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IMMUNOLOGY GRADUATE PROGRAM STUDENT GUIDELINES
THE UNIVERSITY OF IOWA

In addition to the Graduate College Manual of Rules and Regulations, this handbook is for use by the Immunology Graduate Students to clarify Immunology Program-specific policies. The document lists the program leadership, course requirements, laboratory rotation policies, Immunology Journal club and seminar, Comprehensive exam format and schedule, and Dissertation committee guidelines.

I. PROGRAM LEADERSHIP:

Program Director:
Dr. Steven Varga 3-532 BSB 335-7784

Executive Committee Members:
Dr. Steven Varga 3-532 BSB 335-7784
Dr. Gail Bishop 2296 CBRB 335-7945
Dr. John Colgan 3270 CBRB 335-9561
Dr. Lee-Ann Allen D154 MTF 335-4258
Dr. Kevin Legge 1028 ML 335-6744
Dr. Jon Houtman 2210 MERF 335-7780

Graduate Studies Committee Chair:
Dr. John Harty 3-530 BSB 335-9720

Admissions Committee Chair:
Dr. Vladimir Badovinac 3-550 BSB 384-2930

Comprehensive Exam Committee Co-Chairs:
Dr. Lee-Ann Allen D154 MTF 335-4258
Dr. Thomas Waldschmidt 335-8223

Curriculum Committee Chair:
Dr. John Colgan 3270 CBRB 335-9561

Seminar Committee Chair:
Dr. Thomas Waldschmidt 1038 ML 335-8223

Program Administrator:
Paulette Villhauer 354 MRC 335-7748

Program Assistant:
Karina Escobedo 354 MRC 335-6512
Bhuvana Parampalli 354 MRC 384-4470

II. 2017 - 2018 ACADEMIC CALENDAR:

Fall semester 2017:
First day of classes August 21
Last day of classes December 8
Close of Finals week December 15

Spring semester 2018:
First day of classes January 16
Last day of classes May 4
Close of Finals week May 11
<table>
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<tr>
<th>Rotation</th>
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<tr>
<td>Summer Rotation</td>
<td>June 5 – August 18</td>
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<td>Fall Rotation</td>
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<td>Winter Rotation</td>
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</tr>
<tr>
<td>Spring Rotation</td>
<td>February 12 – May 4, 2018</td>
</tr>
</tbody>
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Registration for Fall, Spring, and Summer semesters are performed through the program office during the early registration period.
III. GUIDANCE:

The Graduate Studies Committee is charged with overseeing the progress of all graduate students at all stages of their training. Incoming first year students are assigned a primary advisor from the Graduate Studies Committee who will advise the student on courses, lab rotations, and all other aspects of their education. Soon after arriving on campus, the students will meet with either the chair of the Graduate Studies Committee or their assigned advisor to discuss their specific interests, course work, and laboratories for rotations. In addition, the Graduate Studies Committee may occasionally meet with students to discuss their academic progress. When a student completes their rotations and enters a laboratory to perform dissertation work, the faculty member in charge of the laboratory will assume the role of advisor. The Graduate Studies Committee will however, continue to oversee the students’ academic and research progress. The Graduate Studies Committee is also available to the student for advice should problems or questions arise.

IV. FORMAL COURSE WORK:

Immunology graduate courses are offered not only to teach students the current concepts and paradigms within the field, but to emphasize the scientific approaches and methods used to attain this understanding.

NOTE: It is expected that the great majority of graduate students will follow the prescribed curriculum. However, it is recognized that circumstances may arise that require a student's course of study to be altered. Therefore, a student may ask the Graduate Studies Committee for permission to amend the curriculum requirements.

A. Required Courses:

Graduate Immunology and Human Disease IMMU:6247 (4 sh – Fall year 1). This course provides an overview of the important principles and key concepts in immunology including the induction of the innate and adaptive immune systems, the molecular events that control immune cell activation and the function of the immune system in infection and pathophysiological events. Offered fall semester only. Required of all first year students.

Graduate Immunology IMMU:6201 (3 sh – Spring year 1). This course emphasizes the purpose and design of experiments, and how their interpretation has led to current concepts in immunology. Sessions take the form of background presentation by the lecturer followed by analysis of primary research papers. Participation by students in the form of discussion and responding to questions is a key goal. Required of all first year students.

