satisfied for those students who earned a Master's degree prior to matriculating into CMP. This decision is at the discretion of the Program Director and will be based on whether such prior coursework met CMP standards for an elective, the subject matter, and the final grade.

#### **Student Individual Development Plans:**

The NIH has implemented a new process to make sure that each trainee supported by NIH funds has an individual development plan (IDP). This process includes a mentoring meeting between the student and the advisor that must occur annually before the thesis committee meeting. The goal of the meeting is to discuss the student's academic progress and next steps, to identify the student's professional development goals and any next steps, and how the advisor can be helpful regarding each goal. To facilitate the discussion, the two parties must complete the on-line "Annual Academic Progress and Professional Development Form".

There are 4 parts to this Annual Session:

1. The above hyperlink will open a form that requires jhed sign in and has links to the Qualtrics surveys;
2. Once the mentor and mentee individually fill out their surveys, they save a pdf and share with each other before discussing the assorted questions and answers;

3. Based on this discussion, an action plan will be formulated and agreed upon;
4. Each person will sign and date a record of completion document and submit this signed document to Madeline McLaughlin (can be digitally signed).

The thesis committee meeting form has a box to check to ensure that the mentoring meeting has been held. Additionally, at the end of the thesis committee meeting, the advisor must leave the room so that the student can talk alone with the committee members.

### **Mentoring Guidance and Expectations**

The "[Policy on Mentoring Commitments for PhD Students and Faculty Advisors](#)" has three parts: 1) the "[JHU Mentorship Commitments of Faculty Advisors and PhD Students](#)" must be distributed annually to all PhD students and advisors, 2) identification of a point person (Dr. Steven Claypool) at the school or program level to whom students can go with any concerns about mentoring, and 3) to implement at least 2 strategies designed to support an environment of good mentoring in the school, which provides many options.

### **Dissertation:**

Usually in year four or five, the student's thesis committee agrees that the student is nearing completion of his/her research. When a student receives a "**final phase**" check at the thesis committee meeting, they are expected to complete any remaining experiments, write their thesis, and get approval from their PI and reader (in the form of a signed readers' letter) within 6 months. The student's research is usually published in one or more scholarly journals prior to the dissertation being written. The institution requires that the dissertation is a "publishable body of work."

Writing the Thesis. The dissertation research culminates in the writing of a PhD thesis. Approval to begin writing a dissertation is given by the thesis advisor, in consultation with the thesis committee. The Thesis shall be prepared in accordance with institutional guidelines. Per institutional requirements, the final dissertation must be approved by two faculty members.

Thesis Seminar. Following completion of the dissertation, the student will present their work at an open seminar. With approval of the Program Director, this seminar may under some circumstances be given prior to the final submission of the dissertation.

Time To Degree: The progress of biomedical research is unpredictable. Therefore, the time it takes each student to complete the doctoral degree will vary. Each student's research progress will be evaluated by the student's preceptor on a regular basis, and by their thesis advisory committee on an annual or semi-annual basis. The Program expects most students to complete their degree within 5 years of entering the Program, with some students finishing in the 6th year. A terminal Master's degree will be given if the Ph.D. is not complete by the end of Year 9, unless the Policy committee approves an extension due to extenuating circumstances. Students must be in their final phase for the Ph.D. thesis research requirement no later than 6.5 years. Note that official Leave of Absence is not included in the total training time.

### **Masters of Science Degree**

A student has the option to leave the CMP Program with a Master of Arts degree if:

- 1) He/She has successfully completed all first year requirements and unconditionally passed the qualifying exam, or
- 2) He/She has successfully completed all first year requirements and writes a Master's thesis on research completed in year two.

### **6) Students of Faculty Who Leave the School of Medicine**

Students whose thesis advisors have left the institution may continue their project at Hopkins under the supervision of a new CMP mentor. Students who have chosen a mentor, but have not passed their GBO, are expected to transfer to the new institution if they intend to follow their mentor. In some instances, students who have chosen a mentor and successfully completed their oral exams and two full years at JHU may remain in the CMP program while carrying out research with their mentor at another institution. They are required to return for yearly thesis committee meetings and to present the formal thesis seminar at the end of their training.

## **7) Other Activities**

### Teaching Skills

Students interested in gaining teaching experience may request this of the Program Director. With the approval of the student's mentor, teaching duties will be provided as available.

### HIPPA Training and other Institutional Requirements

The Johns Hopkins School of Medicine requires a number of courses, depending on the type of research a person is engaged in. This includes courses on the privacy of health care information (HIPPA), safety rules for various types of research, etc. Students shall complete these courses as required for their specific area of research.

