CMM Policy Booklet

Graduate Training Program

In

Cellular and Molecular Medicine

The Johns Hopkins University
School of Medicine

September 2020
**TABLE OF CONTENTS**

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>PAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Program Leadership</td>
<td>03</td>
</tr>
<tr>
<td>2  Program Direction</td>
<td>03</td>
</tr>
<tr>
<td>3  Program Description</td>
<td>05</td>
</tr>
<tr>
<td>4  Diversity &amp; Inclusion</td>
<td>14</td>
</tr>
<tr>
<td>5  Evaluation of Students</td>
<td>14</td>
</tr>
<tr>
<td>6  Procedures for Choosing Rotations and Thesis Environment</td>
<td>15</td>
</tr>
<tr>
<td>7  Presentations of Rotation Research</td>
<td>15</td>
</tr>
<tr>
<td>8  Procedures for the Oral Examination Committee</td>
<td>16</td>
</tr>
<tr>
<td>9  Possible Outcomes of Oral Qualifying Exam</td>
<td>17</td>
</tr>
<tr>
<td>10 Thesis Committee Meetings</td>
<td>17</td>
</tr>
<tr>
<td>11 Thesis Requirements</td>
<td>19</td>
</tr>
<tr>
<td>12 Required Electives</td>
<td>20</td>
</tr>
<tr>
<td>13 Financial Support of Students</td>
<td>20</td>
</tr>
<tr>
<td>14 Faculty Appointments to the CMM Program</td>
<td>20</td>
</tr>
<tr>
<td>15 Transfer Students</td>
<td>21</td>
</tr>
<tr>
<td>16 Students of Faculty Who Leave the School of Medicine</td>
<td>21</td>
</tr>
<tr>
<td>17 Applying for a Leave of Absence</td>
<td>21</td>
</tr>
<tr>
<td>18 Program Policy on Abuse and Misconduct</td>
<td>22</td>
</tr>
<tr>
<td>19 School of Medicine Campus Contacts</td>
<td>23</td>
</tr>
</tbody>
</table>
1. PROGRAM LEADERSHIP

Program Director: Rajini Rao (2008-present)

<table>
<thead>
<tr>
<th>Policy Committee Faculty Review</th>
<th>Admissions Committee</th>
<th>Advisory Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajini Rao</td>
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<td>Robert Casero</td>
<td>Rajini Rao</td>
<td>Diane Griffin</td>
</tr>
<tr>
<td>Andrea Cox</td>
<td>Wenzhen Duan</td>
<td>Peter Agre</td>
</tr>
<tr>
<td>Jennifer Erwin</td>
<td>Alan Friedman</td>
<td>Mark Anderson</td>
</tr>
<tr>
<td>Marie Hardwick</td>
<td>Sandra Gabelli</td>
<td>Gundula Bosch</td>
</tr>
<tr>
<td>Susan Michaelis</td>
<td>Daniele Gilkes</td>
<td>Janice Clements</td>
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<td>Lew Romer</td>
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<td>Karen Sfnos</td>
<td>Ryan Riddle</td>
<td>William Nelson</td>
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<td>Jiou Wang</td>
<td>Dipali Sharma</td>
<td>Damani Piggott</td>
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<td>Katherine Whartenby</td>
<td>Ramana Sidhaye</td>
<td>Antony Rosen</td>
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<td>Cynthia Zahnow</td>
<td>Vasan Yegnasubramanian</td>
<td>Robert Siliciano</td>
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<tr>
<td>Student Representative</td>
<td>Cynthia Zahnow</td>
<td>Solomon Snyder</td>
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2. PROGRAM DIRECTION

Mission Statement
The Graduate Training Program in Cellular and Molecular Medicine prepares scientists for laboratory research at the cellular and molecular level with a direct impact on the understanding, diagnosis, treatment and prevention of human diseases. The Ph.D. graduates of the Program obtain rigorous training in scientific research and a thorough knowledge of human biology and human diseases.
The Program
The CMM program grew out of a need for training at the interface between medicine and the traditional basic science disciplines. Rapid progress in cellular and molecular biology has strongly impacted clinical medicine, offering insights on fundamental causes of many diseases. Now new discoveries in the laboratory can be applied rapidly to the diagnosis, treatment and prevention of disease. This has been made possible by emerging technology that allows scientists to identify genetic and molecular defects causing or predisposing to disease.

The trainees in this program are working precisely at this interface between science and medicine where they will be able to contribute to the long term well-being of society.

Administrative Structure
A director, elected by the Advisory Board, heads the CMM program. The major responsibility of the Director is to oversee faculty issues, to advise students, to carry out the policies of the program, and to chair the Policy Committee. The Advisory Board is composed of faculty from the basic science and clinical departments. Major policies of the Program must be approved by the Advisory Board.

Decision Making
Routine decisions concerning student affairs and daily operations of the program are made by the Director. The Director meets monthly with the Policy Committee whose role is to formulate policy to be presented to the Advisory Board for discussion and approval. The Program Director also meets with the Advisory Board to discuss issues involving the Program and the School of Medicine.