Basic Biostatistics and Experimental Design PCOL:5204 (1 sh – Fall year 1). This course is designed to provide a brief overview of the theory of experimental design and data analysis in the biological sciences for graduate-level students. At the completion of this module, students will feel comfortable identifying the types of analyses that are available for common types of data generated in the biomedical sciences, and will be empowered to critically review the statistical methods used in published studies.
The goals of this course are to familiarize new graduate students with important principles and key concepts in contemporary molecular and cellular biology; to help students develop the skills required to critically evaluate current research publications; and to familiarize students with the experimental techniques utilized to test specific hypotheses. These goals will be achieved through formal lectures on specific topics and discussions focus on evaluation of published research papers (recent or classical). Students are encouraged to ask questions for clarification and to seek out individual faculty members for additional assistance when needed.

Students will take 3 sh of elective credits. The following courses are suggested; others may be substituted with prior approval of the Graduate Studies Committee. These are either a 3 sh course or a 5-week 1-credit module on various areas of cellular and molecular biology, taught for graduate-level students. **MSTP students are exempt from this requirement, but may elect to take any modules they wish.** The **MSTP students are not exempt from taking the 1 module of Biostatistics.**

### Elective Courses

- Introduction to Protein Structures BIOC:7251 (1 sh)
- Transcription, RNA MCB:6215 (1 sh)
- Inflammatory Cell Signaling and Targeted Cancer Therapy MCB:6240 (1 sh)
- Growth Factor Receptor Signaling MCB:6225 (1 sh)
- Cell Cycle Control MCB:6226 (1 sh)
- Cell Fate Decisions MCB:6227 (1 sh)
- Mechanism of Cellular Organization MCB:6220 (3 sh)
- Enzymes, Carbohydrates, Nucleic Acids, and Bioenergetics BIOC:7252 (1 sh)
- Metabolism 1 BIOC:7253 (1 sh)
- Metabolism 2 BIOC:7254 (1 sh)
- Metabolism 3 and Biosignaling BIOC:7255 (1 sh)
- Molecular Biology BIOC:7256 (1sh)
- General Histology for Graduate Students; ACB:8121 (4 sh)
- Microscopy for Biomedical Research; ACB:5218 (3 sh)
- Graduate Bacteria and Human Disease; MICR:6259 (3 sh)
- Graduate Molecular Microbiology; MICR:6260 (3 sh)
- Graduate Viruses and Human Disease, MICR:6267 (4 sh)
- Biology & Pathogenesis of Viruses; MICR:6268 (2 sh)
- Ion Channel Pharmacology; PCOL6207 (1 sh)
- G-proteins and G-protein Coupled Receptors; PCOL6208 (1 sh)
- Steroid Receptor Signaling; PCOL6209 (1 sh)
- Graduate Microbial Genetics; MICR:6270 (3 sh)
- Pathogenesis of Major Human Diseases; PATH:5270 (3 sh)
- Translational Histopathology; PATH:5260 (3 sh)
- Integrated Topics in Infectious Disease MICR:7217 (1 sh)
- Introduction to Biostatistics BIOS:4120 (formerly BIOS:5110) (3 sh)

### Advanced Topics in Immunology

Advanced Topics in Immunology; IMMU:7221. (3 sh – Fall year 2). Graduate Immunology is a prerequisite, although MSTP students, who have taken MS1 Immunology, may elect to take Advanced Topics for credit in either year 1 or year 2. This course, taught during the Fall semester, is split into three sections with each section proctored by a different faculty member. The goal is for each instructor is to present the seminal papers in one area of immunologic expertise. This is done through the use of primary research papers and student presentations. Second year students are required to take this course for credit. Subsequently, students are required to attend an additional two sections as exemplars for younger students, and to
enhance their knowledge of a wider variety of immunologic topics. These two sections need not be taken during the same semester, but can be spread out during the ensuing years. This will enable students to choose two areas which are of particular interest to them. While participating in these additional modules, advanced students will be asked to lead discussions, and demonstrate proper presentation and critique of papers.

