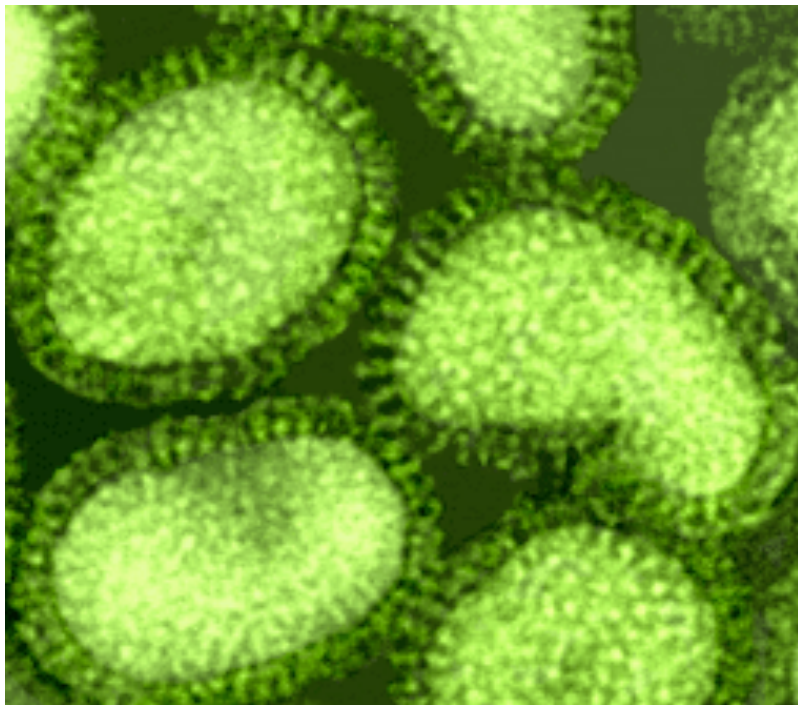


# **Immunology & Molecular Pathogenesis**

## **STUDENT HANDBOOK**

**2009 – 2010**



**Emory University School of Medicine**

**Graduate School of Arts & Sciences**

**Graduate Division of Biological & Biomedical Sciences**

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**IMMUNOLOGY AND MOLECULAR PATHOGENESIS PROGRAM  
STUDENT GUIDELINES  
GRADUATE DIVISION OF BIOLOGICAL AND BIOMEDICAL SCIENCES**

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**I. IMP PROGRAM ADMINISTRATION**

***Director***

Brian Evavold	Dept. of Microbiology/Immunology 3128 Rollins Research Center	727-3393
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***Director of Graduate Studies***

John Altman	Dept. of Microbiology/Immunology Emory Vaccine Center	727-5981
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***Recruiter***

Joshy Jacob	Dept. of Microbiology/Immunology Emory Vaccine Center	727-7919
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***Seminar Director***

Arash Grakoui	Dept. of Microbiology/Immunology Emory Vaccine Center	727-5850
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***Program Administrator***

Lauren Hearn	1462 Clifton Road, Ste. 314	727-2546
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***Executive Committee Members***

Jerry Boss	Dept. of Microbiology/Immunology 3131 Rollins Research Center	727-5973
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Linda Gooding	Dept. of Microbiology/Immunology 3107 Rollins Research Center	727-5948
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Periasamy Selvaraj	Dept. of Pathology 7307 Woodruff Memorial Building	727-5929
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Sam Speck	Dept. of Microbiology/Immunology Emory Vaccine Center	727-7665
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Ifor Williams	Dept. of Pathology 105D Whitehead Building	727-8547
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Aron Lukacher	Dept. of Pathology 7307 Woodruff Memorial Building	727-1896
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## **II. ADMISSION TO GRADUATE STUDIES**

### **A. ADMISSION REQUIREMENTS**

The graduate Program in Immunology and Molecular Pathogenesis is designed for those pursuing a Ph.D. degree or the combined M.D.-Ph.D. degrees. The Program's Executive Committee evaluates applicants principally on research experience, educational background, Graduate Record Examination scores and letters of recommendation and will make admission recommendations to the Director. A successful applicant typically has a strong science background including coursework in biology, inorganic and organic chemistry, biochemistry, and molecular biology. Deficiencies in course background may be made up during the first year of graduate study upon recommendation of the Executive Committee. We do not admit students for a Masters Degree.