Among graduate programs, CMM is unique in that faculty membership does not occur simply because the faculty member has an appointment in a department or institute. Rather, membership occurs through application. Thus, the Faculty Review Committee is tasked with maintaining the faculty size to a 1:1 ratio to optimize faculty and student interactions. New faculty are selected based on the relevance of their research program along with the availability of resources and suitability of the lab environment for graduate students.
3. PROGRAM DESCRIPTION:

Year 1  Seven Core Courses
CMM Core Discussion
Topics in CMM
Laboratory Rotations

OPTIONS: Opportunities for Professional Training In Occupations for Scientists
Selection of a Mentor and Thesis Lab

Year 2  Three Core Courses
Principles of Immunology I/Topics in Immunology I
CMM Grant Writing
Research Ethics Requirement
Oral Qualifying Examination

OPTIONS: Opportunities for Professional Training In Occupations for Scientists
Research Leading to a Thesis Proposal
Holding First Thesis Committee Meeting

Years 3+  Four Electives  MANDATORY: 1 elective must be a Biostatistics course.
3B’s: Bench to Bedside and Back (3rd and 4th years only)
Dean’s Research Integrity Colloquium series (Minimum 2 per yr. Link below)
https://www.hopkinsmedicine.org/research/resources/offices-policies/OPC/Research_Integrity/research-integrity-colloquia-main.html
Annual Thesis Committee Meetings
Thesis Research and Presentation
Refresher Research Ethics every 4 years

Electives must be science related courses that add to your body of knowledge. Other topics include virology, human anatomy, immunology, bioorganic chemistry, neuroscience, physiology, histology, pathobiology and biophysical chemistry.

Grading Policy:
Students are expected to pass all classes with a grade of B or better. The Grant Writing and the Research in CMM courses are tied to the annual thesis committee meetings. Grades will be withheld from reporting until the Program Office receives confirmation the thesis meetings have been scheduled (Grant Writing) and held (Research in CMM). Annual Thesis Committee Meeting forms are located on the CMM website (cmm.jhmi.edu).
**Absence from Campus:** All students must notify the CMM Office of any absence from Johns Hopkins University that is longer than 2 weeks, regardless of the reason. When in a thesis lab your PI must be apprised of any absence as well as, the CMM Office.

**International Travel:** We strongly encourage all students to register their international travel with the University. To register go to [http://cmm.jhmi.edu/index.php/important-links-you-need-to-know/](http://cmm.jhmi.edu/index.php/important-links-you-need-to-know/). Alert the Program Office what country or countries you will be traveling to.

**Core Course Descriptions:**

**Introduction to the Human Body** provides an overview of the major organ systems of the human body that involves gross and microscopic organization of the organ systems. The course is composed of didactic lectures and practical, hands-on exercises in gross anatomy and histology. The lectures are given by members of the CMM faculty and invited guests on the specific organ systems of their expertise.

**Molecular Biology and Genomics** deals with the central dogma of molecular biology and variations (RNA processing, reverse transcription), recombination, repair, regulation of transcription, message stability and translation.

**Fundamentals of Genetics** teaches Mendelian genetics (yeast), mutation and suppressor analysis, genetic mapping, epigenetic phenomena, cytoplasmic inheritance, sex, and genetics of multicellular model organisms.

**Cell Structure and Dynamics** covers a broad range of topics in cell biology including microscopy, organelles and cell structure, membranes, cytoskeleton and ECM, transport and controlled degradation of macromolecules, and mitosis.

**Pathways and Regulation** teaches metabolic pathways, signal transduction pathways, cell cycle, apoptosis, common regulatory themes, feedback, branch points, role of cellular compartmentalization and mechanisms of regulating protein activity.

**Cellular and Molecular Basis of Disease** provides an overview of selected inherited, infectious, autoimmune, clinically/socially prominent and organ specific diseases. This course emphasizes the cellular and molecular aspects of the pathogenesis and treatment of these diseases. Patient interactions are a highlight of this course.
**CMM: Introduction to Clinical Research:** The course learning objectives are to understand the practical steps involved in conceiving, conducting and translating clinical research. Students will be introduced to study designs used in clinical research. This course will also provide an overview of statistical analyses that affect clinical trials, as well as, discuss drug development. Various faculty will give inspirational lectures on their “clinic observations to clinical trials to clinic reality” stories. Student will work in groups for a class presentation.

**Required Course Descriptions:**

**Topics in CMM** is a seminar course that acquaints graduate students with the faculty to learn about the research opportunities for rotations and thesis projects. This course introduces the students to our faculty and their areas of expertise. Faculty members talk about their research and lab environment during the first quarter of the academic year.

