UCONN HEALTH

Immunology Graduate Program (IGP)

Policies and Procedures Manual

I. MISSION STATEMENT

The focus of the Immunology Graduate Program (hereafter referred to as IGP) is to educate and train students to become independent investigators and educators who will contribute to expanding knowledge in the areas of basic and/or applied immunology. This goal will be achieved by coursework, research seminars, laboratory experience, presentations, and review of the immunology literature. The program will develop the student's ability to conceive and solve experimental problems, critically evaluate data and communicate information. Graduates of the IGP at UConn Health acquire the skills to become productive members of a community of scientists, educators, and related professionals that increase our understanding of the basic principles of immunity as well as apply this knowledge towards the development of treatments and preventative strategies for human diseases.

II. ADMINISTRATIVE STRUCTURE

The IGP represents one of the areas of concentration (AoC) within UConn Health Biomedical Science (BMS) PhD program, and its policies are all consistent with those established by the University of Connecticut Graduate School and BMS program. The IGP is organized into three administrative levels:

IIA. IGP Program Director

The Director of the IGP serves as the coordinator of the administrative and the educational activities of the IGP, and as the representative of the IGP on the UConn Health Graduate Program Committee (GPC), an entity that considers and makes policies concerning all UConn Health graduate students. The Director is assisted by an Associate Director, who has the capacity to assume the role of Director in case of inability of the Director to perform her/his function. The Director(s) of the IGP shall serve for a period of three years. At the conclusion of the term, the Associate Director becomes the Director. At this time a new Associate Director is elected by a majority vote of the IGP faculty.

IIB. Student Affairs Committee (SAC)

The IGP Program Director may appoint a **SAC**, consisting of 4 faculty members and a student representative. One their roles is to consider curriculum and program policy changes, and then recommend these changes to the full IGP faculty membership for ratification by a majority vote. The SAC (minus the student representative) may also be asked by the IGP Program Director to serve as an advisory committee in relation to unexpected or sensitive matters that might arise.

IIC. Student Thesis Advisory Committees

Thesis Advisory Committees monitor the progress of students from their second year until completion. The committee is comprised of the student's major advisor as well as at least two other graduate faculty, one of whom must be an IGP member. All students are required to meet with their thesis advisory committee at least once per year to discuss the progress of their research as well as other matters arising. This meeting typically takes place immediately following their Research-in-Progress seminar, and if this is not possible due to scheduling conflicts, it should take place at the next earliest possible date.

III. FACULTY

The Immunology Graduate Program faculty participates in the Program in one or more of the following ways: (i) provides a laboratory for research work in the graduate thesis and/or laboratory rotation, (ii) teaches didactic coursework, (iii) provides guidance, assistance and/or advice in student seminars and advisory committees; (iv) participates in recruitment of new students; and (v) attends IGP faculty meetings. The IGP adheres to the guidelines and regulations of the UConn Health Graduate School and Biomedical Sciences (BMS) PhD Program. The Graduate School recertifies the graduate faculty every three years.

IIIA. Procedures for Admitting New Members into the Faculty of Immunology Graduate Program

IIIA1 The nominee must be a Graduate Faculty, and also hold the rank of Assistant Professor or higher.

IIIA2 Graduate Faculty holding a primary appointment in the Department of Immunology will be automatically admitted to the IGP.

For Graduate Faculty who do not have a primary appointment in the Department of Immunology:

IIIA3 The nominee shall be proposed by a member of the IGP.

IIIA4 The Program Director shall provide the members with the nominee's CV, bibliography, status of research grant support, and teaching experience.

IIIA5 The nominee is required to present a research seminar to the IGP faculty and students.

IIIA6 To be admitted as a Faculty member to the Program, the nominee must be approved by 2/3 of the entire faculty of the Immunology Graduate Program. The voting will be by secret ballot at a meeting of the IGP, or electronically.

IIIB. Expectations of IGP Faculty

IIB1 The major requirements for a faculty member to enter the program is that he or she provide a graduate student the best possible introduction to research and guide the student to the successful completion of a meaningful and significant thesis. In order to meet these requirements, an individual must have maturity, originality and independence as a scientist. To provide a long-term, suitable environment for a student to complete his or her thesis work, a major advisor should have a high caliber ongoing research program, and have reasonable assurance of being able to financially support a graduate student.

IIIB2 In addition to the above, it is highly desirable that the nominee has done or is prepared to do a significant degree of teaching in one or more of the immunology graduate courses and/or medical/dental curriculum.