Applicants with a Masters Degree in Immunology, Virology, or a closely related discipline or the equivalent may request admission directly into Advanced Standing. This also includes applicants who have or will have successfully completed two or more years of medical school with a standard curriculum.

### **B. ADMISSION OF TRANSFER STUDENTS FROM OUTSIDE EMORY**

We require that the student complete their current graduate program, or resign from the graduate program before such applicants will be considered by our normal procedures. Upon request, we will confidentially consider applications according to the following policy.

1. The student must submit a complete application, with the exception of letters of reference.
2. This material will be reviewed by the admission committee and the applicant will be advised as to the competitiveness of the application.
3. If the student wants to continue the application process, the references will be contacted, as well as the chairman or director of the current graduate program.
4. If the student's current program has no objections, we will then consider the application in our regular manner.

### **C. TRANSFER TO ANOTHER GRADUATE PROGRAM AT EMORY**

Students admitted to the IMP Program are supported by the Graduate Division of Biological and Biomedical Sciences (GDBBS). As such, they may choose to do rotations or thesis research with any faculty who are members of the GDBBS. If, however, the student chooses to carry out dissertation work with a faculty member who is not a member of the IMP Program, three possibilities exist:

1. The student can find a co-mentor in the IMP program. This should not be undertaken lightly by the co-mentor, since this amounts to an agreement to support this student intellectually should problems arise.
2. The faculty member can join the IMP Program. This is subject to the normal procedures for inducting new faculty into the program, and is limited to faculty with training, credentials, and research support in some area of Immunology and Molecular Pathogenesis.

3. The student can arrange to transfer to the graduate program where the proposed mentor holds a training appointment. A letter of intent requesting the transfer should be sent to your current program, to your intended program, and to the Director of the Graduate Division of Biological and Biomedical Sciences. The Executive Committee of the intended program will review the IMP Student Guidelines & Requirements student's record and approve or deny the transfer. It is expected that in most circumstances the transfer will be approved. Any additional requirements (course work, etc.) should be specified in writing and agreed upon by both the student and the intended graduate program.

### III. ADMINISTRATIVE STRUCTURE

All graduate degrees offered by the program in Immunology and Molecular Pathogenesis are granted by the Graduate School of Arts and Sciences and the Division of Biological and Biomedical Sciences. The Dean of the Graduate School and the Director of the Division are assisted in the formulation of policy and the resolution of problems by an Advisory Committee which consists of the Directors of programs offering graduate training. In addition, a Divisional Student Advisory Committee consisting of students from each of the programs affords a way for student concerns to be raised and discussed.

#### A. LABORATORY ROTATIONS

Each student must do research in at least 3 different laboratories of GDBBS faculty during the first year, with the following exceptions. One of these laboratory rotations may be satisfied by eight weeks of full-time research during the summer prior to matriculation. Some students may decide to do a fourth rotation during the summer after their second semester. Students entering the program in Advanced Standing or with prior laboratory experience may arrange to do fewer rotations and special exceptions can also be made given sufficient justification with the approval of the Executive Committee. **Prior to each rotation, students must consult with and obtain written approval from the Director of Graduate Studies (DGS). Once approval is obtained from the DGS, students must obtain written approval from the faculty member. Laboratory rotation forms are available from the IMP Program Administrator (Lauren Hearn) or on the IMP website ([http://www.biomed.emory.edu/PROGRAM\\_SITES/IMP](http://www.biomed.emory.edu/PROGRAM_SITES/IMP)).**

Laboratory rotations expose students to different research approaches and techniques of modern science. They help define a student's research interests and make it easier to select an advisor. However, the choice of advisor is not limited to those faculty with whom the student has done a rotation. Rotations also allow faculty to observe and evaluate the first-year student in their laboratory setting. Faculty are required to submit written comments on rotation performance to the DGS. Expectations for time spent in the laboratory should be clearly established between the faculty member and the student before beginning each rotation. Students are expected to be working on their projects when not attending class.