Immunology Graduate Student Seminar; IMMU:6211 (1 sh awarded during the fall semester and the spring semester each year). During both the Fall and Spring semesters, all graduate students will attend, and will present their research data under the supervision of the Immunology Program faculty. This exercise is designed to foster oral communication skills and collaboration among graduate students. Faculty evaluators will provide student presenters with useful written and oral feedback on their presentations.

BMED:7270 Scholarly Integrity/Responsible Conduct of Research 1 (0 sh)
BMED:7271 Scholarly Integrity/Responsible Conduct of Research 2 (0 sh)

Courses entitled Scholarly Integrity/Responsible Conduct of Research 1 and 2 are required for all graduate students in Immunology. These courses are designed to expand on and advance training in the principles of scholarly integrity and responsible conduct of research (SI/RCR). As a prerequisite, all individuals taking these courses will have completed basic SI/RCR training through completion of CITI online, web-based training. Following verification of successful completion of all required CITI module, graduate students must complete the 2-semester sequence (BMED:7270, BMED:7271) for meeting full SI/RCR training requirements per the CCOM Office of Graduate & Postdoctoral Studies and their respective departments and programs. Individuals may start the series in either the Fall or Spring semester and complete the series in the following semester (e.g., Fall > Spring; or Spring > Fall series). The workshops emphasize small group discussions and foster ongoing conversations that explore important aspects of the ethical and responsible conduct of scholarly research. Case studies are assigned that cover all core competency areas emphasized by NIH – data acquisition, management, sharing & ownership; conflict of interest & commitment; human subjects; animal welfare; research misconduct; publication practices & responsible authorship; mentor/trainee responsibilities; peer review; collaborative science; financial management; research safety; responsibility to society.

Writing a Scientific Proposal; IMMU:6241:0001 (1 sh – Fall year 2). The goal of this course is to teach the skills of scientific writing, using the highly relevant vehicle of scientific proposal preparation. This skill is crucial in many future scientific careers, not restricted to academic research. Students will practice skills of hypothesis and rationale formulation, experimental design, and the ability to present ideas clearly and convincingly in a concise format. During the course, each student will prepare a proposal that can subsequently be submitted to external funding agencies.

B. Elective Courses:

Students will take 3 sh of elective credits. Any student would have the option to take additional approved electives, on a case-by-case basis, in consultation with the student’s advisor and the Curriculum Committee. Course of study will be approved
and supervised by the Graduate Studies Committee until a dissertation advisor and dissertation committee has been chosen.

C. **Minimum Number of Credits for the Ph.D. degree – 72:**

It is anticipated that most students will complete classroom work (except for Immunology Graduate Student Seminar and two additional modules in Advanced Topics) by the end of the 3rd semester. Other credits required by the Graduate College for the Ph.D. can be fulfilled by research laboratory course credits. The minimum number of credits required for the Ph.D. degree (coursework plus laboratory) is 72.

D. **Academic Progress:**

An Immunology Program Graduate Student shall be sent a written notification if, after completing 9 sh (at least 6 sh of which carries a letter grade other than S/U) of graduate coursework at The University of Iowa, the student's cumulative grade-point average falls below 3.00. The student will then have one semester to raise their grade point average above 3.0. Two consecutive semesters of a cumulative grade point average of less than 3.0 will lead to a dismissal from the program due to a failure to make satisfactory academic progress. In addition, any Immunology Program Graduate student who earns a grade below a B minus in the core Immunology Program courses of: Graduate Immunology and Human Disease, Graduate Immunology, and/or Writing a Scientific Proposal will be required to retake the course(s) the next semester that it is offered. If the student again earns a grade of less than a B minus, the student will be dismissed from the program due to failure to make satisfactory academic progress. The student must also make satisfactory progress during laboratory rotations with at least 2 of the 3 rotation mentors indicating that the student had performed satisfactorily during the rotation as indicated on the rotation evaluation form. *It should be noted that this policy is separate from the general Graduate College policy regarding academic probation (Section IV.B.), and will be enforced for Immunology Graduate Program students independently of the Graduate College policy.*

