

Department of Microbiology/Immunology

**Graduate
Handbook
2025**



STRITCH
SCHOOL of MEDICINE



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INTRODUCTION

PURPOSE OF THE HANDBOOK

This handbook contains information both necessary and helpful to graduate students, pertaining to academic requirements, departmental policies, and departmental facilities and activities. The information presented here supplements that found in the Graduate School Catalog. However, it is not intended to be definitive, since changes in the graduate program may occur, and interpretation of regulations may require decisions by the department faculty, the Chairperson, or the Graduate Program Director.

DEPARTMENTAL ADMINISTRATION

The Department of Microbiology and Immunology is part of the Stritch School of Medicine but also serves as part of the Graduate School. The chief administrative officer of the department is the Chairperson, Dr. Edward M. Campbell, who oversees all educational and research programs, financial matters, physical facilities, and personnel matters within the department. The Graduate Program Director is responsible for all aspects of the graduate program, except for financial matters. The Graduate Program Director, Dr. Yee Ling Wu, oversees the administration, mediation, and, where necessary, the interpretation of the regulations governing graduate degrees and departmental requirements. In circumstances where a programmatic decision is needed but for which the written guidelines are insufficient, the Chair will develop any needed additional administrative processes and/or guidelines.

The admissions committee administers all aspects of the admissions process, including correspondence and interviews. The members of the MIIM MS admissions committee are Dr. Edward Campbell (Chair), Dr. Alyson Hockenberry, and Dr. Abby Kroken. The IPBS admissions committee are Dr. Bryan Mounce (chair) and Dr. Makio Iwashima.

Graduate Program Coordinator Donna Buczek assists with matters relating to the Microbiology and Immunology graduate programs.

The Departmental office is located on the second floor of the Center for Translational Research and Education (CTRE), room 215.

OVERVIEW OF PROGRAMS OFFERED

PH.D. PROGRAM

The Ph.D. degrees are awarded upon demonstrating proof of mastery of knowledge gained in formal courses, from outside reading, and upon completion of a substantial research problem. Graduate students should manifest the abilities to work independently and to think critically, motivated by their own intellectual curiosity. A sense of thoroughness and accuracy, and knowledge of common research methods and tools are indispensable. Students must be able to independently analyze and evaluate scientific problems. As the student progresses, s/he takes on an increasing share of the responsibility for research until s/he has learned to initiate and successfully complete her/his own research.

Graduate Student core competencies

Required core competencies are:

- Has knowledge of basic concepts in molecular and cellular biology and biochemistry
- Has deep knowledge in virology, bacteriology or immunology, providing the basis for careers in these fields
- Be able to identify important unanswered questions and critically design and execute experiments to address these questions
- Critically evaluate scientific literature
- Communication Skills
 - Present orally and in writing in a concise and coherent manner
 - Present to the general public
 - Exchange ideas in a scientifically collaborative manner
- Mentor junior scientists

M.S. PROGRAM

We offer a 2-year, 30 credit-hour, full-time research-intensive program that leads to a Master's degree in Microbiology and Immunology. Students will be trained in the rigors of the scientific method by proposing and completing a research project under the direction of a selected faculty mentor.

M.S. Program goals:

Master's students will graduate with:

- Broad training in the biomedical sciences and specialized training in Microbiology and Immunology. This wide knowledge base will provide versatility in applying for subsequent jobs.
- Technical expertise in molecular biology and a variety of other areas, such as biochemistry, immunological techniques, enzyme assays, and cell culturing.
- Substantially enhanced skills in oral presentations.

As a result, they are equipped to succeed in more advanced research, teaching or administrative positions and will serve as leaders in their chosen professions. They are also prepared for additional educational objectives (leading to additional degrees in such areas as law, medicine or research).