## **8) Other Policies**

The CMP adheres to all institutional policies set forth by the relevant governance structure, including the Johns Hopkins University Doctoral Board, the School of Medicine MA-PhD Committee. These include:

### Vacation Policy

Currently, beyond the official University holidays and breaks, students may take 15 days (3 weeks) of vacation. Additional time off may be granted by mentor. In addition, it is CMP policy that students must notify their mentor at least 4 weeks in advance when they plan a vacation of 5 weekdays or more. It is also the students' responsibility to schedule any vacations in a way that they continue to make satisfactory progress in their research. Further, unused holidays cannot be accrued and later used as vacation or time off without approval of the mentor prior to the holiday in question. Likewise, unused vacation cannot be accrued to later years without prior approval of the mentor.

### Leave of Absence (Sick, Parental, Terminal Leave)

Students may take 15 calendar days of sick leave per year that can be applied to pregnancy and childbirth. Under special circumstances, this period may be extended by the training program director or the sponsor. Sick leave is not accrued. For medical leave of absence, health insurance will be paid for by the program or sponsor for up to one year. Students are allowed up to 2 years total medical leave of absence. If a medical leave of absence is longer than 2 years, students are required to reapply to gain re-admission to their graduate program. Parental leave of 30 calendar days per year can be used for the adoption or birth of a child. A period of terminal leave is not permitted and payment may not be made from grant funds for leave not taken.

### Abuse and Misconduct

The CMP shall provide a training environment that is free of abuse and misconduct. Allegations of abuse and or misconduct will be investigated by the Program Director, and referred to the appropriate institutional office as needed. In the case where the Program Director is conflicted, the Chair of the Department shall be responsible for the initial investigation.

### Policy for Probation, Funding Withdrawal, and Dismissal

The CMP Graduate Program Policy for Probation, Funding Withdrawal, and Dismissal addresses consequences of student underperformance. Failure to meet any Program requirement by the specified deadline can result in placement of the student on probation. Dismissal from the CMP Graduate Program is a possible consequence of failing to successfully complete probation terms. Students may also be subject to dismissal without a formal probation period under certain circumstances.

### Internships

A student who has completed their 1<sup>st</sup> year required courses, passed their GBO examination and held their first thesis committee meeting is eligible to pursue an internship opportunity either through the Johns Hopkins University School of Medicine Biomedical Careers Initiative (BCI) or elsewhere. Such opportunities should be pursued *after obtaining approval in advance from his/her faculty mentor, the Program Director and the Associate Dean for Graduate Student Affairs*. Students who secure internship opportunities independently of BCI must register the internship with BCI and follow all BCI procedures for completing an internship. During internships, domestic students must be placed on Leave of Absence (LOA) by the Program and are paid by the organization hosting their internship. International students are maintained on active status due to VISA restrictions but also paid by the organization hosting their internship. Students may also receive compensation

as teaching assistants (TA) or graders for JHU courses and/or through tutoring for students in the Program. These are considered excellent opportunities to gain teaching experience. However, as these activities can detract from thesis research activities, *the student must obtain permission from the faculty preceptor*. Other outside employment is prohibited. Extenuating circumstances may be considered on a case by case basis, and procedures for obtaining outside employment in these cases will adhere to the “Graduate Student Employment and Consulting Policy”.

Biomedical Career Initiative (BPI)

The [Biomedical Careers Initiative](#) (BCI) works closely with the Professional Development and Career Office (PDCO) to actively promote career development. BCI offers internship opportunities, networking events, and seminars exploring the broad range of career options available to Ph.D. graduates.

Attachments: Academic Ethics Policy and Honor Code  
Statement of the Rights and Responsibilities of PhD Students at Johns Hopkins University  
CMP Record of Annual Thesis Committee Meeting  
JHU Mentorship Commitments of Faculty Advisors and PhD Students

## Cellular and Molecular Physiology Graduate Program

### Academic Ethics Policy and Honor Code<sup>1</sup>

The strength of the scientific community depends on academic and personal integrity. At Johns Hopkins University and in the Physiology Graduate Program, we expect students to be aware of, and adhere to, the Johns Hopkins University non-academic [Student Conduct Code](#). Ethical violations are taken seriously and may result in dismissal from the Physiology program. This document was assembled to educate each student regarding such violations, and gives definitions and examples below.

Academic ethics violations include any action or attempted action that may result in creating an unfair academic advantage for oneself or an unfair academic advantage or disadvantage for any other member or members of the academic community. Academic ethics violations include a wide variety of behaviors such as cheating on exams, plagiarism, re-use of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, unfair competition, infringement of the rights of others, altering academic documents or transcripts, gaining access to materials before they are meant to be available, and helping another individual to gain an unfair academic advantage. Nonexclusive examples of academic ethics violations are listed below.