Individual rotations are generally scheduled for the following dates:

- Rotation #1: 2nd Week of October through 3rd Week of December
- Rotation #2: 1st Week of January through 2nd Week of March
- Rotation #3 3rd Week of March through 4th Week of May

Students are **required to complete the Introduction to Research course** which concludes in

the 1<sup>st</sup> week of October **BEFORE** contacting faculty for their first laboratory rotation. Each member of the IMP faculty provides a brief overview of their research in the Introduction to Research course, exposing students to the wide variety of research interests available to them. Students must submit an approved *Laboratory Rotation Notification* form to Lauren Hearn before beginning each rotation.

## **B. THESIS ADVISORS**

The Director of Graduate Studies will serve as advisor until the student has selected a thesis advisor. Selection of a thesis advisor takes place after the final laboratory rotation. No final commitments should be made to a faculty member by the student (or vice-versa) until this time. The thesis advisor must be a member of the GDBBS. Although not mandatory, we strongly encourage students to select a thesis advisor who is a faculty member of the IMP Program.

**Note: Students who choose a thesis advisor at the CDC must have a co-advisor who has an Emory University faculty appointment and is a member of the IMP program. Students must obtain written approval from the Director of Graduate Studies before selecting a laboratory for dissertation research. An approved *Thesis Advisor Notification* form must be completed prior to completing the GDBBS Mentor Assignment Form. Students must complete the GDBBS Mentor Assignment Agreement Part I & II. The original is to be returned to the GDBBS office, 314 Dental Building, and a copy given to Lauren Hearn. The GDBBS mentor form requires the signatures of the student, Thesis Advisor, IMP director, and department chair of the Thesis Advisor.**

One of the most important decisions you will make as a graduate student is your choice of a thesis advisor. The thesis advisor has the prime responsibility for direction of course and research activities necessary for a graduate degree in Immunology and Molecular Pathogenesis. The following criteria should be considered when evaluating potential thesis advisors:

### **1. Likely production leading to publications**

*What is the laboratory's track record for publication? Are these publications in quality journals?*

No creditable and competitive degree in an experimental science should be awarded without one or more full-length publications resulting from research.

### **2. Support for the research**

Is there a research grant, i.e., peer-reviewed funding, which can facilitate the purchase of necessary materials and services needed? How committed are funds toward other people and projects? An important measure of the quality and importance of the research effort is that external review by scientists knowledgeable in the field has led to the competitive award of money to support the project area. Such grants also reflect the judgment that training and past production of the principal investigator warrant the grant. Remember that after your second year, your stipend will derive from the grants of your thesis advisor.

### **3. Nature, scope and training to be provided by the thesis project**

*How certain are positive, publishable results? Is it likely that a breadth of techniques can be learned such that future development and versatility of the student is well served?*

Best training for a modern scientist must provide a breadth of research experiences that significantly augment formal lecture and laboratory courses. It can be argued that a good research problem would be sufficiently open-ended as to allow several aspects of a major question to be approached by diverse methodology. A student should discuss research projects

with each of several potential mentors to see what may be of mutual interest.

#### **4. Seniority of advisor and laboratory environment**

*What is the depth and breadth of the advisor's training and research experience? How versatile and technique-wise are associate (technician, post-doc, student) personnel in a given research group?*

In general, a more established faculty member may have a larger laboratory group and potential collaborators. These must often be relied upon to teach particular techniques. The senior faculty person may be committed to a range of duties that interfere with bench supervision. Such supervision is more likely with younger faculty. Hence, if frequent or constant need for direction is desirable, one should be clear that it can be provided. The long-range value of a faculty advisor is also based in part on outside contacts and knowledge of postdoctoral and job connections. A student should meet the lab personnel of the potential advisor for a sense of the type of supervision provided and whether there appears to be a desirable ambiance in a group.

#### **5. Area of research**

How interesting is the subject area to you? What are its ultimate directions and goals?

### **C. THESIS COMMITTEES**

**A thesis committee is to be selected by the student's Research In Progress presentation in the second semester of the second graduate year.** The 5-member committee must include the dissertation advisor, who serves as chairperson, and at least three faculty members of the IMP Program. A *Thesis Committee Notification* form must be filled out, signed by all committee members, and returned to Lauren Hearn.