Some of the objective criteria to which weight shall be given in judging whether a nominee meets the above-mentioned requirements are: (1) possess a sufficient number of publications in peer-reviewed journals in which the individual is senior author; (2) have research funding of his or her own (i.e., one in which the nominee is Principal Investigator or Program Director of a consortial grant). Research funding may be extramural or intramural.

IV. RECRUITMENT OF STUDENTS

The Immunology Graduate Program participates in the coordinated recruitment procedures of the UConn Health Graduate Programs Committee and BMS program. Applications are reviewed by the BMS Admissions Committee. The Program Director can recommend members of the IGP to the Dean of the Graduate School or the chair of the Admissions Committee. Participation in the recruitment process is highly encouraged for IGP members who are interested in training graduate students.

V. CURRICULUM

VA. General Guidelines

The IGP follows the requirements and guidelines of the UConn Health Graduate School. Ph.D. students in the IGP must take, in addition to all courses required by the Biomedical Science Program, Immunobiology (MEDS 5329) as well as Advanced Molecular and Cellular Immunology (MEDS 5335). Beyond these requirements, the curriculum below serves as a guideline that may be modified for each student. The course work presented for the Ph.D. degree, including the required research credits, should generally equate to 44-48 credits beyond the baccalaureate or its equivalent and 24 credits for students with prior M.S. degree.

First Year Course

- MEDS 6448 Foundations of Biomedical Science 2 semesters – 4 credits each
- MEDS 5329 Immunobiology 1 semester – 4 credits
- MEDS 6497 Journal Club 2 semesters – 2 credits
- MEDS 6496 Laboratory Rotation 2 semesters – 2 credits
- MEDS 5380 Cell Biology 1 semester – 4 credits
- MEDS 5469 Advanced Genetics & Mol. Biol. 1 semester – 3 credits
- MEDS 5310 Responsible Conduct in Research 1 semester – 1 credits

Second Year Course

- MEDS 6501 Communications for Biomedical Scientists 1 semester – 1 credit
- MEDS 6502 Experimental Design, Rigor and Biostatistics 1 semester – 1 credit
- MEDS 5335 Advanced Molecular and Cellular Immunology 1 semester – 4 credits
- MEDS 6447 Presentation of Scientific data 1 semester – 1 credits
- MEDS 6444 Medical Microbiology 1 semester – 3 credits
- MEDS 6497 Journal Club 2 semesters – 2 credits
- MEDS 6496 Laboratory Rotation 1 semester – 1 credit
- GRAD 6950 Doctoral Research 1 semester – 6 credit

Third Year Course

- GRAD 6950 Doctoral Research 2 semesters – 12 credits
- MEDS 497 Journal Club 0-2 credits

Fourth and Fifth Year Course

- GRAD 6950 Doctoral Research 2 semesters – 12 credits
- MEDS 6497 Journal Club 0-2 credits
- Write Thesis As arranged
- Defend Thesis As arranged

VB. Honor Code:

Academic Misconduct such as cheating, plagiarism, or the aiding or abetting of another individual in such acts will not be tolerated. The consequence of committing such actions will result in the failure in the course. Failure in a course necessitates recommendation by the advisory committee as to whether or not the student shall be permitted to continue graduate study.

VC. Typical Graduate Student Timetable

First Year	Second Year	Third Year	Fourth through Sixth Year
- 20 course credits - 3 laboratory rotations - Choice of major advisor	- Plan of study due after completion of rotations - 20 course credits - **General examination** (details in section VE) - deadline for passing is August 15th	- Dissertation Proposal due following the pass of general examination - Thesis research	- Thesis research - Thesis written - **Thesis oral examination**

First Year

3 Laboratory Rotations
Choice of major advisor and thesis laboratory
Approximately 20 credit hours of coursework taken
Review of Student

Second Year

Choice of dissertation/thesis committee
Plan of Study devised and approved and copy to IGP administrators
Approximately 20 credit hours of coursework taken
Research-in-Progress Seminars
Review of student
The General Examination must be passed by August 15th

Third Year

Dissertation Proposal submitted within one month after passing the General Examination (and approved) and copy to IGP administrators
Thesis work
Research-in-Progress Seminars
Review of student

Fourth and Fifth Year

Research-in-Progress Seminars
Review of student
Thesis work finished
Thesis written
Thesis read and approved
Oral Examination

VD. Research-in-Progress (RIP) Seminar

Once a year, a student will present a seminar describing his/her thesis research to the entire IGP committee (faculty, students, and post-docs). The student's advisory committee should attend the seminar and meet with the student immediately afterward to review progress and provide constructive feedback for setting future research goals. If this is not possible due to scheduling conflicts, the advisory meeting should take place at the next earliest possible date.