**CMM Core Discussion:** This class is divided into three sections: 1) early classes are centered around student presentations on a current research article (Course Director Dr. Laura Wood), 2) the middle classes focus on **3R’s: Rigor and Reproducibility in Research** (Course Director Dr. Ken Witwer), and 3) the remaining classes discuss clinical trials in the literature with CMM clinical faculty as facilitators who discuss the paper they've selected. For the first section, students are randomly paired and assigned to present an article selected by the faculty member. The assigned students lead the class discussion and grade the one page summaries submitted by the remaining classmates. It is UNDERSTOOD that every student has read the paper in question BEFORE the class discussion commences. The 3R's section entails an online piece and classroom discussions. The clinical section differs from the first section in that the facilitator is a clinical faculty member who leads the discussion with the students fully engaged in the discussion.

**Laboratory Rotations:** Three rotations are mandatory. The Program Office assigns incoming students to a Rotation Advisors. The Advisors are as follows: Drs. Deborah Andrew, Fred Bunz, Bob Casero, Jefferson Doyle, Alex Kolodkin, Jennifer Pluznick, Rajini Rao, Ryan Riddle, Karen Sfanos and Ramana Sidhaye. The role of the Rotation Advisor is to assist the student in the process of selecting rotation labs. Each trainee, during his or her first year, is expected to complete three, ten-week research projects in different laboratories of his or her choosing within the CMM faculty. The main purpose of laboratory rotations is to assure that students have exposure to a variety of research topics, techniques and approaches, leading ultimately to the selection of a thesis mentor and lab. The CMM retreat, weekly seminars (Topics in CMM), and numerous departmental seminars offer the opportunity for students to become familiar with the research and scientific environment of CMM faculty members' laboratories.
OPTIONS: Opportunities for Professional Training in Occupations for Scientists:
The OPTIONS Career Curriculum, managed by the Professional Development and Career Office (PDCO), provides PhD candidates protected time to develop their career goals and prepare for the future in a manageable way. Through interactive workshops, students discover careers of interest, develop career-specific skills and build a professional network all while connecting with fellow trainees with similar interests.

In Years 1 and 2 (Career Awareness) by attending four (4) Investigating Careers and Networking iCAN events to learn about the various career opportunities available to PhDs for a total of 6 hours commitment over the two years. Mandatory requirement.

In Year 3 (Career Exploration) students join and OPTIONS Community to begin building career-specific skills while diving deeper into a field of interest. Mandatory requirement of attending 6 workshops (each are 2 hours) for a total of 12 hour commitment; additionally, complete an informational interview to fulfill the requirement.

Join one of the career communities listed below or bravely create your own path in consultation with the OPTIONS Program Director CJ Neely (CJ.Neely@jhu.edu).

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<tr>
<th>• Academic Research</th>
<th>• Science Policy and Communication</th>
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<tr>
<td>• Business Side of Science</td>
<td>• Biotech and Pharma</td>
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<td>• Academic Teaching</td>
<td>• Create-Your-Own</td>
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Academic Research teaches how to establish your research program, staffing your lab, managing vs. mentoring, grants and the tenure process, communicating your research, finding the right postdoc position.

Science Policy and Communication teaches policy careers in government, professional societies and for-profits regulatory policy, science writing and journalism, science publishing and editing, science outreach.

Business Side of Science teaches venture capital, business development, equity research, consulting, entrepreneurship, technology licensing.

Biotech and Pharma teaches understanding the process: discovery to development to manufacturing, leading a research team, drug patenting, regulatory affairs, clinical operations.
**Academic Teaching** includes teaching as scholarship, active learning, course planning, inclusive classrooms, grading and rubrics, presentations.

**Create-Your-Own** customizes your experience by attending any 6 workshops from the above career communities.

**In Years 4 and beyond**, students have up to 240 hours of protected time to pursue additional career and professional development activities to help them prepare for their career after graduate school. The PDCO focuses on providing support and guidance during this process (ie. one-on-one appointments, sharing opportunities of interest, etc). We encourage students to work with the PDCO to maximize your time at Hopkins and prepare for your future career.

**Year Two**

**Principles of Immunology I/Topics of Immunology I** introduces biological concepts of immunology, molecular nature of antigens, molecular basis for antibody and T-cell receptor structure and diversity, complement, hypersensitivity reactions, cellular basis for the immune response, cell-mediated immunity, adhesion molecules and coreceptors cell activation, cytokines and other soluble mediators, major histocompatibility complex (MHC) antigens, tumor immunology, transplantation immunobiology, mechanisms of resistance to microorganisms, tolerance, autoimmunity and immune-deficiency.

**CMM Grant Writing** course gives a general overview of the grant writing process to include the significant components of a hypothesis driven scientific grant application and its peer review process. Proposals for this course will be based on each student’s current thesis work and will be developed as the thesis proposal. Students are strongly advised to submit an NRSA F31 Predoctoral Fellowship for the December deadline.