DUAL-DEGREE PROGRAMS

Combined M.S. and M.D. or Ph.D. and M.D. programs are available for outstanding students who are already accepted into the Stritch School of Medicine's M.D. program. In addition to acceptance into the Medical School, the student must also be admitted to the Graduate School. The MD/PhD program requires a minimum of 7 years, including at least 3 years of full-time graduate work, plus summers and Medical School elective time. For a more detailed description, see page 36 of this handbook, as well as the Graduate School catalog.

Tuition remission may be available for graduate courses taken during the time in which the student is full-time in the Medical School.

NON-DEGREE PROGRAMS

Interested medical students or other individuals may pursue studies that do not lead to any degree. Such students are admitted as non-classified students. This category of student is usually comprised of Loyola University employees who wish to take courses. Non-classified students may enter the department after completing an application, and after submitting transcripts of undergraduate work, a letter of intent, and two letters of recommendation, including one from her/his supervisor. GRE scores are not required. GRE scores must be provided before a student may change her/his status to "classified." Only nine semester hours of credit taken as a non-classified student may be used as credit leading toward an M.S. or Ph.D. degree.

DOCTORAL DEGREE PROGRAM

REQUIRED COURSES

Courses required for the Ph.D. for students entering in the Fall of 2025

SEMESTER 1 (FALL)

BMSC 410 Biochemistry and Molecular Biochemistry (4 cr. hr)

BMSC 412 Cell Biology (4 cr. hr)

BMSC 416 Methods in Biomedical Science (1 cr. hr)

BMSC 405 Ethics for Researchers in the Biomedical Sciences (1 cr. hr)

BMSC 499 Research (2 cr. hr)

SEMESTER 2 (SPRING)*

BMSC 402 Statistics for Biomedical Science (3 cr. hr)

BMSC 418 Oral Presentation Skills (1 cr. hr)

Electives (see below)

SEMESTER 3*

Electives (see below)

Beyond SEMESTER 3*

MIIM 502 Special Topics (1 cr. hr.)

A total of two Special Topics Classes is required for the degree.

*Each semester, all classified students are required to take the following courses:

MIIM 501 Seminar

MIIM 503 Current Literature (journal club)

MIIM 492 Research

and/or

MIIM 600 Dissertation Supervision

Students will enroll in MIIM 492 Research each semester for an appropriate number of credits until the total number of credits is 48.

Students will enroll in Dissertation Supervision, MIIM 600, during any semester in which the number of credits is below 8, typically beginning in the third year of PhD studies.

Electives: Students must take 15 credits of electives beyond the core curriculum. MIIM offers the following electives:

MIIM 413 Basic Concepts Immunology (3 cr. hr.)
MIIM 411 Basic Molecular Microbiology (3 cr. hr)
MIIM 431 Molecular Biology of Animal Viruses (3 cr. hr)
MIIM 442 Cellular and Molecular Immunology (3 cr. hr)
MIIM 471 Molecular Microbial Genetics (3 cr. hr)

Students must take a total of 15 credits of electives; 12 of which should be from MIIM offerings, including at least two special topics classes. Students who wish to substitute offerings from other departments may petition the GPD.

The final schedule of graduate courses offered by all graduate departments is issued by the Associate Dean of the Graduate School approximately one month before the beginning of the semester. Selection of advanced courses must be made in consultation between the student and the GPD. Continuous enrollment is required (typically in MIIM 600) until the student has successfully written and defended her/his dissertation.

Should the student fail to maintain continuous enrollment she/he is considered “inactive” and reactivation is subject to approval (refer to LUC Grad School “Academic Policies,” https://www.luc.edu/gradschool/academics_policies.shtml)

LABORATORY ROTATIONS

Students will complete 3 laboratory rotations during their first year. By early August, each student will consult with the Director of Graduate Programs (Dr. Mitch Denning), the MIIM GPD and prospective mentors to select a lab for their first rotation. Throughout the Fall Semester, students should identify labs of interest for additional rotations. Opportunities to learn about active research projects abound. For example, at the Fall Retreat, faculty will present their work. Research work also is presented at Friday Dept. meetings and at students’ Research-in-Progress presentations. Students are encouraged to discuss possible rotation projects with faculty. Students should similarly consult with the Director of Graduate Programs, the MIIM GPD and prospective mentors to choose the other 2 rotations.