If you witness an academic ethics violation, you also have an obligation to report it to a course director, faculty advisor, CMP Director (Dr. Steven Claypool), or Associate Dean for Graduate Student Affairs (Dr. Peter Espenshade). If you are not sure whether a violation occurred, you can confidentially consult with any of these same people. These matters are handled with discretion.

Questions regarding this Policy can be addressed to CMP Graduate Program Director. We want you to clearly understand the program's expectations of you and the ethical standards that students and faculty follow. ***Ignorance of this Policy will not be accepted as an excuse.***

#### **Note Regarding Outside Courses**

Students in this Program may enroll in courses in one or more other University divisions or schools. Students are subject to this policy not only when enrolled in School of Medicine courses, but also when enrolled in courses in other University divisions or schools. Academic ethics violations in the context of those "outside" courses will be subject to and resolved under this policy.

#### **Note Regarding Research Misconduct**

Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. Research misconduct does not include honest error or differences of opinion. For a complete definition, refer to The Johns Hopkins University Research Integrity Policy ("Policy") available at [https://www.jhu.edu/assets/uploads/2017/08/university\\_research\\_integrity\\_policy.pdf](https://www.jhu.edu/assets/uploads/2017/08/university_research_integrity_policy.pdf). The Policy applies to all University faculty, trainees, students, and staff engaged in the proposing, performing, reviewing, or reporting of research, regardless of funding source. Allegations of research misconduct regarding a student should be referred to the Research Integrity Officer for assessment under that Policy, but may also be directed to the department chair or Dean of the responsible unit where the

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<sup>1</sup> This Policy was adapted from the equivalent document of the Pharmacology Graduate Program at JHMI provided by Dr. Caren Freel Meyers.

alleged research misconduct occurred. The procedure for addressing allegations of research misconduct at the School of Medicine is additionally governed by the Johns Hopkins University School of Medicine Procedures for Dealing with Issues of Research Misconduct. If a violation of this Policy is suspected, the case will be turned over to the office of the Associate Dean for Graduate Student Affairs, and a disciplinary hearing will be held if warranted. If it is determined that a student has violated any component of the honor code, he/she is may be subject to one or more sanctions, including without limitation dismissal from the Program.

## **ACADEMIC ETHICS VIOLATIONS & DEFINITIONS**

### **Plagiarism**

Examples of plagiarism include:

- Use of material produced by another person without acknowledging its source (including but not limited to an internet source)
- Submission of the same or substantially similar work of another person, such as an author or fellow student
- Improper documentation of quotations, words, ideas, or paraphrased passages taken from published or unpublished sources (including but not limited to an internet source)
- Use of another person's work (e.g., lab data, experiments) and representing it as one's own
- Unauthorized submission of a paper as original work when the paper has received credit in another course
- Paraphrasing of another person's characteristic or original phraseology, metaphor, or other literary device without acknowledgment

Remember that any words taken verbatim from a source must be cited and contained within quotation marks. Even if you have paraphrased an idea from a source you must provide the appropriate citations. For help with citations, the Hopkins' Eisenhower Library has this resource: <http://guides.library.jhu.edu/citing>. IT@Hopkins and the Welch Medical Library provide free subscriptions to [Refworks](#) to all Hopkins affiliates.

### **Cheating**

- Use of unauthorized materials (e.g., devices, notes, books) during an in-class or take-home examination
- Consultation of unauthorized materials while being excused (e.g., on a bathroom break) from an exam room
- Copying answers from another student or allowing another student to copy your answers
- Unauthorized discussion of an exam's content during its administration
- Obtaining an examination or answers to an examination prior to its administration
- Studying from an old exam whose circulation was prohibited by the instructor
- Acting as a substitute for another or utilizing another as a substitute during an evaluation of any type
- Any unauthorized dissemination, reproducing, displaying, sharing, or transmitting of any course material content (e.g., slides, recordings, tests, exams), whether for compensation or not, such that other student(s) have access to such materials
- Use of paper writing services or paper databases on the Internet
- Consultation of unauthorized electronic devices (e.g., calculators, cellular phones, PDAs, computers) during exams
- Use of electronic devices to communicate within or outside an examination room (e.g., 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 exam
- Improper use during examination of email, text paging, beaming, and instant messaging

- Collaboration on take home assignments, exams, or papers, unless explicitly approved by the course director
- Submission of an examination or assignment for regrading after making changes to the original answers

### **Forgery and Falsification**

- Falsification or invention of data in laboratory experiments or data analysis
- Citation of nonexistent sources or creation of false information
- Attributing to a source ideas or information not included in the source
- Forgery of university documents, such as academic transcripts and letters of reference

### **Lying**

- Request for special consideration from faculty 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
- Falsely claiming to have completed and/or turned in an assignment
- Falsely reporting an ethics violation by another student
- Impersonating a faculty or staff member.
- Failing to identify yourself honestly in the context of an academic obligation.