V. **LABORATORY ROTATIONS:**

Prior to selecting a laboratory for dissertation work, students are expected to perform three laboratory rotations, with each rotation being approximately 12 weeks in duration. During the first semester, a student should become acquainted with the research interests of the faculty members in the Program. This learning process will be facilitated by faculty presentations in Immunology Graduate Student Seminar during the Fall semester. Students are also encouraged to meet with specific faculty to discuss their research programs. Students can then make an informed decision about their laboratory rotations, with the guidance and approval of their advisor and the Graduate Studies Committee. At the latest, students should begin their first rotation within the first week of graduate study. MSTP students and students with M.S. degrees (which include a research-based dissertation), may be excused from one rotation. Students having difficulty choosing a laboratory for dissertation work may perform a fourth rotation. The rotations are graded as either "Satisfactory" or "Unsatisfactory". This grade is based upon a number of criteria including attendance and work habits. It is important to note that when not in classes or seminars, the students are expected to spend the remaining
portion of the day in the laboratory. Without a strong commitment to the rotation project, it is difficult to fulfill the purpose and aims of the rotation. A "satisfactory" grade is required in each of the laboratory rotations. If a "satisfactory" grade is not obtained in one of the rotations, an additional rotation will be assigned. Failure to obtain a "satisfactory" grade in the extra rotation will result in the student being placed on academic probation. After each rotation, an evaluation by the faculty member of the student and by the student of the faculty member will be submitted to the Graduate Studies Committee.

VI. IMMUNOLOGY SEMINAR:

The Immunology program oversees a weekly seminar series. During the school year, the weekly Immunology seminar features a number of well-known Immunologists from around the country, as well as Immunology program faculty. Although seminar is not part of the formal curriculum, students are expected to attend.

VII. TEACHING REQUIREMENTS:

All incoming students will have a one-semester teaching requirement. A variety of courses are available in several Departments, and the Program leadership will place students in courses based upon interest, expertise, and scheduling.

VIII. OTHER IMMUNOLOGY EVENTS:

In addition to classes and seminar, a number of other events are available for graduate students. A Program highlight is informal dinners scheduled with most of the visiting scientists who present in the Immunology seminar series. Typically, this dinner is held at a faculty member's home, and is attended by only students, postdoctoral fellows, and the visiting speaker. These dinners are designed for the benefit of the students, and are an excellent opportunity to personally meet outstanding scientists, and "pick their brains" on contemporary issues. Aside from Immunology seminar, a number of other meetings are available. These include focused or topic-oriented journal clubs, seminars in other departments (e.g. - Microbiology or Physiology seminar series), and Ph.D. dissertation defense seminars. All graduate students are strongly encouraged to affiliate themselves with a journal club and to become a regular participant. Students are also strongly encouraged to join the Center for Immunology & Immune-Based Diseases at The University of Iowa (https://www.medicine.uiowa.edu/immunology/), which sponsors an annual Research Retreat each year in August, as well as a monthly Research In Progress series. Collectively, these events are not only key for one's education, but are important in getting to know all of the other immunologists on campus, and fostering scientific collaborations.

IX. Individual Development Plan (IDP):

The IDP is a tool to assist trainees with career and professional development. The IDP provides a platform for trainees to identify professional goals, assess competencies relevant to these goals, and develop a plan to achieve specific objectives related to their career goals. The trainee-developed IDP becomes a platform for discussion with their Ph.D. mentor, to foster communication important for the trainee's professional development. The process is interactive and reiterative to ensure training success and satisfaction. Several steps are involved in the development, implementation, and revision of the IDP. The trainee and mentor are active participants, working together to
design a plan that helps the trainee meet goals identified in the IDP. The process involves identification of short-term objectives, with clear expectations and milestones that address long-term career goals.

**Basic steps for Trainee**
1. Conduct a self-assessment
   a. Define your time commitment to various components of the graduate experience.
   b. Assess your skills and interests.
   c. Use outside resources to get feedback on your skills, strengths, and weaknesses. The following **self-assessment tools** provide a nice resource for this self-assessment.
   
   [http://myidp.sciencecareers.org](http://myidp.sciencecareers.org)
   [www.apsarchive.org/download.cfm?submissionID=7365](http://www.apsarchive.org/download.cfm?submissionID=7365)

2. Survey opportunities with mentor
   a. Identify career opportunities that interest you.
   b. Define differences between your current skills and additional skills needed for your identified career objectives.
   c. Prioritize areas for development and discuss strategies for addressing objectives with your mentor.

