Biology & Biomedical Sciences

ACADEMIC PROGRAM GUIDELINES

Programs in Cell & Molecular Biology

Developmental, Regenerative and Stem Cell Biology

Molecular Cell Biology

Molecular Genetics & Genomics

Molecular Microbiology & Microbial Pathogenesis
Overview of the Programs in Cell and Molecular Biology

Graduate training in Cell and Molecular Biology at Washington University is offered by the Programs in Cell and Molecular Biology in the Division of Biology and Biomedical Sciences. There are four Programs within this umbrella group. The Programs in Cell and Molecular Biology are overseen by a Governing Committee, which is comprised of the directors of the Program Steering committees, ad hoc faculty, and graduate student representatives. The four individual programs are organized around central disciplines in Cell and Molecular Biology. Each program is administered by a Steering Committee, which is comprised of 4-12 faculty who oversee graduate training once a student decides to specialize in one of these areas. The four programs are:

- Developmental, Regenerative & Stem Cell Biology
- Molecular Cell Biology
- Molecular Genetics & Genomics
- Molecular Microbiology and Microbial Pathogenesis

The goal of the Programs is to provide students with the best possible training for careers as research scientists in Cell and Molecular Biology. Students enter one of the four Programs in Cell and Molecular Biology based upon their interests. The appropriate Steering Committee takes on the responsibility for advising each matriculating student. Program affiliations may be changed during the course of the first semester, providing the student is in good academic standing and has the approval of the program directors involved and their admissions committees. Following the completion of at least one semester, students in good academic standing are free to transfer from one Division program to another following a discussion with both Program Directors.

Graduate training formally is divided into two stages: pre-candidacy and candidacy. Students usually complete the requirements for candidacy, which include courses, qualifying examination during the second year as well as a thesis proposal in the fall semester of the third year. The qualifying examination consists of a written research proposal in the student's field of interest followed by an oral examination on the proposal. In addition, some programs include a written examination following the advanced elective courses. Please see specific guidelines for your program. Once the student becomes a candidate for a Ph.D. degree, training consists of directed thesis research under a mentor of the student’s choice.

Course requirements must be met by the end of their 3rd year. Approval will be required for courses taken in year 4 and beyond. Typically a graduate student begins the program in late August and enrolls in two core courses:
- Nucleic Acids and Fundamentals of Molecular Cell Biology, during the first semester.
- Students typically choose three research rotations, each about two to three months in duration, in the first year.
- During the second semester, students select one or two courses from a menu of advanced elective courses depending on their program.
- Students may also take special topic courses if required during the first three years of studies.
- All students are required to take a special topic course in ethics.
- See “Program of Study” for journal club requirements in your program.
GUIDELINES TO THE PROGRAMS IN CELL AND MOLECULAR BIOLOGY

Students usually take the qualifying examination in spring of their second year (at the beginning of the second year for MSTP students), after which they form a thesis committee. The thesis committee consists of faculty of the student’s choosing and assists the mentor in guiding the student's thesis research. A formal thesis proposal is presented to the thesis committee before Dec. 31 of the third year (second year for MSTP). Students are encouraged to complete and defend their dissertations no later than the end of their fifth year (third year for MSTP).

Overall, the program is designed to provide the student with the multiple skills required to be an effective research scientist, including (i) an ability to propose, discuss, and critically evaluate ideas, (ii) an understanding of important concepts in Cell and Molecular Biology, (iii) an ability to conceive experiments that will test hypotheses, (iv) the technical skill to conduct experiments, and (v) an ability to explain experiments and concepts effectively, in both written and oral presentations. An outline of a typical student's course of study is on the following page.
# Outline of Typical Ph.D. Student's Program