### **Facilitating Academic Dishonesty**

- Intentionally or knowingly aiding another student to commit a violation of academic conduct
- Allowing another student to copy from one's exam during administration of the exam
- Providing copies of course material whose circulation was prohibited (e.g., exams or assignments) to students enrolled in or planning to take that course
- Taking an examination or completing an assignment for another, or permitting one to do so

### **Unfair Competition**

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

### **HONOR CODE**

#### **Infringement on the Rights of Others**

- Using behavior that jeopardizes the rights, health, safety or welfare of members of the JHU community, or jeopardizes the orderly functioning of University related activities
- Assault, destruction or defacement of property, theft, and disruption of classes or other events

#### **Violation of any of the rules and regulations of the Johns Hopkins University and the School of Medicine**

**PROCEDURES**

Violations of this Policy will be resolved pursuant to the School of Medicine Procedures Relating to Student Discipline available at <http://www.hopkinsmedicine.org/som/students/policies/discipline.html>.

As a Cellular and Molecular Physiology graduate student at The Johns Hopkins University School of Medicine, I pledge to follow the Policy outlined above. By signing, I acknowledge reading and understanding this Policy.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Statement of the Rights and Responsibilities of Ph.D. Students at Johns Hopkins University

**Preamble:** Ph.D. education is fundamental to the University's teaching and research mission. For an intellectual community of scholars to flourish, it is important to acknowledge the principles that underlie the compact between Ph.D. students, the faculty, and other members of the University community.

It is in this spirit that the Doctor of Philosophy Board, in collaboration with faculty and students from across the University, has articulated a statement of rights and responsibilities for doctoral students at Johns Hopkins. The principles described in this document are to be realized in policies established by the various Schools of the University; the Schools will also develop mechanisms to monitor and enforce such policies.

### RIGHTS

1. **Ph.D. students have the right to education, supervision and training.** This includes access to the classroom, laboratory and teaching opportunities necessary for completion of degree requirements, appropriate and regular faculty supervision consistent with the norms of the discipline, as well as appropriate research and/or clinical experiences.
2. **Ph.D. students have the right to full and regular access to information about the requirements for the degree.** This includes information regarding program requirements, assignment/selection/change of advisor, expected time to completion, graduation rates, and conditions of financial support.
3. **Ph.D. students have the right to conditions of learning, teaching and research that are appropriate and reasonable for their discipline.** This includes the right to information and ongoing consultation regarding their expected effort and specific duties, as well as clearly stated criteria for participation in collaborative work and/or research.
4. **Ph.D. students have the right to be treated in a respectful and professional manner by all members of the University community.** This includes freedom from discrimination and harassment as well as assurance of reasonable confidentiality in their communications, as governed by university policy.

5. **Ph.D. students have the right to receive, on a regular basis, written evaluation of their progress and to be informed of the criteria upon which the evaluation is based.**  
Students should also be provided with opportunities to discuss such evaluations with their advisor. Each program should make available their policies concerning academic probation, funding withdrawal, and dismissal; reasonable warning should be provided in advance of dismissal based on failure to make satisfactory academic progress.
6. **Ph.D. students have the right to appropriate recognition for their contributions to research and scholarship.** This will require discussion between the student, advisor and other relevant parties regarding expectations for student contributions and the nature of the recognition.
7. **Ph.D. students have the right to academic freedom.** This includes the right to express, without reprisal, independent opinions about scholarly issues (such as opinions regarding theoretical and methodological debates in their disciplines), opinions regarding matters of institutional policy, concerns about suspected research misconduct and personal opinions on public matters.
8. **Ph.D. students have the right to have their views represented in the development of policies that govern the Ph.D.** Student ideas and perspectives should be solicited and considered if substantive changes in the structure of a Ph.D. program are anticipated.
9. **Ph.D. students have the right to clearly defined policies regarding benefits and non-academic issues pertinent to their student status.** These policies should cover (but not be limited to) such things as the provision of health care, recognition of family responsibilities, leave, vacation and other absences. These policies should acknowledge that students can, without reprisal, form clubs, associations or organizations around common interests, as long as these are consistent with general non-discrimination policies of the University.
10. **Ph.D. students have the right to accessible procedures for redress of their grievances.** Each School within the University must provide mechanisms to ensure that grievance procedures are fair and without reprisal. These procedures should include Ph.D. student representation, as appropriate.