3. Write/update your IDP, share it with your mentor, and review together
   a. Identify specific skills that you need to develop in the short-term (e.g. 1-2 years)
   b. Define strategies to develop each skill. Use the “SMART” principle:
      i. **Specific** - is it focused and unambiguous?
      ii. **Measureable** - define metrics to know whether the objective is achieved.
      iii. **Action-oriented** - identify concrete steps to achieve the objective.
      iv. **Realistic** - is the strategy feasible?
      v. **Time bound** - define a deadline.
   c. Discuss draft with mentor

4. Implement the plan, and revise as needed (at least annually)
   a. Review your plan with your mentor on a regular basis.
   b. Revise as necessary.

**Basic steps for Mentor**
1. Be familiar with training requirements and opportunities.
2. Discuss opportunities with trainee.
3. Review your trainee’s IDP and help revise. Provide written comments at the end of this document.
4. Establish regular periods for IDP review and revision, as needed.
X. COMPREHENSIVE EXAMINATION:

A. Overview:

The purpose of the comprehensive exam is to evaluate whether students have successfully acquired the skills and competence to continue on to the research and dissertation phases of the Ph.D. program. Two essential skills that will be evaluated are:

1. The ability to learn and understand the state of knowledge in an area of inquiry, identify a significant knowledge gap in that area, formulate a hypothesis or hypotheses to test, and design an effective approach to testing the hypothesis(es).

2. The ability to communicate clearly with other scientists orally and in writing.

Each student taking the Comprehensive examination in a given cycle will prepare a single abstract of an original research proposal, to be submitted to the examining committee according to the schedule outlined below. The abstract must describe a proposal that does not overlap in major approach or topic with the student’s dissertation research, or any other ongoing projects in the dissertation lab. The abstract will have 0.5” margins and no smaller than 11 point Arial font type and is limited to 2 single-spaced pages (references not included in the 2 page limit). The student must not consult with his/her dissertation advisor during this process, except to ask an opinion about potential overlap of a topic. The Abstract will consist of a Rationale, explaining the context of the area of focus, and the significance of the question(s) to be addressed, and Specific Aims, which briefly outline the major experimental approaches (not the detailed Methods) to be taken in the project. Students are encouraged to review abstracts and Rationale/Aims pages of grants of their mentors or senior postdoctoral fellows as examples for what sort of information this should contain, while they prepare their own documents.

The examination committee for the student will then determine a) if the abstract topic is appropriate as non-overlapping and b) if the abstract is scientifically sound, and could potentially serve as the basis for a defensible research proposal. Three outcomes are possible.

1) The abstract is judged acceptable; the student may begin work on the written proposal.

2) The topic of the abstract is acceptable, and the committee believes that the abstract could potentially lead to a defensible proposal, but first requires revision. If the needed revisions are substantial, part or all of the examining committee will convene a meeting with the student, to discuss the nature of the revision needed. The student will receive a written summary of the deficiencies in the abstract and the revisions required. A revised abstract will be due one week after this summary is sent to the student. The student will have one opportunity to revise the abstract so it forms a suitable basis for the written proposal.
3) The abstract is judged fatally flawed. The student will be informed in writing of the basis for the committee’s decision, and will be instructed to prepare a new abstract on a different research topic. The second abstract will be due 3 weeks after this notification. If the second abstract cannot be revised to a level of acceptability, the student will be considered to have failed the first attempt at the Comprehensive examination, and must wait a minimum of 4 months before a second attempt.

After the abstract is accepted, the student will be given 4 weeks to complete and submit the written comprehensive exam proposal. The oral defense will be scheduled 10-14 days after the exam is submitted, depending on availability of the committee members. The comprehensive exam will be written in the form of an NIH style pilot grant proposal based on the abstract and instructions from the Comprehensive Exam Committee. The proposal will be limited to 15 double-spaced pages or less, with 0.5 inch margins and 11 point Arial font type. No more than 3 pages of this total can be devoted to specific methodological details. Rather than list all the details of specific protocols, students are urged to refer to published literature whenever possible, and instead focus on why a method was chosen, and its strengths and limitations that impact data interpretation. References and figures will not count in the 15 page limit, but together cannot constitute more than five pages.