The duties of the thesis committee include assisting the student in creating and executing an original, publishable research project, assisting in the preparation of an acceptable dissertation and administering the final oral examination (i.e., the dissertation defense). As such, this committee is vital to the progress of the student. **The first committee meeting will occur in conjunction with the student's first RIP (year 2 for Ph.D. students and G1 for M.D.-Ph.D. students).** Although it may be convened earlier, the **second committee meeting will involve presentation of a thesis proposal, to be held no later than Feb 1st of the third graduate year (year 2 for MD-PhD students).** The written thesis proposal must be submitted to thesis committee members and the Program Administrator (Lauren Hearn) January 30th of the third graduate year (year 2 for MD-PhD students). Committee approval of the thesis proposal by this time is required; failure to meet this deadline will result in revocation of the student's stipend.

**Subsequent committee meetings** are to be held at least once per calendar year, including the final year of graduate study. A student must have at least 3 committee meetings prior to thesis defense. However, the thesis committee may recommend more frequent meetings as needed to more closely monitor a student's progress. At least 3 of the 5 thesis committee members must be in attendance at each meeting. If possible, annual committee meetings are most conveniently held immediately after the Research In Progress (RIP) seminar, which each student prepares once per academic year. For this meeting, each student will provide a short written report detailing the progress made in accomplishing each Specific Aim, possible revisions in Aims, manuscripts as drafts, submitted, or in press to each committee member no less than 1-week before an oral presentation. A *Thesis Committee Meeting Summary and Progress Report* form must be completed and returned to the IMP Program Office (Lauren Hearn) after each committee meeting.

#### IV. PROGRAM REQUIREMENTS

The following sections explain the necessary requirements for obtaining a Ph.D. degree from the IMP graduate program. The successful completion of ALL COMPONENTS as described is required to be an IMP student in good standing.

Summary of requirements for obtaining a Ph.D. degree from the IMP program are:

- 1) Obtain a grade of “B” or better in all courses.
- 2) Pass the oral qualifying exam
- 3) Develop a committee-approved thesis proposal.
- 4) Participate in the academic events of the program, which includes seminars, research in progress, journal clubs, etc.
- 5) Meet at least annually with a thesis committee.
- 6) Write and successfully defend a thesis dissertation.

#### A. COURSE REQUIREMENTS

**Students must complete 72 hours of credit to graduate.**

This is accomplished in two parts:

**Part 1:** 24 credit hours are completed in the first academic year, at which time students are placed in "Advanced Standing".

**Part 2:** Once in Advanced Standing, students must complete a minimum of 48 credit hours. 16 of these credit hours must be in coursework. The curriculum detailed below satisfies all coursework credit hours and IMP program course requirements in the first two graduate years. However, students may enroll in additional GDBBS courses after the 2nd year in consultation with their thesis advisor. The “Application for Candidacy form” needs to be filed in the GDBBS office once the 48 credit hours are completed.

#### IMP Program Curriculum

##### Semester 1 (Fall)

Basic Biomed & Biol Sciences I	IBS 555	6 credits
Concepts of Immunology	IBS 542	4 credits
Intro to Research	IBS 545	1 credits
Laboratory Rotations	IMP 597r	1 credit
Colloquium in Immunology	IMP 792r	2 credits

##### Semester 2 (Spring)

Basic Biomed & Biol Sciences II	IBS 556	6 credit
Virology	IBS 513	5 credits
Intro to Graduate Seminar	IMP 570r	2 credits
Laboratory Rotations	IMP 597r	1 credit

##### Semester 3 (Fall)

TATTOO		0 credit
Values in Science	IBS 606	1 credit
Expt’1 Appr Microbiol/Immunol	IBS 744r	2 credits
Intro to Graduate Seminar	IMP 570r	2 credits
Current Topics in Immunology	IBS 747r	5 credits
Colloquium in Immunology	IMP 792r	2 credits
Adv. Graduate Research	IMP 699r	1 credit

#### **Semester 4 (Spring)**

Intro to Graduate Seminar	IMP 570r	2 credits
Current Topics in Immunology	IBS 747r	5 credits
Adv. Graduate Research	IMP 699r	2-3 credits
Either of the following courses:		
Annual Reviews Immunology or	IBS 777r	2 credits
Stats for Expt'l Biology or	BIOS 505	4 credits
Elective	(with permission of DGS)	

**IMPORTANT: Students in years 3-6 are required to register for 2 credit hours each semester of Advanced Graduate Seminar (IMP790r).**

Students can be exempted from specific required courses if it is established that equivalent previous course work has been satisfactorily completed. Other electives would then be available for the student to substitute for the exempted required course. Students must register for a minimum of 12 credit hours each semester. This must be approved in writing by the Director of Graduate Studies.