See “Program of Study” for your program

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SEMESTER</th>
<th>MAJOR ACTIVITIES</th>
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</table>
| 1    | Fall           | Orientation mid August<sup>a</sup>.  
Meet with adviser and steering committee; plan rotations and coursework; begin first rotation.  
Take core curriculum courses: Nucleic Acids and Protein Biosynthesis: Fundamentals of Molecular Cell Biology |
Take one or two advanced elective courses<sup>b</sup>.  
Summer: Choose thesis adviser and begin thesis research. |
| 2    | Fall           | Take special topic courses as interest dictate if required<sup>c</sup>.  
Teaching Assistantship including teaching pedagogy workshops (Fall or Spring Semester). |
|      | Spring-Summer  | Choose a thesis committee.  
Take special topic courses as interest dictate if required.  
A special topic course in ethics must be completed Spring of the second year.  
<sup>*See specific program guidelines for qualifying examinations.*  
---|
| 3    | Fall           | Complete thesis proposal by Dec. 31.  
Take special topic courses as interest dictate if required.  
Thesis research |
|      | Spring-Summer  | Take special topic courses as interest dictate if required.  
Thesis research |
| 4 & 5|                | Thesis research, complete and defend thesis. |

<sup>a</sup>Some students arrive early to begin rotation in summer. Students with little research experience are encouraged to take this opportunity.

<sup>b</sup>Advanced electives may be chosen from among:
- Advanced Genetics
- Immunobiology I and II
- Molecular Basis of Plant Development
- Developmental Biology
- Molecular Microbiology
- Molecular Recognition
- Macromolecular Structure
- Macromolecular Interactions
- Molecular, Cell and Organ Systems
- Computational Molecular Biology
- Statistical Thermodynamics of Macromolecular Interactions

<sup>c</sup>Special topic courses are 1 or 2 credit courses that emphasize student oral presentations.
GUIDELINES TO THE PROGRAMS IN CELL AND MOLECULAR BIOLOGY

Outline of Typical MSTP Student's Program

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SEMESTER</th>
<th>MAJOR ACTIVITIES</th>
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<tbody>
<tr>
<td>1</td>
<td>Late Summer/Fall</td>
<td>Orientation. Meet with MSTP and appropriate Steering Committee to plan coursework.</td>
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<tr>
<td></td>
<td></td>
<td><strong>Core curriculum courses:</strong> MSTP students are expected to have completed Fundamentals of Molecular Cell Biology during the first year of Medical School. MSTP students are not required to take Nucleic Acids and Protein Biosynthesis, however, they will be responsible for the course material for the Qualifying Exam.</td>
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<tr>
<td></td>
<td></td>
<td>Take one or two advanced elective courses.</td>
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<td></td>
<td></td>
<td>Choose thesis advisor and begin thesis research.</td>
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<tr>
<td></td>
<td></td>
<td>Teaching Assistantship including teaching pedagogy workshops (Fall or Spring).</td>
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<tr>
<td></td>
<td>Spring-Summer</td>
<td>Complete advanced elective requirement.</td>
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<tr>
<td></td>
<td></td>
<td><strong>See specific program guidelines for qualifying examinations.</strong></td>
</tr>
<tr>
<td>2</td>
<td>Fall</td>
<td>Take special topic courses as interest dictate if required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Choose a thesis committee and meet to propose thesis by December 31.</td>
</tr>
<tr>
<td></td>
<td>Spring-Summer</td>
<td>Take special topic courses as interest dictate if required.</td>
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<tr>
<td></td>
<td></td>
<td>A special topic course in ethics must be completed by the Spring of the second year. Thesis research.</td>
</tr>
<tr>
<td>3</td>
<td>Fall</td>
<td>Thesis research.</td>
</tr>
<tr>
<td></td>
<td>Spring-Summer</td>
<td>Complete and defend thesis.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Return to Medical School.</td>
</tr>
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*MSTP students are required to take two advanced elective courses. In some programs, one advanced elective course from the Medical School curriculum can be used towards this requirement. Please consult your program director.