**Research Ethics Course:** Each student must complete a course entitled **Introduction to Research Ethics** as a requirement for graduation and in compliance with our commitment to the protection of human research subjects. This course is taken beginning in the Fall of year two. The Introduction to Research Ethics course consists of two half day sessions (Fall and Spring) and is coordinated by the Office of Graduate Student Affairs. The course combines lectures and small group discussions to provide practical information on the ethical issues involved in research protocol, development and implementation. This training is valid for 4 years. Training must be repeated if graduation does not ensue within the 6 year time frame.
Electives: **Mandatory: one elective must be a Biostatistics course.** Students are required to take four elective courses to further broaden their experience in cellular and molecular medicine. A typical course is in a discussion format, with a half dozen students and one or two faculty. Some courses are organized by CMM faculty, and others are given by faculty in other departments. New courses will be organized in the future according to the interests of the faculty. Elective courses may include courses at the School of Public Health and Homewood Campus of the University. Students usually fulfill their elective course requirements during their third and fourth years of training.

**Thesis Advisor Selection:** During the first year, the Director oversees each student’s progress. After completion of the first year of study, the student chooses his or her thesis advisor from among the CMM faculty with whom he or she has rotated during the academic year. The chosen advisor must be a member of the faculty in the CMM Program. Co-mentoring situations are acceptable provided one mentor is a CMM faculty.

During the third rotation, students are sent a **Thesis Advisor Selection Form** to be completed and returned to the Program office. The completion of said form begins the transition from CMM oversight to the thesis advisor. Both the student and the newly selected advisor will receive the AAMC Compact between Biomedical Graduate Students and their Research Advisors ([www.aamc.org/gradcompact](http://www.aamc.org/gradcompact)).

**Oral Examination:** It is a University Dissertation Board policy that all students successfully pass a Qualifying Oral Examination. CMM Program policy requires that each student take this examination by the end of May of his/her second year. The examination committee is comprised of five faculty members; CMM assigns and schedules the exams. This examination evaluates the depth and breadth of the student’s knowledge in cellular and molecular medicine. The committee is given the student’s thesis proposal [written in the grant writing class] prior to the exam. The committee can begin their questioning with the thesis proposal and then transition into questions based on the core curriculum completed in year one.

**Thesis Committee:** Once the student has successfully passed their oral exam, the student and thesis mentor together fine tune the thesis project. The student then selects a committee of at least three faculty (not including thesis advisor) experts who, along with his/her thesis mentor, will act as advisors and oversee the project until its conclusion.

***MANDATORY: Each committee must have a Clinical co-mentor who is a practicing clinician that sees patients***.
**Year Three and up**

3B’s: Bench to Bedside and Back: ME:800.789  
**Course Director:** Dr. Cynthia Zahnow (zahnoci@jhmi.edu)  
**Course Eligibility:** 3rd and 4th year CMM students are required to take this class

**ACTIVITY APPROVAL OUTLINE INSTRUCTIONS:**

1) In collaboration with co-mentor, create an outline of your proposed 3B clinical activities divided into Fall semester and Spring semester.

2) 6 or more contact points are mandatory to be completed in the Fall semester.

3) 12 contact points are required for the academic year.

4) Outline is submitted once a year and is due on **September 15th**.

5) Any outline changes throughout the academic year must be **approved** by the course director.

6) If outline deadline is not met, a one page essay detailing the potential translational aspects of your thesis research should be submitted along with your outline. Format: Font Arial 11 single spaced with 1” margins.

**Course Description:** Students will engage in a set of mentored exposures to clinical activities that are individually tailored for relevance to their thesis research. Clinical exposure may help guide the translational potential of their bench science, assist in the design of pre-clinical models, and in setting up clinical trials or collaborations with the pharmaceutical industry. The data obtained from patient tissues or clinical correlates may help bring clinical research from the bedside back to the bench for continued improvement and refinement.

- A clinical co-mentor (verified practicing JHU clinician) is required for each CMM student’s thesis committee to assist in translational /clinical program exposure and training. If the thesis advisor is a practicing clinician, a clinical co-mentor is not required.

- The role of the clinical co-mentor is to help provide advice and to inform the student about opportunities in their department or subdivision for clinical exposure. Each disease or tumor type has their own unique set of clinical meetings and opportunities.

- We expect you, your mentor and co-mentor to collaborate when designing the clinical events in your proposal. The proposal can change throughout the year as long as the exposures are appropriate to your research. Clinical exposures on page two are a guideline; if you and your clinical co-mentor find new clinical activities not listed in the guidelines, they must be approved by the course director and will be added to the guidelines.
• Students are required to document their attendance at clinical events for this class. Documentation can include electronic attendance records, or signatures from the meeting organizer. Attendance forms on the CMM website are currently under construction. Submit forms to the clinical co-mentor for approval. Students must provide a brief written description of each clinical event attended, providing the title of the event, name of speaker or host, and explain the relevance to the student’s research….why did you and your clinical co-mentor select this activity.

• The clinical co-mentor must sign off on clinical activities each semester.

• Students will be randomly assigned to either a Fall or Spring semester presentation date. You are required to present a 3 min presentations (format similar to 3MT competition) describing how the clinical exposures added value to your training. One static slide is optional.