#### **Electives**

Electives are to be decided jointly between student and thesis advisor.

#### **Recommended Electives:**

IBS 561	Eukaryotic Chr. Org. & Function
IBS 720	Eukaryotic Gene Org. & Regulation
IBS 504	Intro Prokaryotic Genetics
IBS 538	Design and Analysis of Experiments
IBS 745	Infection & Immunity
IBS 702	Molecular Mech. Signal Transduction
IBS 705	Oncogenes & Tumor Suppressor Genes
IBS 701	Cell Surface Receptors
IBS 524	Cancer Biology
IBS 559	Exp'tal Approaches in Biological Science
IBS 522r	Hypothesis Design & Scientific Writing

#### **M.D.-PH.D. Students**

Because M.D.-Ph.D. students have completed more than 24 hours of basic science course work, they enter the program in Advanced Standing and, as a result, their first year of courses are counted towards the 24 credit hours required. Therefore, to fulfill the graduate school requirements for a Ph.D. degree, M.D.-Ph.D students must take a minimum of 16 credit hours of coursework. The following curriculum satisfies these requirements and fulfills course requirements for the IMP Program. *Exemption from specific required courses must be approved by the Director of Graduate Studies.*

#### **M.D.-PH.D. Curriculum**

##### **G1 Semester 1 (Fall)**

TATTOO	0 credit		
Values in Science	IBS 606	1 credit	
Intro to Grad. Seminar	IMP 570r	2 credits	
Exp'tal Appr Microbiol/Immunol	IBS 744r	2 credits	

Concepts of Immunology	IBS 542	4 credits
Colloquium in Immunology	IMP 792r	2 credits
Adv. Graduate Research	IMP 699r	2 credits
G1 Semester 2 (Spring)		
Intro to Grad. Seminar	IMP 570r	2 credits
Virology	IBS 513	5 credits
Current Topics in Immunology	IBS 747r	5 credits

**G2 and subsequent years** are required to register for 2 credit hours each semester of Advanced Graduate Seminar (IMP 790r).

### **IMPORTANT NOTIFICATION FOR ALL IMP STUDENTS**

**Enrollment in classes outside the GDBBS course offerings, within or outside Emory University, has the high potential to negatively affect a student's performance in the laboratory and in other program-related academic activities. Therefore, students are prohibited from taking courses for credit outside of the GDBBS. In unusual circumstances, exceptions may be made for each course by petitioning the Executive Committee of the IMP program.**

### **GRADE CRITERIA**

Students must attain an average grade of B or better in course work each semester. No grade less than B is acceptable in required IMP courses. Any grade below a B will be brought to the attention and discussed by the IMP executive committee for possible academic probation (see next section).

Students with an average grade of less than B will be placed on academic probation, subject to review by the IMP Executive Committee. Students on Academic Probation due to their grade point average have one semester to bring their grade point average above the minimum. The IMP Executive Committee may require the student to retake any course in which a grade of less than B was given. Those who have received an unacceptable grade may not receive any grade less than a B in any subsequent course work. Failure to satisfy these criteria may be grounds for dismissal from the IMP graduate program.

### **TEACHING EXPERIENCE**

The Teaching Assistant Training and Teaching Opportunity Program (TATTO) provides teacher training and experience for students in the GDBBS. Completion of the TATTO program is required for all Ph.D. students. This three-day required summer course takes place one week immediately prior to the beginning of the Fall semester. In most cases, students attend in the summer following their first year of graduate study, however, this may be adjusted in special circumstances.

**Teaching Assistantship (TA).** All students in the GDBBS are required to serve as a Teaching Assistant for one semester, usually during the second graduate year. Teaching Assistants typically serve as laboratory instructors or discussion leaders for small groups. Teaching Assistants also assist students with problems during scheduled office hours, help prepare handouts and/or laboratory material, and help administer and grade exams. Students assigned to laboratory courses assist in setting up laboratory exercises, and help students understand the theoretical and practical aspects of the exercise.