RESEARCH IN PROGRESS PRESENTATIONS

Each student will give one research-in-progress presentation per year, beginning in the third year. In this forum, two students from separate labs will present an aspect of their ongoing research at a departmental meeting. The presentations last a maximum of 25 minutes each and are given in the style that is appropriate for either the FASEB or ASM national meetings. A question period of 5-10 minutes will follow each presentation.

TIMELINE OVERVIEW

1. Complete laboratory rotations and choose a Ph.D. mentor by the end of the 1st semester.
2. Complete a presentation to a general (lay) audience by the end of the 2nd Year.
3. Complete the qualifying examination (a written grant proposal and oral defense) by the end of the 2nd year.
4. Complete required and additional courses by the end of the 3rd year.
5. Complete dissertation proposal (a written research proposal and oral defense) by January of the 3rd year.
6. Perform original research that forms the basis of the dissertation by the end of the program.
7. Participate in teaching, seminars, journal clubs throughout the program.
8. Present research-in-progress seminars annually, beginning in the 3rd year through the end of the program.
9. Complete a second presentation to a general (lay) audience by the end of the 4th Year.
10. Submit a manuscript to a referred journal by the end of the program, preferably sooner.
11. Write and defend dissertation at the end of the program.

GRADES

The Graduate School uses the following grade-conversion system: A = 4.0; A- = 3.67; B+= 3.33; B = 3.0; B- = 2.67; C+ = 2.33; C = 2.0; C- 1.67; D+ = 1.33; D = 1.0; F = 0.0; I = Incomplete; X = Absent from examination; W = Withdrawal; WF = Withdrawal with failure; CR = Credit; NC = No credit and AU = Audit

Computation of Academic Grade-Point Averages

The transcript reflects a student's actual academic record, and the cumulative GPA includes *all* grades earned during the pursuit of the degree. Students must maintain at least a 3.0 or higher cumulative GPA for all graduate-level and undergraduate-level courses required for the degree.

No more than two courses for which a student receives a final grade of C+ (2.33) or C (2.00), and no course for which a student receives a final grade of less than a C (2.00), will count toward completion of the degree or certificate requirements, although such grades will contribute to the student's cumulative GPA. A student may retake a course with the authorization of the Dean and graduate program director. Only the most recent grade earned for an authorized repeated course will count when evaluating whether or not all such degree or certificate requirements have been met. Both grades for the repeated course, however, will be used in the calculation of a student's overall cumulative GPA and will appear on the student's transcript, although the student will only receive credit for the course once.

Students are expected to complete course work by the end of the semester. If the professor agrees in advance, however, students may take a grade of "I" at the end of the semester. For each incomplete grade assigned, the student must complete and submit all outstanding work to the instructor by the last day of the semester following the term in which the grade was assigned. (For purposes of incomplete grades, the summer sessions are counted together as one term.) If the student does not turn in the work by the deadline, the "I" will automatically become an "F". The Graduate School will not approve a change of grade if the student does not complete and submit the work to the instructor within one term of the assignment of an "I" grade.

Students may withdraw from courses before midterm, with the approval of the instructor of the course. After midterm, the recommendation of the Chairperson and approval by the Dean of the Graduate School are required. No reexaminations are allowed for individual courses. Students will generally be notified of their grades for each departmental course no later than 2 weeks after handing in the final exam.