Examples of Clinical Opportunities and Contact Points May Include and are Not Limited to:

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<tr>
<th></th>
<th>Contact Points* per event</th>
<th>Maximum Points/ year</th>
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<tbody>
<tr>
<td>Clinical Seminars</td>
<td>1</td>
<td>3</td>
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<td>Journal Clubs</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Grand Rounds</td>
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<td>Morbidity and Mortality</td>
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<td>2</td>
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<tr>
<td>Shadowing of Clinician</td>
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<td>4</td>
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<td>Rapid Autopsy Program</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Discussion with pharmaceutical companies that sponsor clinical trials</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Tumor Boards</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Clinical Trial Working Groups</td>
<td>1</td>
<td>2</td>
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<td>Pain Conferences</td>
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<td>2</td>
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<tr>
<td>Translational Research Conference</td>
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<td>2</td>
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<tr>
<td>Departmental Visiting Professor Lecture</td>
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<td>2</td>
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*Contact Points are typically 1 hour each. However, in some cases, there may not be a 1:1 ratio for the number of hrs a clinical event takes and the number of contact points received. For example, shadowing may occur over a 4 hr window, but only 2 contact points may be earned.
**Seminars, Journal Clubs and Lab Meetings:** Trainees are expected to attend weekly seminars offered throughout the School of Medicine. These seminars are usually presented by invited speakers who are involved in cutting edge research. In addition, trainees are expected to participate in weekly Journal Clubs and lab meetings in their respective departments throughout their training.

**Thesis and Thesis Seminar:** The written thesis, based on research undertaken as a CMM student, is read by the advisor and another faculty member from the thesis committee called the referee/reader. Once approved, the student must present a formal public seminar on his or her completed thesis research. It is expected that the student's research will form the basis of scholarly articles published in the peer-reviewed biomedical literature. Thus, CMM does not have a publication requirement for graduation.

**Additional Features of the Program**

The Program organizes a number of additional events, which contribute to the richness of the graduate student experience. The **CMM Retreat** is held in early September at the Evergreen Carriage House. The retreat features a 3Minute Thesis competition and a poster session by upper-class students. Attendance is mandatory for all students. CMM faculty are invited to meet the first year students and celebrate the scientific achievements of the advanced students. We have found that the retreat provides a wonderful opportunity for the incoming students to become acquainted with the program's student body, faculty and their research.

Students have the opportunity to practice presenting and fielding questions about their research in a student organized "**CMM Sack...**" seminar series. These monthly luncheon get-togethers for students only offer a relaxed informal atmosphere and helpful critiques from peers.

The Program offers student-led **group tutorials** weekly as courses and needs suggest. Tutors are hand-picked upperclassmen who have received an outstanding grade in the course(s). Named after the CMM Program's originator, Dr. Thomas D. Pollard, these tutors are identified as Pollard Scholars and receive financial reimbursement for their efforts.

**Young Investigator's Day** is an annual School of Medicine sponsored event, which provides recognition and cash prizes to students who have conducted outstanding research. CMM students and faculty are extensively represented – we have had a student winning an award for sixteen consecutive years (1999-2014).
4. DIVERSITY & INCLUSION

The mission of Johns Hopkins Medicine is to improve the health of the community and the world by setting the standard of excellence in medical education, research and clinical care.

Diverse and inclusive, Johns Hopkins Medicine educates medical students, scientists, health care professionals and the public; conducts biomedical research; and provides patient-centered medicine to prevent, diagnose and treat human illness.

VISION

Johns Hopkins Medicine provides a diverse and inclusive environment that fosters intellectual discovery, creates and transmits innovative knowledge, improves human health, and provides medical leadership to the world.

CORE VALUES

- Excellence and Discovery
- Leadership and Integrity
- Diversity and Inclusion
- Respect and Collegiality

5. EVALUATION OF STUDENTS

First year students are closely monitored by the Program Director. Grades on all examinations in the core courses are reported to the Director. If a student has difficulty, the Director and/or the Course Director will speak directly to the student. Whenever indicated, individual tutoring is offered.

Students are required to pass all courses with a B or better. A student who receives a C in one core course must retake the course the following academic year. If a student receives two C grades they are generally dismissed from the program. The Policy Committee makes decisions regarding dismissal on a case-by-case basis.

In their second year, students take the oral examination mandated by the Dissertation Board of the University. The Director is kept informed of the student’s performance on this exam.

After the first year, students are evaluated by their thesis advisors and their thesis committees. Mandatory thesis committee meetings are held at least once a year to discuss the student’s progress and plans for the future. After each meeting, the thesis chair completes and submits a form reporting on the progress of the student and the project. Any substantial change in the
student’s educational program must be approved by the Director. If thesis research continues past 5 years, the student and advisor will prepare a plan that includes a timetable for completion of the thesis. This plan must be approved by the thesis committee in the beginning of the sixth year. This plan is presented to the Director by the student’s advisor.