## **B. PH.D. QUALIFYING EXAMINATION**

An oral qualifying examination is administered to evaluate each student's mastery of scientific concepts before permitting him/her to proceed to full-time doctoral dissertation research. If a student is deemed deficient in the qualifying examination, he/she will have one more opportunity to retake and pass the oral test before the start of the next academic year.

The oral examination will assess each student's comprehensive knowledge of immunology and other pertinent scientific areas. Each student is expected to be fully-versed in immunology and virology (required IMP courses). Topics can also include biochemistry as well as experimental techniques and design. In addition to possessing a broad range of facts and knowledge, the student must demonstrate an ability to synthesize information and display systematic reasoning skills. The oral examination will be administered during the **first weeks of June** (2nd year for Ph.D. students and G1 for M.D./Ph.D. students). Students are provided the opportunity to take a 3-week study period following class finals and prior to the start of the examination period to prepare for this examination.

A committee of four IMP faculty members will be assigned to administer the oral examination to each student, with one faculty member or DGS who will serve as chairperson. Thesis advisors **will not** be permitted to attend the examination. The examination will begin with the student providing a five-minute overview of their current research. No slides or overhead transparencies may be used, however, it is permissible to write/draw material on the dry ink board just before the examination. Each member will then be given ten minutes to individually ask questions, followed by a five-minute period when the other members can pose follow-up questions. There will be two rounds of questioning.

Students must obtain the IMP Oral Qualifying Examination form to present to their committee at the qualifying examination. This form, which will include the signatures of each committee member, will be returned to Lauren Hearn.

## **C. THESIS PROPOSAL**

A written grant describing the students proposed research is to be completed by December 1<sup>st</sup> following completion of the oral examination and given to each member of the thesis committee and the Director of IMP. The thesis committee members must approve the proposal following a thesis committee meeting to be held no later than February 1st of that academic year. **Failure to meet this deadline will jeopardize the student's stipend support.** The student must return to Lauren Hearn the IMP Thesis Proposal Approval with the approval signatures of each committee member, and the signature of the IMP DGS. A copy of the thesis proposal will be placed in the student's permanent file.

The grant should adhere to the format and instructions for NIH NRSA postdoctoral application. Briefly, the thesis proposal is to be divided into 5 sections - Specific Aims, Background and Significance, Preliminary Data, Research Design and Methods, Literature Cited – and formatted as single-spaced, 1 inch margins, Arial font, 11 point size, with a 10-page limit (excluding references). **Proposals that do not adhere to these format requirements will be returned.** Students are encouraged to solicit funded R01 grant applications from faculty as guides for organizing their thesis proposals. The student's thesis advisor is expected to aid in the design and editing of the thesis IMP Student proposal. Thus, the thesis proposal should be written by

the student with scientific input and editorial advice from their thesis advisor. The presentation of the thesis proposal signals the start of a collaborative interaction between the student, thesis advisor, and committee to foster the student's independent research program and track its progress.

Each student should prepare an oral slide presentation of his/her thesis proposal. This presentation should provide a brief overview of the field of interest, followed by a presentation of each specific aim, hypotheses, preliminary results, and approach(s) to be used.

**Deadlines:**

- Thesis proposal is due to your thesis committees and the IMP DGS no later than January 30th following a passing mark on the oral qualifying exam.
- Your thesis committee must meet and approve the thesis proposal no later than March 1st of that academic year.

**V. AWARDING OF PH.D. DEGREE**

The format of the thesis must be approved by the thesis committee before you begin writing. A copy of the thesis in final form must be submitted to all members of the Committee at least two weeks before the examination. The written dissertation must conform to Graduate School Guidelines, but in general will consist of an original account of the background, approach, experiments, and conclusions of your thesis research. Published papers written by the student may be reformatted as chapters in the thesis, but an original introductory chapter (15-20 page review of the literature) and concluding chapter must be added. The final chapter (~10 pages) should not simply summarize the conclusions made in the dissertation, but provide a scholarly discussion how these conclusions advance the field of study. **The dissertation must indicate which figures and tables are based on data generated by the Ph.D. candidate.**

**It is expected that a student will have at least one first-author publication accepted in a peer-reviewed journal at the time of their dissertation defense.**

The final oral examination (thesis defense) is scheduled by the student with the approval of their thesis committee. The examination is administered by the thesis committee, the thesis advisor serving as chairperson. The examination is public and anyone attending may ask questions. After the public presentation, the audience is dismissed and the thesis committee may further question the candidate. The success of the defense is determined by majority vote of the thesis committee.