Academic policies and basis for dismissal

In keeping with Loyola's academic policies, (refer to LUC Grad School "[Academic Policies](https://www.luc.edu/gradschool/academics_policies.shtml)", https://www.luc.edu/gradschool/academics_policies.shtml) the student will be dismissed if s/he fails to meet the minimum grade requirements in course work or shows evidence of dishonesty in coursework or research (see Page 10.). Other conditions for dismissal include inability to establish a research problem, failure to successfully do research continuously during her/his tenure, failure to complete other requirements in a timely manner, failure to propose/write an outline on a dissertation topic/problem in a timely manner, and/or failure to receive unanimous approval of the dissertation proposal. If such situations arise, the GPD will confer with the Chair, who will appoint a committee to review the case. The committee will make a recommendation to the Chair, who will inform the student of the decision. Additional information about subsequent process is contained within Loyola's statement on academic policies:

https://www.luc.edu/gradschool/academics_policies.shtml

GRADUATE SCHOOL COURSE EVALUATIONS

Graduate course and teaching faculty evaluations will be done electronically through Sakai, and instructions will be provided to enrolled students by the Course Director/Graduate Program Coordinator. For the Core curriculum courses with multiple lecturers, the evaluation system will be open throughout the course and it is recommended that faculty are evaluated on a continuous basis throughout the semester. Course evaluations will open following the final exam. All course and faculty evaluations remain anonymous.

SEMINARS

All students are required to attend departmental seminars that are given by invited lecturers, faculty, and students in the department. Graduate students are also required to give one 30-minute seminar each year beginning their 3rd year. The Administrative Assistant will schedule the seminar in coordination with the faculty member in charge of departmental seminars. For guidelines for conducting a successful seminar, see **Appendix H**.

JOURNAL CLUBS

All graduate students are expected to attend and participate in one of the two weekly journal clubs: Microbiology or Virology and Immunology. The purpose of these informal gatherings is to report current literature so that students learn to give concise and critical reviews on recently published research. Notices of specific papers to be presented are emailed to attendees. Students will give one presentation each semester in the Journal Club of their choice and are expected to attend and contribute through participation (asking questions, making comments) in all sessions of the Journal Club of their choice.

GRADUATE ADVISORS

Until a student chooses a track and a permanent advisor, the Associate Dean for Graduate Education, currently Dr. Mitch Denning, acts as the advisor for each new graduate student.

Before students select an advisor, they participate in lab rotations, in which they work with various faculty members. Students may choose an advisor from a laboratory in which s/he has previously selected as a rotation or from a lab in which s/he has not. By the end of the 3rd rotation, students should submit their choice of advisor and their choice of program track to Dr. Denning. The mentor, track GPD, and track chairperson must sign the paperwork. Final approval is granted by the track chairperson. A student may change her/his advisor if necessary; however, such changes are not encouraged. The Graduate School at Loyola University Medical Center should be advised of the change. It is normal departmental policy for students to choose their advisor at the end of their 3rd rotation.

TIME LIMIT

If the time elapsed between the completion of the comprehensive examinations and the fulfillment of all degree requirements exceeds 5 years, the department reserves the right to require that comprehensive examinations are repeated.

ACADEMIC REQUIREMENTS

A minimum of three years of study and research beyond the B.S. are needed to complete a doctoral program. Academic requirements include, in addition to the courses listed on **pages 6-7** of this handbook, comprehensive written and oral qualifying exams, and the general requirements established by the Graduate School (see the Graduate School Catalog). A total of 48 semester hours of credit is required.

Transfer Credit

For students entering a PhD program with prior graduate work completed in another Loyola program or at another institution, up to one-half of the total number of semester hours required by the doctoral program at Loyola may be applied toward the PhD degree. It may be possible for a completed relevant Master's degree to be applied towards the PhD, and this is further elaborated in the Advanced Standing policy.

Students must apply for advanced standing during the first semester at Loyola. A departmental committee, not necessarily the student's dissertation committee, will recommend to the Chairperson which courses should be accepted. The Chairperson will submit a recommendation to the Dean of the Graduate School. The student should obtain the Advanced Standing Form from the Graduate School office.