Comprehensive exam abstracts and proposals should be the result of the student’s own ideas. Students may discuss their abstracts and proposals with other students and postdoctoral fellows. They are also allowed to consult faculty other than their dissertation advisers for questions regarding specific techniques, as well as general knowledge questions. However, they cannot ask faculty to review their rationale or Aims, or provide experimental design details. It should be emphasized that no matter who provides advice, the student is responsible for whatever is in his/her proposal, regardless of what any other scientist may offer as an opinion. “Dr. ____ said so” is NOT an excuse for incorrect information or flawed reasoning. The description of the exam as “comprehensive” means that the student should have a clear understanding of the state of knowledge that underlies the rationale upon which the proposal is built. When published papers are used as the basis for designing further experiments, be sure such papers are read thoroughly and carefully (not just the Abstract).

Primary advisors should excuse themselves from any administrative committee deliberations (other than the Dissertation Committee) which directly concern their students. Administrative committees will communicate directly with students. Advisors should not act as an intermediary in this process. If an Advisor feels compelled to raise a concern about a decision by an administrative committee, he/she should contact the Program Director.

The Comprehensive Exam Committee will hear the student's defense, which will be a brief oral presentation of the background, rationale, specific aims, and experimental approach. The student may use visual aids, such as PowerPoint slides or transparencies, which are specifically related to the presentation of the proposal. However, no additional reference material will be allowed in the room during the
defense. The student’s presentation will be followed by questions from the Comprehensive Exam Committee on the content of the oral defense and of the written proposal. All proposals submitted by the required deadline will be defended orally if they are readable. The Comprehensive Exam Committee, at its discretion, can direct a student to write a new proposal if the proposal submitted is significantly substandard.

The outcome of the comprehensive examination will fall into one of the three following categories:

1. **The student passes** and will be permitted to continue to work toward the Ph.D.

2. **The student passes with reservation** and will be given an opportunity to eliminate the reservation according to specific instructions from the examining committee. If the student is asked to make written revisions the student should provide a point-by-point response to the written critique provided by the committee and highlight the changes made in the revised document.

3. **The student fails**

It is anticipated that most students will take their comprehensive exam in the second semester of their second year. MSTP students who joined the dissertation laboratory at the beginning of the first year of graduate study may begin the Comprehensive Exam process in September of the second year of graduate study. If the first attempt is failed, a student may begin the examination process again no sooner than 4 months after the first exam is taken, according to the regulations of the Graduate College. If a student fails to pass after two attempts, the student will not be permitted to remain as a Ph.D. candidate.

Failure to take the Comprehensive Exam by the end of the fifth semester will, unless a specific exception is granted by the Graduate Studies Committee, result in a grade of "Incomplete" for the student's research for that semester. Exceptions must be fully explained and justified in a letter to the Chairperson of the Graduate Studies Committee. This letter will also be made part of the student's file. If the grade of "Incomplete" is not removed by the end of the next full semester, it will be changed automatically to an "F" and the student will be required to leave the program.

**B. Spring Comprehensive Exam Schedule:**

A typical Ph.D. student who spends Year 1 in the Program performing required coursework and 3 laboratory rotations will begin the Comprehensive Exam process in February of the second year of graduate study.

- **February 1:** Deadline for abstract submission.
- **February 8:** Deadline to notify students if the abstract is acceptable (with or without modification) by the Comprehensive Exam Committee, or whether an entirely new abstract is needed.
February 15: Deadline for submission of revised abstract, if appropriate.

February 29: Deadline for submission of new abstract, if first abstract was judged fatally flawed.

The remainder of the timeline will follow the same approximate schedule as for the first abstract, if a second is required. Note: As soon as an abstract has been accepted, the Program Office will contact the committee members to schedule a meeting. The student will be given 4 weeks to complete and submit the NIH style grant proposal following notification of acceptance of the abstract. The proposal must be turned into the Program Office for distribution to the committee. The oral defense will be scheduled within 2 weeks of proposal distribution, whenever possible.