**Checklist**

Pick up an application packet from the GDBBS office, Suite 314, old Dental Bldg., the semester before you intend to graduate. This packet also includes deadlines for submitting each of the forms listed below. **The following checklist must be completed in order to obtain your Ph.D. degree, otherwise you will need to reapply.**

1. File "Application for Candidacy" form after 3rd yr. – once you achieve the 48 minimum credit hours.
2. File "Application for Degree" (if filed after the GDBBS deadline, a \$25 fee will be due).
3. To be given to the IMP Program Administrator, Lauren Hearn **no less than two weeks** before

your dissertation defense date. This information is required for the IMP Program Administrator to prepare the Defense Pamphlets and announce the oral defense on the IMP Listserv. It is essential that these requirements be met in order to prevent scheduling conflicts for faculty and students, and to provide sufficient advance notice to ensure a public defense.

- a. Title of Ph.D. dissertation
  - b. Date, time and place of defense
  - c. Precise name to be listed
  - d. Abstract of dissertation
  - e. List of papers which includes published or in press manuscripts, submitted manuscripts and manuscripts in preparation
  - f. List of presentations
  - g. Name of thesis advisor and thesis committee members
4. At your defense bring the following forms:
- a. "Report of Completion of Requirements" to be signed by ALL thesis committee members and the IMP Program Director or Director of Graduate Studies.
  - b. Five copies of the "Approval Sheet" – this is the face page of the Ph.D. dissertation that each student prepares. An example of the Approval Sheet is provided in the application packet. Each copy of the Approval Sheet is to be signed by the advisor and at least two members of the thesis committee.
5. All forms should be returned to the GDBBS office by the deadline as listed on the cover sheet of the application packet.

## **VI. TERMINAL MASTERS DEGREE**

In the event that a student chooses not to complete the requirements to complete a Ph.D. he/she may apply for a Masters Degree. Award of the Masters Degree will require that: (1) the student successfully completes 2 years of course work; (2) passes the qualifying examination; and (3) that the student completes a written thesis that is approved by the thesis committee. The student is required to defend the thesis in a final oral examination that will be comprehensive in scope. The examination is public and anyone attending may ask questions. The student is expected to achieve a high degree of expertise in the area of Immunology and Molecular Pathogenesis. However, the scope and depth of the Master's thesis is expected to be significantly less than that of the Ph.D. dissertation.

## **VII. OTHER ACTIVITIES**

### **A. PROGRAM SEMINARS, JOURNAL CLUBS**

Attendance at weekly IMP Program seminars is a requirement for IMP students. IMP Program seminars given by faculty and invited speakers are held each Tuesday at 4 pm in the Whitehead auditorium (unless otherwise notified via IMP Listserv) throughout the academic year.

Arrangements are made for students to meet with guest speakers, and students are encouraged to participate in the scientific discussions. Students are also strongly encouraged to participate in the biweekly student-organized journal club that is also attended by IMP faculty.

### **B. Research-in-Progress (RIP)**

Students are required to participate in the weekly Research-In-Progress meeting (each Wednesday at 4 pm, old Dental Building, room 230), where they present their ongoing research to other IMP predoctoral students, postdoctoral fellows, and faculty.

### **Guidelines for RIP are as follow:**

1. The first RIP for each student will be in the Spring of the 2nd year (G1 for M.D.-Ph.D. students).
2. RIP seminars will begin the first Wednesday of the academic year.
3. Students will select a date for their RIP from blocks of dates allotted for their year (contact Lauren Hearn for available dates).
  - i) Students will pick dates most appropriate for attendance by their advisor and thesis committee members.
  - ii) Any changes to the RIP schedule must be arranged by the student with another student within their class year. This change must be made no later than four weeks before their scheduled RIP, have the approval of the DGS, with notification of any change provided to Lauren Hearn.
  - iii) Students are required to notify the IMP Program Administrator by August 1<sup>st</sup> preceding the academic year with their request for a RIP date, otherwise dates will be assigned for them.
  - iv) Students within their last year of the Program are required to present a RIP. Email announcements for RIP will be sent one day in advance.