Advanced Standing toward the Doctoral Degree

A student who has been awarded a relevant Master's degree by another institution may petition for advanced standing toward the coursework required for a doctoral degree program. A maximum of thirty credits of advanced standing may be awarded. Some doctoral programs may impose a lower limit or may not permit advanced standing at all. Requests for advanced standing should be made during the student's first year of enrollment in the Graduate School. Requests for advanced standing must be made to the Graduate Program Director (GPD) of the student's doctoral program, who will make a recommendation to the Graduate School for final review and approval. This recommendation will include both the number of advanced standing credits to be awarded and the number of credits of coursework that remain to be completed for the degree through registration in the Graduate School. Advanced standing does not alter a student's doctoral degree requirements outside of coursework (such as comprehensive exams) or confer candidacy. The number of approved credits of advanced

standing will be recorded on the student's transcript but will not contribute to the student's Grade Point Average (GPA). Students entering their doctoral program with Advanced Standing should refer to Graduate School policy on time limit for completion of degree requirements for students.

Work in Absentia

Upon approval of the advisor and the dissertation committee, work may be done in absentia at an institution where adequate facilities are available and communication with the student's advisor can be arranged. This has to have the approval of Dr. Emily Barman, Dean of the Graduate School, before it is finalized.

ACADEMIC PROBATION

Students may be placed on probation or dismissed from their graduate program if they fail to maintain a minimum GPA.

A student that fails to maintain a B grade average at the end of a semester, or who got a D or F in any course in that semester, will be placed on academic probation during the following semester. He/she will be required to raise the grade average to B within the next two semesters, and/or obtain a grade above B in the deficient courses.

A student who is admitted with probationary status is on probation in their first semester and will be required to earn a grade average at/above a B within their first two semesters.

ACADEMIC INTEGRITY

Academic honesty is an expression of an ethic of interpersonal justice, responsibility and care, applicable to Loyola University faculty, students, and staff, which demands that the pursuit of knowledge in the university community be carried out with sincerity and integrity.

The program reserves the right to dismiss students who commit scientific misconduct, including, but not limited to, plagiarism or willful misrepresentation of data. Additional information about Academic Integrity can be found within Loyola's statement of Academic Policies, http://www.luc.edu/gradschool/academics_policies.shtml.

REQUIRED ORIENTATION AND TRAINING

All students must attend mandatory orientation sessions at the start of graduate school. In addition, students must complete training sessions in Lab Safety, Animal Handling, and Library. Radiation Safety is done on an as-needed basis.

RESEARCH REQUIREMENT

Ph.D. candidates are expected to undertake independent, original experimental study resulting in a new and significant contribution to knowledge. The research will culminate in the preparation of a dissertation and a final oral examination conducted by the student's Ph.D. Dissertation Committee.

RESEARCH TOOL

All students must demonstrate proficiency in statistics. Courses to satisfy this requirement are given by the Health Science Division faculty.

TEACHING REQUIREMENT

Since the department considers teaching to be part of the graduate training program, all Ph.D. students will assist in the laboratory and Small Group Sessions involved in teaching Immunology, Microbiology & Virology to medical students. Any graduate student may be assigned to teaching duties, as part of her/his educational program. The department makes an effort not to give teaching assignments to students in the first and last years of their program.

PRESENTATIONS TO THE GENERAL PUBLIC

By the end of the second year of study, students will make a presentation to a general audience to foster public awareness of the significance of basic science research. During her/his third or fourth year, each student will present a second public presentation, typically based on their research findings. Dr. Bryan Mounce is the faculty advisor for these presentations.

ST. ALBERT'S DAY

Researchers at the Health Science Division gather together for a day to share their research findings on St. Albert's Day. It is expected that all students will attend and participate in these activities. St. Albert's Day will be held on Thursday, November 6, 2025.