C. Autumn Comprehensive Exam Schedule:

A MSTP student who joined the dissertation laboratory at the beginning of the first year of graduate study may begin the Comprehensive Exam process in September of the second year of graduate study.

September 15: Deadline for submitting an abstract.
The remainder of the timeline will be similar in intervals and decision points to that outlined above for the Spring schedule.

Note: As soon as an abstract has been accepted, the Program Office will contact the committee members to schedule a meeting. The student will be given 4 weeks to complete and submit the NIH style grant proposal following notification of acceptance of the abstract. The proposal must be turned into the Program Office for distribution to the committee.

NOTE: The guidelines are written to promote uniform schedules and uniform treatment of graduate students. However, exceptions are to be made in the case of illness, family crisis, or other serious circumstances that may interfere with a student's ability to follow the schedule outlined above.

XI. DISSERTATION RESEARCH:

By or before the beginning of the third semester (usually the fall semester of the second year), the student should choose a laboratory in which to do research. The faculty member from that laboratory will serve as the student's research advisor. If the research advisor selected by the student has not mentored a student through successful completion of the Ph.D. degree, the student and advisor must additionally select a Mentor of Record. Any Immunology Program faculty member who has mentored a student who achieved the Ph.D. degree is eligible to serve as Mentor of Record. The research advisor must submit the name(s) of the suggested Mentor of Record for final approval by the Graduate Studies Committee. The Mentor of Record should be selected as soon as possible after the student has chosen the research advisor. The Mentor of Record will serve as the chairperson of the student’s
dissertation committee. Together the student and the student's research advisor will select a Dissertation committee for the student prior to completion of the third semester of graduate study and submit these selections to the Graduate Studies Committee for approval. The Dissertation committee will consist of at least five members, including the student’s research advisor. At least four members of the committee will be members of the Immunology Graduate Program. The fifth faculty member may be from outside the Program, but must have an appointment in a Ph.D.-granting program/department. Unless the student has a Mentor of Record (who in that case will serve as Chair), the Dissertation Committee will elect a chairperson (who will not be the research advisor).

The Dissertation Committee will meet with the student at least once each year to review the plan of study and to receive a written report of research progress prepared by the student. The first of these meetings must be held within one year of passing the Comprehensive exam. All subsequent annual reports and Dissertation committee meetings must be completed within one month of the anniversary date of the student's passing the Comprehensive exam. The purpose of this yearly meeting is to determine whether the student's progress has been appropriate to allow for enrollment in the academic year beginning the following Fall semester. The written report will then be forwarded to the Graduate Studies Committee, and will be made part of the student's record. If the annual written report is not received within 60 days of this anniversary date, the student will receive an "incomplete" for that semester's research (148:231 Research in Immunology). If the student has not submitted a satisfactory report within the next 60 days, the grade will be changed automatically to an F and the student will be required to leave the program. Students with a Mentor of Record must hold meetings between the advisor, student, and Mentor of Record within 3 months of selecting a Mentor of Record and at least once between each annual Dissertation Committee meeting. The Mentor of Record will file a progress report following such meetings.

Each year which follows successful completion of the comprehensive examination, students will present their research to the members of the immunology community at the University of Iowa by giving a research seminar to be scheduled by the seminar committee in consultation with the dissertation committee.

The student or any member of the Dissertation Committee may, with reasonable notice, request a meeting, at other times of the year, in which the student and the Committee members would participate. This is especially encouraged during the latter stages of the student's dissertation work.

The Dissertation Committee will be responsible for administering the final examination, or dissertation defense.

Students are guaranteed stipend and tuition support for 6 years, provided they display satisfactory performance in fulfilling all academic requirements, as well as in the progress of their dissertation research. Support after 6 years is not guaranteed, but the student and mentor may petition the Program to continue support, if satisfactory progress is being made.

It is expected that the dissertation project be of sufficient breadth, depth, and novelty to result in first-author research publications in high quality peer-reviewed journals. A minimum of one peer-reviewed paper must be published or in press prior to the completion of the Ph.D. In addition, a second publication, in which the student is a co-author on a peer-reviewed article, a review or book chapter must be published or in
press prior to the completion of the Ph.D. The student will not be permitted to schedule a dissertation defense until it has been demonstrated that both of these requirements have been met.