6. PROCEDURES FOR CHOOSING ROTATIONS /THESIS ENVIRONMENT
The first rotation begins shortly after the beginning of the fall semester. This allows the student time to meet faculty so an informed decision about rotation laboratory selections can be made. All rotations must be performed in the laboratories of CMM faculty members. Before the start of the academic year, CMM faculty are polled to ascertain at what point(s) during the year their laboratory can accommodate students. This information is disseminated to the students through their respective Rotation Advisors.

Prior to the selection of their first rotation, students must meet with their assigned Rotation Advisor to discuss their interests and to identify a list of ten CMM faculty members with whom to meet. Students must hold monthly meetings with their Rotation Advisors. Monthly meetings will insure the students’ experience the breadth of possibilities and gain valuable insight into how to get the most out of a research rotation.

The Rotation Advisor has the responsibilities of assuring:

1. Students have diversity of experience in their first two rotations
2. Students work in laboratories in which they will be able to develop maximum potential
3. Students are distributed among the CMM faculty

Note: Fall rotation laboratories can only host one student. In the case of extenuating circumstances the Program Director must be notified by the Rotation Advisor.

Once the rotation laboratory has been selected by the student, it is the student’s responsibility to advise both the CMM office and their respective Rotation Advisor of the decision. Further, the student must secure the next rotation laboratory before the end of each rotation.

7. PRESENTATIONS OF ROTATION RESEARCH
At the end of the first and second rotation periods, the trainees either present a 10 minute short talk or a poster of their rotation projects. These presentations comprise an afternoon mini-symposium attended by CMM faculty and students. After the third rotation, a casual lunch is given whereby students declare whom they have chosen as their thesis advisor.
8. PROCEDURES FOR THE ORAL EXAM COMMITTEE

The CMM Program Office schedules the University mandated Dissertation Board Oral (DBO) exam for each student. The Director approves each student's committee selection. Exams are scheduled after the student has successfully completed the first year curriculum. The exams are typically held between October - November.

Each committee consists of 5 members and 2 alternate members.

- Of the 5 committee members, 2 members must be faculty in the department of his/her thesis advisor (but not involved in a close collaboration)

- The remaining 3 committee members and 1 alternate are selected from a pool of CMM faculty. The Hopkins University Graduate Board selects the committee chairperson based on seniority of these three members.

- The students' advisor selects the 2 remaining committee members and 1 alternate from faculty within his/her department. The advisor must notify the CMM Program Office with the names of the committed faculty members he/she scheduled for each of their thesis students.

- The student’s advisor is not a member of the exam committee but should be present for a few minutes at the beginning of the exam to briefly review the student’s progress with the committee.

The examination has two distinct parts:

1. Students present the specific aims from the thesis proposal written in the **Grant Writing class**. Students are expected to demonstrate their knowledge from their literature searches they did while preparing to write the thesis proposal.

2. Committees questioning will probe the breadth and depth of student's knowledge.

**Note:** Examination committees are given thesis proposal prior to the exam.
9. POSSIBLE OUTCOMES OF THE ORAL QUALIFYING EXAM

The Hopkins Dissertation Board allows one of three possible outcomes of the oral exam: unconditional pass, conditional pass, or fail. CMM policy guidelines are as follows:

Unconditional Pass:
It is expected that most students will receive an unconditional passing grade on the qualifying examination. The student will then proceed with the remainder of their course work and thesis.

Conditional Pass
1. The committee Chair or entire original committee should reconvene with the student to approve the fulfillment of conditions. The committee's final decision must be a pass or fail.
2. This second meeting should take place by the end of the same academic year as the original exam.

Note: If extraordinary circumstances make it impossible to meet these requirements, the Program Director should be consulted before the final result is reported to the student.

Failure
As stated in the Dissertation Board rules, there are three potential outcomes.
1. No further examination
2. Re-examination by the same committee at a later date. Second failure will lead to dismissal.
3. Re-examination by a different committee at a later date. Reasons must be provided for the change in committee membership and the new committee must have representation from the old committee. Second failure will lead to dismissal.

10. THESIS COMMITTEE MEETINGS

Beginning in Year Two and up, CMM students and their advisors MUST conduct yearly meetings with a thesis advisory committee. If this yearly meeting is not held, the thesis advisor’s laboratory will be CLOSED to future CMM students until the annual thesis committee is held and the paperwork from said meeting is filed in the CMM office. The Program Director will notify the thesis advisor of the laboratory’s status in writing.

The committee members, at least three in number, are experts in fields related to the student’s area of research and can contribute significantly to the direction of the research. They need not be members of the CMM Program.
10. THESIS COMMITTEE MEETINGS (Continued)

***MANDATORY: Each committee must have a Clinical co-mentor who is a practicing clinician that sees patients.***

Students select a chairperson whose role is to document each committee meeting, give students feedback on their progress, and, in general, act as the students' advocate if problems arise. Additionally, as each meeting comes to a close, the committee chair begins/continues the discussion regarding the student's future career plans. After each meeting, the thesis chair reports to the Director on the student’s progress. Results become part of the student's file. The thesis committee meeting form can be found on the CMM website/curriculum.