REQUIRED DOCUMENTATION

Students are required to document the completion of each stage of their graduate program. Some of this documentation takes the form of hard copy paperwork, while other documentation will be carried out electronically via the Graduate Student Progress System, [GSPS](https://gsps.luc.edu/Secure/login.aspx).
<https://gsps.luc.edu/Secure/login.aspx>

If a hard copy is required, it should be submitted to the Graduate School AND a copy should be given to either the GPD or the Graduate Program Coordinator for the Microbiology/Immunology Program.

Additional paperwork will be required following successful completion of the degree requirements, including the completion of an updated contact form; this paperwork is not listed here but is described under “exit requirements.”

Events requiring documentation:

Course registration approval form—every semester (hard copy paperwork)

Choice of mentor and track—end of 1st semester (hard copy paperwork)

Comprehensive examination—end of 2nd year (GSPS)

Dissertation committee—end of 3rd year (GSPS)

Dissertation Proposal—end of 3rd year (GSPS)

Approval of Dissertation Proposal—end of 3rd year (GSPS)

Approval of the final oral and written Dissertation—end of program (GSPS)

Publications, public presentations of research, and awards— when these activities occur (GSPS)

Lay presentations—2nd year and 4th year (hard copy paperwork)

Other possible events requiring documentation:

Biographic data change (hard copy, paperwork)

MD/PhD transfer of credit (handled by the MD/PhD Administrator)

Leave of absence (GSPS) and consultation with GPD

Change of degree-seeking status (GSPS)

Conference travel reimbursement (hard copy paperwork, submit after travel with documentation)

Hard copy paperwork: Submit hard copy paperwork to the graduate school, with a copy to the GPD and/or the Graduate Program Coordinator, with one exception: the lay presentation paperwork does not have to be submitted to the office. This form can be found at the back of this handbook in Appendix T and should be e-mailed to Dr. Bryan Mounce and Dr. Yee Ling Wu and Cc'd to the Graduate Program Coordinator.

GSPS: Graduate Student Progress System (gsps.luc.edu). Students will be given training on accessing and using GSPS at New Student Orientation. Some submissions to GSPS will be initiated by the student, while others must be initiated by the GPD, as listed below. Students must inform the GPD by e-mail, with a copy to the mentor and/or committee chair, that a particular event requiring GPD-initiated submission has been completed.

Student-initiated:

Dissertation committee

Dissertation Proposal

Approval of Dissertation Proposal

Publications, public presentations of research, and awards

Leave of absence (as appropriate)

GPD-initiated:

Comprehensive examination (Qualifying examination) (Requires hard copy paperwork to initiate)

Approval of the final oral and written Dissertation (Requires hard copy paperwork to initiate)

Graduate school-initiated:

Doctoral Candidacy

Degree Requirements

Sakai:

Necessary forms and other useful information can be found on the MIIM Graduate Program Sakai site (sakai.luc.edu). Please notify the Graduate Program Coordinator if you have trouble with access.

QUALIFYING EXAMINATION

Students must successfully complete qualifying examinations (comprehensive examinations, also called preliminary examinations) in order to be classified as Ph.D. Candidates. For additional information, please reference the [Graduate School Handbook](https://ssom.luc.edu/graduate_school/studentresources/): https://ssom.luc.edu/graduate_school/studentresources/

In the Microbiology and Immunology program track, students are expected to successfully complete the examination by the end of the second year of study. As in other tracks, the format of the examination in the Microbiology and Immunology track is an oral defense of a written grant proposal.

The purpose of the qualifying examination is to assess:

1. The student's ability to design, analyze, and evaluate scientific problems critically and independently.
2. The student's command of the fundamental knowledge of microbiology, immunology, and virology and the relevant technology.

3. The student's communication skills, which are essential for scientific presentation, publication, grant proposal writing, and teaching.

The following prerequisites must be fulfilled in order to take the qualifying exam:

1. Classified status in the doctoral program.
2. Completion of all required didactic courses, as described on **Page 4**.
3. The recommendation of the advisor.