XII. THE PH.D. DISSERTATION:

To be awarded the Ph.D. degree, a candidate must satisfactorily defend the Ph.D. dissertation.

The procedure to be followed by the student regarding the Ph.D. dissertation is as follows:

1. The student's completed or nearly completed research should be presented orally to members of the Dissertation committee for consideration. If the Dissertation committee considers progress to be adequate, the student will be advised to write the dissertation. The style of the dissertation will conform to that presented in the CBE Style Manual.

2. When a draft of the dissertation has been approved by the student's research advisor, a copy will be distributed to each member of the Dissertation committee at least two weeks before the date of the final defense.

3. This draft of the Dissertation must conform to the rules of the Graduate College office and must be presented to said office according to their schedule for that semester.

4. The student will present a public seminar on the dissertation work. All graduate students and faculty in the program will be encouraged to attend. The seminar will be followed by a defense of the dissertation before the student's Dissertation committee. A final draft of the Dissertation will then be prepared incorporating revisions suggested by the committee, and approved by the advisor and the committee.

5. Final corrected copies of the Dissertation must be submitted to the Graduate College office at least ten days before the graduation date.

6. Expenses for typing the dissertation, any illustrative material, and copies of the dissertation, are the responsibility of the student.

7. In addition to the copies required by the Graduate College, the student will present one final copy of the Dissertation to the Program for the permanent library file, and at least one copy to the advisor.

XIII. VACATIONS:

Successful graduate education in the sciences does not begin and end with the usual academic calendar, but rather is a full-time occupation. Reasonable vacation periods are certainly appropriate, but long or repeated absences are generally not permitted. Vacations or any other planned absences should be discussed in advance with the individual in whose laboratory a student is rotating or working.

Policy for Paid Leaves, Holidays, and Unpaid Leaves of Absence: Graduate Students in Biomedical Training Programs under the auspices of the CCOM Office of Graduate and Postdoctoral Studies

(Effective Date 8/24/2016)

Currently enrolled University of Iowa PhD students with a 25% or more appointment employed as:
- Teaching Assistants (FT19)
- Research Assistants (FR19-01, FR19-02)
- Graduate students appointed on federal training grants or federal fellowships

Paid Leaves

PhD students are entitled to University-designated holidays and up to (15) working days per fiscal year of absence without pay deduction. All paid leave must be scheduled with the approval of the mentor. PhD students may be absent for the University-designated holidays unless the mentor specifically requires the PhD student to work. At such time, the mentor and the PhD student shall schedule alternate paid time off. Mentors will make an effort to minimize holiday work for PhD students and if they require work on a holiday, shall provide PhD student(s) with no less than thirty (30) days written notice, whenever feasible.

University-designated Holidays:
- New Year's Day
- Dr. Martin Luther King, Jr.'s Birthday
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Friday after Thanksgiving Day
- Christmas Day
- A day before or after Christmas Day

Monday will be recognized as a holiday for all holidays occurring on a Sunday and Friday for all holidays occurring on a Saturday.

Any further paid leave should have the additional approval of the DEO/Director, which may be granted without financial support.

Sick Leave

PhD students may be absent due to illness without loss of pay not to exceed (18) days during a twelve month appointment.

If a PhD student has exhausted paid sick leave due to illness, they may request an unpaid leave of absence which will be granted at the sole discretion of the Program and mentor, and subject to any relevant policies of the Graduate College.

Family Illness Leave – PhD students may use available sick leave for care of and necessary attention to ill or injured members of the immediate family or for parental leave including birth and adoption.
**Bereavement Leave** – PhD students may use available sick leave for three (3) work days when a death occurs in the employee’s immediate family.

PhD programs may grant additional paid leave - Such leaves may be granted provided the Program and mentor determine that the PhD student is able to meet the time and effort obligations reflected in the percentage of appointment over the full term of the student’s appointment.

**Unpaid Leave of Absence**

A PhD student may be granted an unpaid leave of absence during the term of their appointment, upon request to and at the sole discretion of the Program and mentor.

The Program and mentor shall authorize leave requests in accordance with the provisions of the Family and Medical Leave Act of 1993 for qualifying individuals.