Advanced electives may be chosen from among:

- Advanced Genetics
- Molecular Basis of Plant Development
- Molecular Microbiology
- Macromolecular Structure
- Molecular, Cell and Organ Systems
- Statistical Thermodynamics of Macromolecular Interactions
- Immunobiology I and II
- Developmental Biology
- Molecular Recognition
- Macromolecular Interactions
- Computational Molecular Biology

*Special topic courses are 1 or 2 credit courses that emphasize student oral presentations.*
Developmental, Regenerative & Stem Cell Biology

Dr. Kerry Kornfeld, Co-Director  
Department of Molecular Biology and Pharmacology  
Campus Box 8103  
747-1480

Dr. Jim Skeath, Co-Director  
Department of Genetics  
Campus Box 8232  
362-0535

Developmental, Regenerative & Stem Cell Biology Steering Committee:

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Jason Mills                 362-4213    jmills@wustl.edu
Kelly Monk                  362-3825    monkk@WUSTL.EDU
David Ornitz                362-3908    dornitz@wustl.edu

The various research groups in this program study problems in embryonic development and cell and tissue differentiation in a variety of model systems, ranging from the vertebrate nervous system to slime molds and yeasts. Genetic (both classical and molecular), cell biological, immunological, and biochemical approaches are utilized to elucidate the molecular mechanisms that underlie many key processes of development. Research areas include embryo and tissue organization, cell-cell and cell-matrix interactions, and control of cell fate, differentiation, tissue specific gene expression, and pattern formation.

Among the Advanced Electives listed on page 4, students must select both Developmental Biology (BIO 5352) and Advanced Genetics (BIO 5491) in addition to whichever other courses are of potential interest.
Molecular Cell Biology

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Department of Cell Biology & Physiology
Campus Box 8228
362-3924

Dr. Jason Weber, Co-Program Directors
Department of Internal Medicine, Oncology Division
Campus Box 8069
747-3898

Molecular Cell Biology Steering Committee:

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Michael Mueckler 362-4160 mmueckler@wustl.edu
Joshua Rubin 286-2790 Rubin_J@wustl.edu
Shelia Stewart 362-7437 Sheila.stewart@wustl.edu

The goal of research within this program is to explain the mechanisms of the fundamental processes of cell biology in molecular terms. Such processes include cell motility and proliferation, the trafficking of molecules into and out of cells, adhesion of cells to matrix and to each other, receptor-ligand interactions, the transport of molecules and information across membranes, and cell signaling. A common theme which unites these diverse endeavors is the desire to push the limits of our understanding of these processes to the highest possible molecular resolution.

In addition to the two course courses in the Fall semester, students are required to take the advanced elective and two journal clubs.
Molecular Genetics & Genomics

Dr. Tim Schedl, Co-Director  
Dept of Genetics, Campus Box 8232  
Phone 362-6162

Dr. Jim Skeath, Co-Director  
Department of Genetics, Campus Box 8232  
362-0535

Molecular Genetics and Genomics Steering Committee

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Elgin, Sally        935-5348       selgin@wustl.edu  
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Johnson, Steve      362-0362       sjohnson@wustl.edu  
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This program encompasses research-addressing questions of how genes are inherited, modified, expressed and regulated. All of the favorite model organisms used in modern genetic analysis are represented in this program, including phage and viruses, bacteria, yeast and fungi, nematodes, *Drosophila*, algae, plants, and mice. This program is rounded out by an additional strength in human molecular genetics, a research area of increasing importance.

Students must take the Advanced Genetics class as well as the Genomics class for their two advanced elective courses. Please note: Molecular Genetics and Genomics students are required to register for the Molecular Genetics Journal Club (Bio 5235) for two semesters and must participate in the journal club for an additional semester. Students in the program are required to complete three rotations. While flexibility exists within the system, in general rotations should last for 7-8 weeks.
Molecular Microbiology and Microbial Pathogenesis

Dr. L. David Sibley, Program Director
Department of Molecular Microbiology
Campus Box 8230, phone 362-8873

Microbiology Steering Committee:

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Tamara Doering 747-5597 doering@borcim.wustl.edu
Daniel Goldberg 362-1514 goldberg@borcim.wustl.edu
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The Molecular Microbiology and Microbial Pathogenesis Program include two major areas of research:

Molecular Microbiology
Research in the physiology, biochemistry, ecology, and evolution of microbial organisms, including cell structure, growth, and development, gene regulation, cell signaling, cell cycle dynamics, environmental, population and community dynamics, and bioenergetics.