### **Regional and National Scientific Meetings**

Students are strongly encouraged to present their research at the graduate school, regional and national scientific meetings. To encourage participation, a small amount of travel money is usually available for students presenting data from the Graduate Student Council, the Division and the IMP Program (for one meeting per year). IMP students who participate in the Graduate school symposia will be awarded \$250 for travel to a scientific meeting, all other IMP students will get \$150.

### **C. IMP LISTSERV**

A listserv (ImmSem-L) has been established on the Emory University computer to facilitate distribution of notices of seminars and meetings in immunology. All IMP students and faculty are requested to subscribe.

#### **What is a listserv?**

A listserv is a mail distribution program. Messages sent to the listserv are immediately forwarded by E-mail to each of the subscribers. Consequently, one can send a notice to all subscribers as easily as any one. In addition, the listserv facilitates maintaining a current mailing list of people interested in immunology. Each individual is responsible for deciding where he/she will receive mail and for notifying the listserv administrator of changes.

### **D. VACATIONS AND LEAVES**

The course of study and graduate stipend you receive are based on a 12-month commitment. **GDBBS students are permitted a maximum of two weeks of vacation time each year, excluding holidays.** First year students are required to schedule these absences with the Director of Graduate Studies and the faculty member in whose lab they are working. Unscheduled absences or excessive vacation, holiday or leave time will result in a reduction of your stipend and/or possible suspension from the Program.

### **E. FINANCIAL SUPPORT**

Stipends and tuition fellowships, awarded to students on the basis of academic merit, are

intended to cover basic living expenses and tuition. With the exception of special awards, such as the Woodruff Fellowship, stipend levels are set by the GDBBS based upon the availability of funds from Graduate School and university sources. The faculty also encourage and assist students in obtaining individual stipend support from extramural sources, such as federal agencies and private foundations. Students are supported by the GDBBS for an aggregate of three years of training. Additional support will be provided by research advisors, training grants, or other sources. Financial support is provided only to full-time students working toward the Ph.D. degree.

Stipend and tuition fellowships are awarded to allow students to devote full-time to the graduate program and complete the requirements for the Ph.D. degree in as short a time as is consistent with adequate training and research progress. Additional employment is not permitted. Graduate education and research are by necessity largely self-motivated processes, and the distractions of outside employment can interfere with the ability of students to prepare satisfactorily for their future professional careers. If additional income is absolutely necessary, students are encouraged to consider the possibility of low-interest student loans and should consult with the financial aid office.

#### **F. LEAVING THE PROGRAM**

The question of what direction a student's career will take following completion of the Ph.D. should arise early and become increasingly important as training progresses. It is never too early to consider career options. Students receiving a Ph.D. usually take a postdoctoral research position to acquire additional techniques and expertise to further prepare for an independent research career. Such postdoctoral training is usually essential for a career in academic research. Some students take permanent positions in industrial or government laboratories immediately after receiving the Ph.D. degree, while others enter additional advanced degree programs such as medical school, or seek careers in administration of science funding or policy, or editorial positions in scientific journals. Career objectives can best be realized through careful planning. All members of the faculty stand ready to advise students on career options, and students are encouraged to seek this advice at any time during their training.

#### **G. INTEROFFICE MAIL**

All interoffice mail for first year students will be delivered to the Graduate Division of Biological and Biomedical Sciences, Dental Building, Suite 312. Be sure to check your mailbox regularly. After you have completed your rotations and select an advisor, you will receive a mailbox in that department.

#### **H. UNIVERSITY REQUIREMENTS**

Formal University requirements are detailed in the current Bulletin of the Graduate School of Arts and Sciences and the Graduate Student Handbook and are in addition to those detailed in the IMP student guidelines. While every effort has been made to make these guidelines as accurate and complete as possible, University policies may be subject to change without notice, and students must keep themselves up-to-date on these policies.

#### **I. IMP Website**

The IMP website can be found at [http://www.biomed.emory.edu/PROGRAM\\_SITES/IMP/](http://www.biomed.emory.edu/PROGRAM_SITES/IMP/). Information regarding seminars, program forms, students, faculty and their research can be found on this website.

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