The recommended procedure for taking the qualifying exams are as follows:

1. The Department Chairperson appoints the Qualifying Examination Committee, which consists of three voting members and the student's advisor who shall be a non-voting member. The Department Chairperson designates one member of the committee to function as chairperson of the committee.
2. The student should confer with the chair of her/his qualifying examination committee regarding her/his selection of the topic/question for the exam. The topic for the proposal must be in an area other than that of the student's dissertation and other than that of the advisor's laboratory. (Any topic that would be included in the Literature Cited/Introduction sections of the dissertation is considered inappropriate as the topic of the qualifying examination proposal). The chair will guide the student away from topics that are unsuitable or too close to the research of the student or the lab. In cases of controversy, the chair has the final say in topic selection, and can choose to include or not, the advice of the mentor, but should be guided by the opinions of the rest of the committee. The topic should be approved by the committee chair in consultation with the committee prior to submission of the abstract/specific aims page.
3. The student, in consultation with her/his committee chair, will determine the topic and submit a one-page (no more than two pages double spaced) abstract of the proposal to the Qualifying Examination Committee for approval, prior to writing the entire proposal.
4. The abstract of the proposal should begin with a short introduction to the research problem and the rationale for the experimental approach. This should be followed by a list of the specific aims. Each aim can be briefly described in one to three sentences. The abstract must be as free of jargon as possible and intelligible and convincing without consulting references or background texts. It must be written such that any faculty in the department can understand it without any further reading.
5. The purpose of the abstract is to allow the committee to understand the question being posed and to see the experimental approach in broad outline. It should convey to the committee that the research problem is of the appropriate scope and that the proposed experiments can, in principle, adequately address the problem. The student should concentrate on ensuring that these issues are

clear in the abstract and leave the more detailed and technical discussion for the proposal.

6. The Qualifying Examination Committee will meet, typically one week after receiving the abstract, to determine the appropriateness of the proposed topic, and the acceptability of the proposal abstract. Students may be asked to modify or rewrite their proposal at this time until the selected topic and the abstract are approved unanimously by the committee.

Immediately following approval of the topic and abstract by the Qualifying Exam Committee, an oral defense date should be scheduled in order to avoid undue delay of the oral defense schedule.

1. Upon approval of the topic and the abstract, the student will write a grant proposal under the following guidelines. Twenty pages (double-spaced) are allowed for text (including figures but not including references). The NIH RO1 proposal format should be followed. Additional details and guidelines for writing a proposal can be found in **Appendix G** and at the HSD graduate school website under Student Resources. The student must write her/his proposal independently and submit it to the Qualifying Examination Committee no later than four weeks after the approval of the abstract. The four-week deadline for submission of the written document remains in effect even if the committee cannot be assembled in a timely manner.
2. Within one week after the student submits her/his proposal, the Qualifying Examination Committee may determine whether the oral defense should proceed as scheduled. This will be done by the Committee chairperson contacting each member of the Qualifying Examination Committee. If the proposal is not sufficient, the student will prepare a proposal modified according to the recommendation of the committee.
3. In the oral defense, the Qualifying Examination Committee evaluates the written proposal, the oral presentation, and how the student answers questions, and then determines whether the student is an acceptable candidate for the Ph.D. degree. Although most questions may focus on the proposal, students should expect questions that also test their fundamental knowledge of microbiology, immunology, and virology and the relevant biochemical techniques and molecular technology.
4. A passing decision will require at least two positive votes. In some cases, a decision may be deferred until the student has completed remedial writing or oral defense exercises requested by the committee. The chair of the Qualifying Exam Committee will collect the votes and inform the student of the final decision.
5. At the completion of the Qualifying exam, the student will be provided with a copy of the grading rubric by the chair of the Qualifying Examination Committee. A copy of the rubric form can be found in **Appendix P** and on the HSD graduate website under student resources. The rubric provided to the student represents a summary of the opinions of all committee members. The rubric

provides a short summary of the assets and deficiencies of the student, with the goal of alerting the student to those features in her/his development requiring additional attention.