Microbial Pathogenesis
Research in molecular and biochemical aspects of pathogenic bacteria, fungi, protozoa, helminths and viruses, with emphasis on mechanisms of virulence, host defense systems, emerging infections, and host-pathogen interactions.

The Molecular Microbiology and Pathogenesis course (Bio 5392) is considered central to the Molecular Microbiology and Microbial Pathogenesis Program, and is a required advanced elective. The program also features a workshop, taken at the end of the first year, which provides critical skills in grant writing. Students will also take another advanced elective of their choosing from those listed on page 4, subject to the approval of the Molecular Microbiology & Microbial Pathogenesis steering committee.
1. Advising
Timely and good advice often can be very important to graduate students. Students in the Programs in Cell and Molecular Biology should take advantage of advice from a number of sources, both informally from faculty and students and more formally from appointed advisors that meet with the student at appropriate intervals.

Student Mentors
Each first-year student is assigned a student from the second- or third-year class to act as mentor. The student mentor may serve as a first source for answers to many questions but also may encourage the student to meet with a faculty adviser where appropriate.

Faculty Advising
Steering committees will provide advising for students in the first few years of graduate school prior to forming a thesis committee and proposing. Each student will meet briefly with the Steering Committee once per semester to discuss progress and address any questions the student may have. These meetings will usually occur just before the beginning of each semester and students are expected to be available during this time period. Once a student has completed a thesis proposal, meetings with the Steering Committee will not be required. However, late stage students (i.e. 6th year and beyond) will also be expected to meet with the Steering Committee at least once per semester in order to discuss the progress toward graduation and plans after they complete their degree.

2. Formal Courses
The following courses are generally required for all students in the Programs in Cell and Molecular Biology. However, as flexibility is a hallmark of graduate training in the programs, the Steering Committee may choose to waive some requirements in unusual cases.

2.1. Core First-Year Courses
Students normally take two core courses during their first fall semester in the programs: Nucleic Acids and Protein Biosynthesis (Bio 548) and Fundamentals of Molecular Cell Biology (Bio 5068). A grade of B- or better in these courses is one of the requirements to achieve candidacy. Students in any program may defer taking some core courses until the second year, with consent of their Steering Committee.

2.2. Advanced Elective Requirements
Students in the programs complete one or two advanced electives requirements by the end of their fourth semester (second semester for MSTP) in the program. Subject to the approval of the program steering committee, students may select from among the following courses in addition to any required electives by the program:
2.3. Microbiology Program Grant Workshop Bio 5398

At the end of the first year of classes, students are expected to enroll in this workshop that focuses on skills needed for successful completion of a grant proposal. Exercises will include identifying key unanswered questions from the literature, formulating hypotheses, developing Specific Aims and developing the research plan for a proposal. Students will develop and write a NIH-style proposal with critiques and input from faculty. The workshop will also include an in class mock study section to evaluate proposals. This workshop is expected to provide critical skills useful in applying for fellowships and in completing the QE.

2.4 Special Topic Courses, Tutorials and Journal Clubs

During the course of graduate studies, students in the programs may take special topic courses, tutorials, or journal clubs. A special topic course in ethics must be completed by the Spring of the second year. The purposes of these courses are (i) to provide close student-faculty interactions in a format that is less didactic than standard lecture courses; (ii) to allow students to study current research topic in great depth; and (iii) to provide students with a mechanism to learn speaking skills. Thus, a large component of these courses include coaching in oral presentation.

