Dear Student,

All PhD students at the end of their second year and all MD-PhD students at the end of their first graduate student year are required to take and pass a qualifying exam. Successful completion of this exam constitutes the final requirement for a Master of Science degree and is required in order to advance to candidacy for the PhD degree. Anyone failing this exam will be asked to leave the program.

According to our records, you will be taking the Qualifying Exam in Molecular Oncology and Immunology this year. Please let me know if you do not plan to qualify in this training program this year.

What does the qualifying exam consist of?

(1) A written thesis proposal describing the research project you intend to pursue for your PhD studies.

(2) An oral defense of your written thesis proposal in front of your thesis exam committee.

The schedule for this year is as follows:

<table>
<thead>
<tr>
<th>Thesis proposal due no later than:</th>
<th>Wednesday, June 1, 2011 by 5 pm (Smilow 301C)</th>
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<tbody>
<tr>
<td>Oral Defense:</td>
<td>Preferred prior to the Fall 2011 term registration</td>
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<td>No later than the Winter 2011 term registration</td>
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(1) Written thesis proposal

The thesis proposal should describe the research project a student intends to pursue for his/her PhD studies. It should be modeled after an NIH Postdoctoral Fellowship application. Relevant guidelines can be obtained from the Pathology Department Office (Smilow 301C) and are appended to this letter.

A proposal should describe hypothesis driven projects, and the underlying hypothesis of the study should be explicitly stated. Research Design should include not only the proposed experimental direction but also a description of the type of data expected, how the data obtained will be interpreted, alternative approaches should problems arise, and a tentative timetable for completion of the proposed research. The proposal should be realistic in the sense that it describes an experimental approach that can be accomplished in the next 3-4 years.

The thesis proposal should be at most 15 double-spaced pages, not including preliminary data, if appropriate. It should contain:

• A one page or less Hypothesis and Specific Aims section that outlines succinctly the long range goals of the proposed work, the specific short term goals, and the specific experimental approaches that will be carried out.

• An introduction (Background and Significance) of the research topic, of approximately 4-6 pages providing background information that cogently discusses the current state of knowledge in the field and provides a context in which the goals and purposes of the proposed experiments are formulated.

• Preliminary results from the mentor’s laboratory and from the student’s work if applicable (appropriately acknowledged). A student need not have any significant results to submit a thesis proposal for the qualifying exam, but relevant data from your laboratory experience should be included.

• The main section of the proposal (Research Design and Methods) should describe a coherent (i.e., rationally ordered) presentation of the proposed experiments. This section may incorporate additional background information, not given in the introduction, to illuminate the rationale for the specific experiments proposed. The experiments themselves should be outlined, generally referring to appropriate references in the literature for methodological details rather than providing all the details in the written text. This section should also include a discussion of data interpretation, potential pitfalls, and alternative approaches.

A student may be asked in the oral defense to provide details of experimental procedures. In some cases s/he will be expected to know some very fine points - like the reaction temperature or salt concentration for a biochemical reaction - if these reflect essential conceptual aspects of the procedure (such as when using imperfectly matching nucleic acid probes in a hybridization procedure). Students must use their judgment here: if a procedure is quite elaborate they should provide a comprehensible outline of it (it is not enough, for example to say: "The endogenous gene will be knocked out by homologous recombination" or "the protein will be purified" or “monoclonal antibodies will be raised against a plasma membrane fraction").

For each experiment proposed, students should discuss the possible experimental outcomes and their interpretations, difficulties they might encounter and how they will be dealt with. The proposal must show awareness of the limitations of the planned experimental approaches and consider alternative strategies.

This year the thesis proposal is due no later than Wednesday, June 1, 2011, at 5 pm (Smilow 301C)
(2) Examination and thesis committee

A student's thesis examination committee should consist of three Sackler faculty members whose expertise covers an important aspect of the written proposal. At least one committee member must be a member of the MOI training program and will serve as committee chair. The examination committee members should be selected by the student, in consultation with his/her research mentor and the program graduate advisor.

The names of the thesis committee should be submitted at the same time as the thesis proposal and must be preapproved by the training program director or graduate advisor.

The thesis proposal will be read by the committee members and program graduate advisor, and a decision will be made whether it is satisfactory and warrants proceeding. If it is not satisfactory, a rewrite will be requested prior to the oral defense (see below). The student will be provided with guidance on how to improve it and will have a discrete period of time to rewrite the thesis proposal.