A thesis proposal, typically in the format of a NIH fellowship application (6 pages), is submitted for the **first thesis meeting**. Students may use their proposal from the 2nd year Grant Writing Course. For each subsequent meeting thereafter, a written update (2-3 pages, no more than 6 pages) describing research progress must be sent to committee members at least one week in advance. In addition, students must complete an IDP (http://myidp.sciencecareers.org/) and bring the results to each meeting for discussion. Copies of the initial proposal, progress reports and IDP will be filed with the Program Office.

For second year students who have just completed the **Grant Writing** course, their first thesis committee meeting **MUST be SCHEDULED** before the end of the academic year. This meeting should involve primarily a detailed discussion of the proposed thesis. For students in the third and subsequent years, the meeting should involve a discussion of both progress and plans for the future. **It is this committee** that decides when the research is sufficient for completion of degree requirements.

The **Naming of Thesis Committee** and the **Annual Thesis Committee Meeting** forms must be completed and filed with the Program Office as evidence of compliance. These forms can be found on the CMM website – CMM website/curriculum.

**NEW NOTE:** Thesis labs hosting a CMM trainee will hold an annual lab meeting on a topic relating to research ethics. The CMM office will provide materials upon request and compliance will be noted on the **Annual Thesis Committee Meeting**.
10. THESIS COMMITTEE MEETINGS (Continued)

NOTE: Program can opt to have a CMM Policy Committee member attend the last couple of meetings should it be deemed necessary to keep the student’s progress towards graduation moving.

From year six and up, a thesis committee meeting **MUST** be held every six months. If a student becomes an eighth year or beyond, not only must meetings be held every six months but a detailed plan of action to graduate the student must be written on the thesis committee meeting paperwork.

Penalties for non-compliance are:

1. Reappointment as a student in good standing will not occur
2. Registration for next academic year will be blocked
3. Course grade for Grant Writing will be reported as an Incomplete until the thesis meeting is held
4. If the meeting gets postponed and happens after the end of the academic year, the student is given 30 days in which to reschedule
5. Thesis Advisor's lab is **CLOSED** to future students indefinitely.

11. THESIS REQUIREMENTS:

**NEW requirements written in blue below.**

For a thesis to be acceptable, the student’s thesis committee must agree that the student's research has reached a sufficient level, is novel, is of sufficient quantity and makes a significant contribution to the field to warrant a PhD degree. CMM does not have a formal publication requirement. Rather, it is expected and understood that publications from thesis work will be forthcoming in a reasonable timeframe after the student has officially filed graduation paperwork with the program. This usually occurs after three to four committee meetings. The student is now ready to write his/her thesis. **When writing the dissertation, students will include all relevant aspects of the 3R’s – Rigor and Reproducibility in Research.** The thesis must be read and approved by the advisor and one other member of the thesis committee; these readers are known as the referees. Concurrently, the public thesis presentation is scheduled and must be given **BEFORE** the student is cleared for graduation. Along with other documentation required by the SOM Registrar's Office a formal letter of approval written by the referees must be submitted to the MA/PhD Committee. **Further, the reader’s official letter must certify the dissertation meets program expectations for rigor and reproducibility as part of the SOM graduation requirements.**

**MANDATORY:** Students must complete all graduation paperwork no more than 30 days after thesis seminar is given.
12. REQUIRED ELECTIVES MANDATORY: One elective must be a Biostatistics course. Students are required to complete 4 electives to satisfy University graduation requirements to receive a PhD degree. Most upper level seminar courses are offered by faculty in the School of Medicine. If the student signs up for a long course requiring several exams, this course may be counted as two electives with approval of the Director. Elective courses are available on many topics including immunology, bioorganic chemistry, neuroscience, physiology, and histology.

13. FINANCIAL SUPPORT OF STUDENTS
Typically, the program provides stipend, tuition and health/dental insurance for students through their first year of study. When the thesis advisor is selected (by July 1st) the advisor assumes stipend support, as well as, individual health/dental insurance. CMM covers the student’s tuition for the duration of their studies.

14. FACULTY APPOINTMENTS TO THE CMM PROGRAM
The CMM Policy Committee reviews all faculty appointments annually. Non-mentoring members of the Advisory Board, clinical affiliates and faculty who are actively serving as thesis mentors for current students are automatically renewed.

This formal mechanism is used as the basis for continuation of their membership in the program. Current faculty will be evaluated on their continued scientific excellence and integrity of research, continued strong mentoring track record and commitment to programmatic excellence. A numerical scoring system will be used for tracking faculty participation and aggregate data will be sent to all participating faculty.

Nominations for membership in CMM must come in writing from department chairpersons. The letter of nomination should include a statement of the significant research accomplishments of the individual, as well as, addressing their commitment to ethical and rigorous research. It should also include a commitment to cover the annual membership fee structure as set by CMM Advisory Board.