Special topic courses that include some didactic material and an examination may count for two credits. Courses that consist mainly of student presentations will count for one credit. Normally a student will receive one credit in a regular journal club for regular participation and for one presentation. To count, a journal club must either be in the University Course Listings or on an approved list maintained by the Governing Committee.

Special topic courses are organized by one or several faculty on a specific research topic. Students are encouraged to approach faculty with proposals for special topic courses. For example, faculty may identify several special topic related to some area of current research interest and assign students to give presentations on each subject. A special topic course also might include some presentations by outside speakers or faculty at Washington University with expertise in the area. Guidelines for journal clubs and special topic courses are available from the Governing Committee and detail the requirements for journal clubs to be approved.

3. Research Lab Rotations

At the beginning of the first semester, students, with the advice of their advisors and the Governing Committee, plan laboratory rotations. In general, students complete three laboratory rotations by the summer of their first year in the program, at which time they select a thesis mentor. The DBBS Website provides a description of research opportunities available for rotations. Students are urged to discuss possible rotation projects with as many potential
advisors as possible, before making their selections. [Students are prohibited from conducting rotations in laboratories where they have been previously employed. However, previous employment would not prevent the student from pursuing thesis work in such a laboratory.] Also, before deciding on a particular laboratory, the student should develop an outline of the proposed work with the faculty member. The Division Office provides students with a Rotation Form for this purpose. The form should be completed by the student with the rotation mentor's help and returned to the Division Office at the start of each rotation. A second part of the form is completed at the end of the rotation to provide the Governing Committee with an evaluation of the rotation experience.

The purpose of the rotations is to broaden the student's research experience and to expose the student to available opportunities before a thesis preceptor and problem are selected. It should be recognized by both student and rotation mentor that significant research accomplishment is not a requirement for a successful rotation, nor should the rotation be prolonged significantly beyond the normal period to meet particular research objectives. Students may choose to end a rotation at any time, should they find it desirable to move on to the next rotation.

During the rotation, the student should take advantage of the one-on-one relationship with the faculty member to discuss science as it is carried out in the lab, and to evaluate together the approach to research. Students should explore these contacts carefully during rotations, mindful that selection of a good mentor who will provide the personal instruction required to master experimental science is the most important decision they will make in graduate school.

4. Teaching Requirement

Effective communication of information and concepts is a critical skill for biomedical research scientists. While much of the teaching that scientists engage in is through one-on-one interactions with individuals in the laboratory, all scientists must be able to deliver lectures to a wide audience (from peers in the field to neophytes with a limited understanding of the nuances of the topic), and scientists in faculty positions will often teach courses to undergraduate and graduate students. Therefore, DBBS students must demonstrate the ability to effectively communicate complex ideas and concepts to groups of individuals at various levels of understanding. To develop these critical communication skills, DBBS students will:

- Complete the TA orientation and three approved workshops offered by the Teaching Center by the end of the 2nd year of graduate studies
- Serve as a Teaching Assistant in a DBBS-approved graduate or undergraduate course for 1 or 2 semesters. The TA assignment will include giving lectures and/or leading lab sessions. The TA is usually completed in the 2nd year of graduate studies.
- Deliver a minimum of four oral presentations at journal clubs, seminars, scientific conferences, and retreats. Presentations given as part of a TA assignment, lab meetings or thesis committee meetings will not satisfy this requirement.
5. Qualifying Examination

Refer to program specific Qualifying Exam Guidelines.

6. Thesis Committee and Thesis Proposal

Refer to program specific Thesis Proposal Guidelines if applicable.

6.1. Purpose of the Thesis Committee

The purpose of the thesis committee is to advise the student in his or her thesis research and to provide the student with a readily accessible source of advice and constructive criticism during the dissertation research. To achieve these goals, it is imperative that thesis committees meet early in a student's term and that they meet with the student at least 1 to 2 times a year (every 6 months for the MCB Program) to offer suggestions and ascertain progress. The thesis committee should actively monitor the student's progress toward completion of a thesis by no later than the end of the student's fifth year, and preferably sooner. A thesis committee's ultimate responsibility is to act in the student's best interest, by ensuring that the research undertaken will lead to an acceptable dissertation and a Ph.D. degree.