If the proposal continues to have serious problems, the program advisor in consultation with the program leaders and thesis mentor will determine if the student should be given an opportunity to resubmit or should be terminated from the program.

Thesis committee:

Members of the examination committee, together with the student's mentor, will later constitute the student's thesis advisory committee that will guide him/her during the remainder of his/her graduate training.

The thesis committee should meet every 6-9 months to review the student's progress and provide guidance. It is the responsibility of the student to keep track of this and schedule meetings accordingly. Records of each meeting should be submitted to the graduate advisor on a form that can be obtained by email (danielle.rouchon@med.nyu.edu) or in the Pathology office (Smilow 301C). For the final thesis defense, an additional thesis reader/examiner from outside the university is required.

(3) Oral Defense

Students will defend orally their thesis proposal before their thesis examination committee. It is permissible to provide an updated version of the thesis proposal from the one initially submitted, but it must be provided to the committee no later than 2 weeks prior to the scheduled defense.

Oral exams should be completed prior to fall term registration, if possible. However, they must be completed no later than the winter registration. It is the responsibility of the student to organize the oral defense and schedule it with their faculty committee. No one will be allowed to register for the winter term without successfully completing the qualifying exam.

The oral exam should take 1½ to 2 hrs with the student first giving a 40- 45 minute professional presentation of the proposed thesis project. During and after the presentation the examiners will question the student to assess the depth of his/her knowledge in the area of the proposal and in general background areas that impinge directly on the subject, his/her understanding of the experimental approaches, and ability to rationally analyze a problem or issue.

The student mentor may be present during the oral defense only as an observer and will not take part in the discussion. Before or after the oral exam, the committee will meet with the student in the absence of his/her mentor and with the mentor in the absence of the student.
A “Pass”, “Fail”, or “Conditional” decision will be made immediately by the examination committee. Students who fail the oral exam will be terminated from the program. A decision of “Conditional” will include a description of what portions need to be repeated and what criteria will be used to assess successful completion of the exam. Outcome of the exam should be recorded on the MOI Qualifying Exam Form (http://pathology.med.nyu.edu/files/MOI_Oral_Qualifying_Exam_Form.2010-11.pdf) and provided to the MOI Program Office.

Remember that following successful completion of the qualifying exam and advancement to candidacy, the thesis committee should meet every 6-9 months to review your progress and provide guidance. It is your responsibility to keep track of this and schedule meetings accordingly. Records of each meeting should be submitted to the graduate advisor on a form that can be obtained by email (danielle.rouchon@med.nyu.edu), in the Pathology office (Smilow 301C), or on the MOI website (http://pathology.med.nyu.edu/files/MOI_Committee_Meeting_Progress_Report.5.2009.pdf). For the final thesis defense, an additional thesis reader/examiner from outside the university is required.
**Written Thesis Proposal Instructions**

**Contents of Research Training Plan**

Include sufficient information to permit an effective review without reviewers having to refer to the literature or any previous application.

Sections A through D must not exceed 15 pages double-spaced, not including tables and figures representing preliminary data you have generated in the project. Follow the format provided below.

**A. Specific Aims**

List the broad, long-term objectives and the goal of the specific research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology.

**B. Background and Significance**

Briefly sketch the background leading to the present application, critically evaluate existing knowledge, and specifically identify the gaps that the project is intended to fill. State concisely the importance and health relevance of the research described in this application by relating the specific aims to broad, long-term objectives.

**C. Preliminary Studies**

Use this section to provide an account of preliminary studies, if any that are pertinent to this application. This information will help demonstrate the utility of the proposed project as a training experience. When applicable, provide a succinct account of published and unpublished results, indicating progress toward their achievement.

**D. Research Design and Methods**

Describe the research design conceptual or clinical framework, procedures, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted. Describe any new methodology and its advantage over existing methodologies. Describe any novel concepts, approaches, tools, or technologies for the proposed studies. Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the aims. As part of this section, provide a tentative sequence or timetable for the project. Point out any procedures, situations, or materials that may be hazardous to personnel and the precautions to be exercised.

**E. Literature Cited**

List all literature references. Each reference must include the title, names of all authors, book or journal, volume number, page numbers, and year of publication.

*The reference should be limited to relevant and current literature.* While there is not a page limitation, it is important to be concise and to select only those literature references pertinent to the proposed research.