VE. General (Ph.D. Qualifying) Examination Procedures

The examination to be admitted to candidacy for the Ph.D. degree (General or Qualifying Examination) in Biomedical Science administered by the Immunology Graduate Program is the preparation of a grant proposal based on the student's thesis research. Students are ineligible to take the qualifying examination before the plan of study has been fully approved (form can be found at: *https://grad.uconn.edu/forms/*) or if they are not in good academic standing (grade point average below 3.0). The following procedures are used to administer the examination.

VE1. Examination Committee

The Graduate School requires five (5) graduate faculty members to serve on the examination committee. This includes the IGP Director (who will serve as the chair of the Examination Committee), the student's Thesis Advisory Committee (comprised of at least three members, including the major advisor), and may include one additional faculty member if needed to reach a total of five. As the Examination Committee chair, the IGP Director will moderate the examination, and will be responsible for ensuring that the exam process is administered in a fair and consistent manner that fulfils the requirements of the Graduate School, and the Biomedical Science Program. If the Program Director is not able to serve as the Examination Chair (e.g., if their own student is being examined), the Associate Director will perform this role, and if the Associate Director is unable another IGP faculty member will be appointed. All five committee members will read the written proposal and be present at the oral examination. An outcome of "pass" requires a unanimous vote by the Advisory Committee.

VE2. Written Proposal

The written proposal is generally based on the NIH F32 Individual Fellowship format (http://grants.nih.gov/grants/funding/424/SF424_RR_Guide_Fellowship_VerB.pdf). In addition to a Specific Aims page, the Research Strategy will be 6 pages single-spaced using 11-point Arial font and 1-inch margins. The Research Strategy should consist of separate sections for Significance (approximately 1 page, to provide background to the research topic as well as explaining why the questions being addressed are important to the field), Innovation (approximately half a page), and Approach (the remaining pages) that will contain both the preliminary data and experimental designs (corresponding to approximately three years' worth of work). The preliminary data can include one figure from the student's lab that was generated by another individual (but which should be appropriately attributed), while the remainder of the data must be generated by the student. The Experimental Designs will contain either 2 or 3 Specific Aims. These designs should not include detailed descriptions of standard procedures, but students should clearly articulate hypotheses, experimental strategies, potential results and interpretations. It is also important that sections for potential pitfalls and alternative approaches be included. While it is expected that the major advisor and student will have had extensive discussions regarding the student's thesis project prior to the student beginning the general examination, the major advisor should not directly assist the student in preparing the written proposal. The written proposal should be submitted to the examination committee at least two weeks before the oral defense date (refer to section VE.4). The criteria for a satisfactory written proposal are based on the overall quality and feasibility. Particular attention will be paid to the overall strategy, methodologies, and analyses to be used to accomplish the specific aims. It should be clear how the data will be collected, analyzed, and interpreted. Also, potential problems, alternative strategies, and benchmarks for success should be explained. The committee may request revision of the written proposal if substantial deficiencies are found, and only one revision will be allowed.

VE3. Oral Defense

The oral defense should occur two weeks following the submission of the written proposal, although the exact date can be adjusted to accommodate the schedules of the examination committee members. The student is responsible for scheduling the exam, including finding a room and a time for their exam. It is suggested that this be coordinated well in advance. If necessary, the Immunology administrators can assist with finding a room for the examination. The oral defense will begin with the student making a short PowerPoint presentation that includes a brief introduction providing sufficient background relevant to the proposal, the stated hypotheses, and the experimental design as related to completing the specific aims. Questions will be asked by the committee members during and after the presentation. Questions will address specific topics related to the proposal, as well as test the student's general knowledge of immunology and other relevant scientific areas. The major advisor must attend the exam and may participate in the preliminary discussions and post-exam evaluation. However, they must remain silent during the actual direct examination of the student, unless directly called upon by the chair of the Examination Committee to clarify a point of confusion or provide necessary context. Following the question and answer period, the Examination Committee will meet *in private* to discuss and then vote (refer to Section VE1) to determine whether the student passes,

fails, or should be required to remediate some component of their examination. If remediation is deemed appropriate, the committee will decide what form these remediations should take (e.g., re-writing all or a part of the proposal, a second oral examination, etc.). Two weeks will be allowed for revisions, and the committee will only consider one revision.

VE4. Timing of the General Examination

The initial oral exam must be completed no later than June 30th of the second year for PhD students or G1 year for dual degree students. The entire general exam process, including any necessary remediation, must be completed by August 15th. These deadlines must be complied with, and a missed deadline will count as an unsuccessful exam attempt and initiate the remediation process. Extensions are possible only under extraordinary circumstances and require the approval of the Associate Dean of the Graduate School or MD/PhD or DMD/PhD Program Director.