6.2. Conflict of Interest Policy

Research funding from sources that have intellectual property interests in the research, or in which the PI has personal financial interest, may create a real or perceived conflict of interest, given the dual roles of the principal investigator in obtaining funding for the lab and as a mentor for graduate students. Issues of paramount importance are (i) the ability to publish results in a timely fashion; (ii) the ability to communicate research results openly, especially to members of the thesis committee; and (iii) academic rights to publish and speak freely, especially as related to a graduate student’s thesis and defense.

Statement of policy.

The following principles should apply to any situation involving a graduate student supported by funding that is associated with a confidentiality agreement:

The limitations and nature of the confidentiality agreement must be fully disclosed to and approved by the student, the thesis committee, and the DBBS Associate Dean for Graduate Affairs; The confidentiality agreement must not place an unreasonable burden or delay in publication or reporting at scientific meetings; The confidentiality agreement must not delay the writing or defense of the thesis. The complete policy can be viewed at on the second page of the Thesis Affiliation form:

http://dbbs.wustl.edu/curstudents/StudentForms/Pages/StudentForms.aspx
6.3. Constitution of the Thesis Committee

Students should choose their thesis committees during their second year. The thesis committee consists of four faculty members and the thesis preceptor. The University requires that the final dissertation defense committee be composed of three faculty from the student's program and one from inside or outside the students program; and one from any of the other programs, or from departments outside the Division. All but one of the members of the committee must be members of the Washington University faculty and must hold regular academic appointments in the University. A quorum of four members including the thesis adviser is needed for any pre-defense meeting. The student and preceptor nominate these committee members subject to approval by the Program Director. The committee members are selected for their expertise in areas on which the research will touch, and for their willingness to contribute advice and meet at least once per year. The committee is chaired by a faculty member other than the thesis preceptor, and the chairperson should be designated in advance of the proposal, based on his or her willingness to be responsible for the committee's activities. The student and preceptor should view the committee system as a source of objective criticism and expert advice. At the time of the thesis defense, the thesis committee serves as the defense committee. The addition of committee members or changes of committee composition should be made no later than six months before the defense date.

6.4. Timing of the Thesis Proposal

Students are encouraged to present a thesis proposal during their second year, but should complete the proposal no later than December 31 of their third year (second year for MSTP students) in the Division. If the student anticipates that he or she will not be able to meet this deadline, the thesis advisor must write a letter to the Steering Committee by November 1, explaining the situation and indicating when the student can be expected to propose. Final approval of the thesis proposal by the thesis committee must take place by the end of the student’s third year, or the student will no longer remain in good academic standing and will lose registration privileges for the following semester.

6.5. Thesis Proposal

The thesis proposal should include a statement of purpose and rationale for the project, an outline of the methods to be used and an assessment of their feasibility, a summary of the work performed already, an idea of the potential outcome, and alternative plans for high risk portions of the project. Although these are all essential components of a proposal, it is not intended that the proposal be lengthy, and preliminary data, while desirable, need not be profuse or conclusive. Thesis proposals require a cogent, but scholarly written assessment of the field and a testable hypothesis with possible branch points to be in the hands of the committee one week prior to an oral presentation. A single-spaced proposal, with references, of five-ten pages is appropriate. The thesis proposal meeting provides a student with guidance in selecting appropriate research goals and is not a test that the student must pass or fail.

6.6. Thesis Committee Meetings

During the thesis proposal, emphasis should be given to the student's understanding of the research proposed and the likelihood that it will allow the student to produce a thesis in a timely
manner. Toward this end, it is customary for the thesis adviser, although present, not to participate in the discussion except where specifically requested to do so by a thesis committee member. For both the proposal and for subsequent thesis committee meetings, the committee will meet briefly to prepare its recommendations with the student absent. On occasion, the committee may also choose to meet with the student in the absence of the thesis adviser.