The faculty application must include a copy of the short NIH biographical sketch noting their commitment to ethical and rigorous research in the personal statement section. The review committee will also need to see funding and other support, a brief statement regarding independence, mentorship experience as well as, the disease relevance of their research. Further, they must acknowledge they comply with the SOM Access and Retention of Research Data by having a laboratory Standard Operating Procedures (SOP).
15. TRANSFER STUDENTS
CMM does not encourage the transfer of students. Students can only transfer into CMM from another institution as part of the normal admission process. These students must satisfy all the requirements of the program including rotations.

Under very special circumstances students at JHU may transfer research training to a mentor within the CMM program and can be considered for admission to the program. If the student has completed all CMM required coursework, under certain conditions, they may be admitted as a second year or more advanced student after discussion with the Director.

16. STUDENTS OF FACULTY WHO LEAVE THE SCHOOL OF MEDICINE
Students whose thesis advisors have left the institution may continue their project at Hopkins. It is the responsibility of the thesis advisor to find an on-site co-mentor for their student(s). Further, the thesis advisor must continue their financial obligations (stipend, insurances and lab supplies) while the student remains at Hopkins. Students who have chosen a mentor but have not completed their orals are expected to transfer to the new institution if they intend to follow their mentor. In some instances, students who have chosen a mentor, completed their orals and two full years at JHU may remain in the CMM program while carrying out research with their mentor at another institution. They are expected to return for yearly thesis committee meetings as well as to return to present the formal thesis seminar.

17. APPLYING FOR A LEAVE OF ABSENCE
Students may apply for a leave of absence when medical conditions, compulsory military service, or personal or family hardships prevent them from continuing their graduate studies. A leave of absence will be granted for a specific period of time, not to exceed a total of two years. When placed on leave of absence, the student will be notified by the School of Medicine Registrar’s Office.

During the leave period, a student may not be enrolled at another university nor may they receive a stipend. CMM cannot guarantee that financial support will be available when the student resumes his/her studies. Students on leave of absence need not register; no fees are incurred during a leave of absence. The period of leave is simply regarded as an approved interruption of the degree program.

All students on leave of absence are required to have health insurance coverage. It is the student’s responsibility and not an obligation of the graduate program or university.
18. PROGRAM POLICY ON ABUSE AND MISCONDUCT

The following is a set of recommendations for students should they experience any form of abuse, whether physical or psychological, or be victimized by misconduct from a person empowered with leadership responsibilities towards them (e.g., a JHU faculty member or project leader), a colleague, or a University staff person.

The course of action to be taken should be as follows:

1. Immediately discuss the problem with your thesis advisor, or alternatively, with the Chair of your thesis committee. For students who have not yet chosen a thesis advisor or committee, contact the Program Director (Dr. Rajini Rao, rrao@jhmi.edu), Admissions Director (Dr. Bob Casero; rcasero@jhmi.edu) or one of the Rotation Advisors.

2. If option 1 is not acceptable or possible, or does not provide satisfaction, discuss the problem with any other member of the CMM leadership structure. This includes the CMM staff (Colleen Graham ckgraham@jhmi.edu and/or Leslie Lichter-Mason llichter@jhmi.edu), or any member of the CMM Program's Policy Committee.

3. Alternatively, students may also report the problem to the Associate Dean for Graduate Students Affairs (Dr. Peter Espenshade; peter.espenshade@jhmi.edu).

4. Students may also contact the Johns Hopkins University Office Institutional Equity (http://oie.jhu.edu/) to inquire about or make a complaint of sexual harassment or discrimination. University policy states: "The University is committed to maintaining learning and working environments that are free from all forms of harassment and discrimination; harassment based on an individual's gender, marital status, pregnancy, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, veteran status or other legally protected characteristic is prohibited."

5. Please report any serious or questionable issues you encounter to the Compliance Hotline at 1-844-SPEAK2US (1-844-733-2528) or online at https://johnshopkinsspeak2us.tnwreports.com/ (Access ID: JHU). You can call to report any concerns you have about: Patient Rights or Privacy, Violations of Ethical Standards, Code of Conduct Violations, Medical Billing Irregularities, Serious Policy Violations, Safety Concerns, Other Issues or Concerns.
19. SCHOOL OF MEDICINE EAST BALTIMORE CAMPUS CONTACTS:


Student Assistance Program: [http://jhsap.org/](http://jhsap.org/) (SAP) provides support in dealing with the pressures and challenges students face during their academic and professional careers. All enrolled Johns Hopkins students are qualified to use SAP.

The Student Assistance Program offers:

1. Discussion and support groups
2. Preventative and educational sessions
3. Identification and assessment of personal, family, and school/work-related issues
4. Brief counseling and consultation
5. Referral to appropriate and accessible services and resources

For more information or to schedule an appointment, call (443) 287-7000 or (866) 764-2317. Note: Whatever the path chosen to secure assistance, the student’s problem will be given immediate consideration, and will be treated in complete confidence. The CMM Program will make every effort to immediately rectify any problems of abuse or misconduct.