VE5. Implication of Failing the General Examination

Failure of the exam constitutes dismissal from the program with the possibility of receiving a terminal Master's degree for work completed.

VE6. Passing the General Examination

Students advance to Ph.D. candidacy after successful completion of the General Examination. Once the committee has notified a student that they have passed, the student should complete and submit the "Report on the General Examination for the Doctoral Degree" form to the registrar.

VF. The Dissertation

All forms related to preparing and submitting the dissertation can be found at:
https://grad.uconn.edu/forms/

VF1. Dissertation Proposal (Prospectus)

The dissertation proposal must be fully approved and submitted three months prior to the date of the oral dissertation defense (see "Dissertation Proposal for the Ph.D. Degree"). Nevertheless, students are highly encouraged to submit their dissertation proposals soon after passing the general examination. In particular, students performing research within the Department of Immunology must submit their dissertation proposal by June 1st of the 3rd year to be eligible for support by departmental funds in the 5th year (should the need arise). This policy applies to all graduate students with major advisors whose primary appointments are in the Department of Immunology.

VF2. Writing the Dissertation

The student, in consultation with the Major Advisor, writes the Dissertation. It should begin with

an Introduction that summarizes the history of the general area and the major outstanding questions, followed by a General Methods section. The following chapters will present and discuss the various experimental results, and in the final chapter the student will highlight the implications of their findings within the larger context of their field of study as well as explore potential future directions of study. The Dissertation submitted to the Thesis Advisory Committee should represent what the student considers to be a complete and final document. Since the thesis work should represent a significant scholarly contribution to the student's field of scientific research, it is expected that manuscripts detailing the thesis research will have been submitted to scientific journals before or soon after submission of the thesis.

VF3. The Private Defense

A Private Defense will be scheduled once the dissertation has been submitted to the Thesis Advisory Committee. Optionally, an outside reader (expert in the field) may be included on the committee. The outside reader need not be present at the defense. If not, they should forward questions to the major advisor to be posed to the student during the private defense. Committee members will examine all aspects of the thesis, including experimental data and interpretations, as well as the student's knowledge of the literature and broader issues related to the thesis topic. Committee members will then vote to accept, conditionally accept or reject the thesis. A final decision of "accept" requires unanimous approval (see "Doctor of Philosophy Dissertation Tentative Approval Page"). A "conditionally accept" outcome will lead to a re-vote following modifications to the thesis and/or a second private defense. There will be no time limit between the first and second private defense.

VF4. The Public (Oral) Defense

The student can schedule the Public Defense (Oral Defense or Thesis Seminar) no sooner than 2 weeks following their successful Private Defense (see "Announcement for the Ph.D. Dissertation Oral Defense"). Members of the Immunology Graduate Program, as well as the larger academic community will be encouraged to attend. The "Report on the Final Examination for the Doctoral Degree" must be signed by the thesis committee. There will be no further deliberations by the Thesis Advisory Committee, and the conclusion of the seminar will mark the beginning of the celebration!

VG. Policy for Using Generative AI in the Immunology Graduate Program

- **Use of AI in writing:** Students are required to author their own homework assignments, term papers, written portions of their General Examinations, Thesis/Dissertation and prospectus, and other related documents. In these settings, while it is permissible for students to use the Spelling & Grammar check function built into Microsoft Word to polish what they have written, it is not permissible for them to use AI tools (e.g., ChatGPT, etc.) to generate text as a substitute for their own writing. Such use is considered academic misconduct.
- **Permissible uses** of AI: In certain settings, it may be permissible to use AI tools for specific applications. Some examples might include, but are not limited to, AlphaFold for structural biology, or other tools that generate coding or working hypotheses for subsequent experimental validation. Permission for such uses must be given by a relevant

faculty member(s), such as a course director or examination committee in the case of the General Examination. Further, students must clearly and appropriately indicate all such AI uses (e.g., in a figure legend of a General Examination: "code used to plot data in Figure X was generated with assistance from ChatGPT").

VI. ANNUAL IGP FACULTY MEETING

The IGP faculty members will meet at least once each year, preferably at the end of academic year to discuss updates on the Program and other matters arising.

VII. IMMUNOLOGY SEMINAR SERIES

The Department of Immunology sponsors a seminar series that hosts outside speakers who are renowned experts in the field of immunology. Students are expected to attend these seminars on a regular basis to foster their intellectual development and strengthen their scientific knowledge base. In addition, the speakers eat lunch with a group of students and post-doctoral fellows, and each student is expected to participate in these lunches several times each year. Students will have the opportunity to invite and host a seminar speaker once each year.