After the thesis proposal, thesis committees will meet with students no less than once or twice a year. Scheduling of the meetings should be done by the student. In the event that a student does not schedule timely meetings, the thesis committee chairperson will schedule thesis committee meetings. The thesis committee may choose to meet more often than once per year, if it finds more frequent meetings appropriate. After each meeting, the thesis committee chairperson will be responsible for ensuring that recommendations of the committee are communicated to the student. The student should provide a minimum one page critique of the work thus far, sending it to the committee one week prior to the date of the meeting.


The program is designed with the goal that students complete their thesis research and prepare, present, and defend a Ph.D. dissertation four to five years from the time they begin the program. The dissertation must be based upon an original investigation which results in a significant contribution to knowledge in Cell and Molecular Biology. Subject to approval of the thesis committee, the dissertation may include reprints of published work of which the student is an author, but where published material is included, a prefatory introduction should describe the extent of the candidate's contribution to both the experimental work and the preparation of the manuscript. When published material constitutes a significant fraction of the dissertation, it is desirable that a separate Introduction that describes the background to the research and a Discussion that describes its significance be written for the dissertation itself.

In order to assure that the dissertation will meet with general approval of the thesis committee, and to provide the required notice to the graduate school of the oral defense, the student will present an outline of the dissertation to the thesis committee six months before the defense date, and meet with the committee to discuss the outline and gain its approval. Once a date for the defense has been set, the Division Office should be notified promptly.

The thesis committee must read and approve the dissertation prior to the oral defense. To allow adequate time for remedy of potential problems, a complete draft of the dissertation must be given to the thesis committee at least two weeks prior to the date of the defense. Unless otherwise requested by the student and adviser and agreed to by the thesis committee, the format for the defense typically will be a public seminar followed by a closed session with the entire thesis committee.

8. Students' Responsibility to Meet Program Requirements

Graduate students in the Programs in Cell and Molecular Biology are responsible for completing the requirements of the program in a timely fashion. In particular, the requirements for courses, preliminary examinations, thesis proposals, and thesis committee meetings are important components of graduate training and should be regarded seriously. In the event that a student has trouble meeting any requirement, he or she should request consideration of the situation by the Steering Committee, which may agree to waive or delay the requirement.
9. Transfer From and To Another Programs

Students are free to transfer to and from any other program in the Division of Biology and Biomedical Sciences provided they are “in good academic standing”. Students who transfer will be expected to meet all of the normal requirements of the programs, although special exceptions may be granted in rare cases by the Steering Committee. Students are free to transfer from the programs to another program, with the approval of both program directors and provided a qualifying examination committee or program steering committee has not recommended against the student continuing in the Ph.D. program. Transfer is accomplished most easily during the first year, but can be done at later times if necessary.

10. MSTP Students

Students who join the Programs in Cell and Molecular Biology from the Medical Scientist Training Program generally take the Fundamentals of Molecular Cell Biology course as part of the 1st Year Medical School Curriculum. They are not required to take the Nucleic Acids and Protein Biosynthesis course for credit, however, they will be held responsible for the material covered in this course on the qualifying exam. MSTP students generally meet all other requirements in the Programs in Cell and Molecular Biology, except where requirements are specifically waived by the Steering Committee.

11. Publications

There is no specific requirement for publication to receive the Ph.D. However, high quality, peer-reviewed publications are an important determinant for a student’s career. Similarly, the process of writing and submitting a manuscript and responding to reviewer critiques is an essential part of a student’s training. Therefore, the publication record is one of several important and appropriate measures to be used by a thesis committee in evaluating a Ph.D. candidate. It is generally expected that students will have submitted and/or published one or more first author manuscripts in peer-reviewed journals at the time of the defense.

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