6. A student may petition for the opportunity to retake the exam. Reexamination shall be allowed if a majority of the Qualifying Examination Committee so recommends and provided that the departmental chair and the Dean of the Graduate School concur.

Below is the ideal qualifying exam schedule.

- March 1 - Student submits names of possible committee members to Department Chair.
- March 5 - Departmental chair appoints the Qualifying Committee members
- March 15 – Student submits his/her choice of topic to the committee chair for approval
- May 1 – Abstract Aims Page for the grant proposal due
- May 7 - Prelim committee meets and approves or disapproves the abstract
- June 7 - A written grant proposal due
- June 15 - Oral defense of written proposal

For guidelines for writing an effective grant for the qualifying examination see **Appendix G** and the student resources webpage of the LUC-HSD graduate school.

DISSERTATION

Appointment of a Ph.D. Dissertation Committee and the first meeting

In January of the third year, the student will form a Ph.D. Dissertation Committee and submit the names and other necessary documentation to GSPS. This committee will consist of the student's advisor (PI), who is a member of the graduate faculty and at least four other members, one of whom must be from outside the department or institution. The outside member may hold a joint appointment in the department; however, a member outside of Loyola is strongly encouraged. The dissertation committee will be selected by the student's advisor in consultation with the student and will be subject to the approval of the Graduate Program Director, the Chairperson, and ultimately the Graduate School. Any subsequent changes in the dissertation committee are subject to the approval of the Chairperson. (A committee member other than the student's advisor will chair all committee meetings as Director with the exception of the final defense (see Policies and procedures of the dissertation committee).

Once the student has been formally notified of the appointment of her/his committee and has sent each member a copy of the dissertation proposal (see Dissertation Proposal, **Page 17**), the student must arrange a committee meeting (no later than July **of the third year**). The committee discusses and votes

to approve, either with or without modification, or to reject the proposed research. The Chairperson of the Ph.D. Dissertation Committee collects the votes of each committee member and provides a summary of the committee's recommendations to the student. The student then initiates electronic paperwork in GSPS to formally collect the approval of the committee on her/his dissertation proposal. To remain in good standing in the program, students must have unanimous committee approval of their dissertation proposal.

At intervals no longer than once per year (often shorter per committee recommendation), the Dissertation Committee will meet to review the student's academic performance (See Ph.D. Dissertation Committee meetings, below). These update meetings should be initiated by the student in consultation with her/his mentor but may be organized by the committee chair if s/he deems it appropriate. Prior to each of these meetings, the student will provide to her/his committee a written document with a description of the progress made on the goals of the student's research. There is no requirement to formally document the subsequent meetings in GSPS, although other documentation of the meetings may be made by the committee.

Dissertation Proposal

Ph.D. candidates must submit a dissertation proposal by the end of the third year. A copy of the proposal abstract must also be submitted to GSPS.

The proposal should consist of a review of the pertinent literature, specific aims, and proposed experiments to address those aims.

The format of the dissertation proposal should conform to that of [NIH F31 applications](#). More information can be found on the following website and below:

<https://www.nia.nih.gov/research/training/f31-individual-fellowships-phd-students>

F31 Fellowship Application Components

Component	Length Limit
Abstract*	30 lines of text
Project Narrative*	3 sentences
Applicant Biosketch*	5 pages
Applicant Background and Goals for Fellowship Training*	6 pages
Specific Aims	1 page
Research Strategy	6 pages
References	No page limit

*Not required for Dissertation Proposal document

The Research Strategy section should include subsections on Background and Significance,

Innovation and Approach (founded upon preliminary data where possible). Furthermore, the Approach section should include descriptions of anticipated results, potential pitfalls and alternative approaches.

Reviewers of F31 applications consider and score on the following criteria as well as provide a statement of overall impact: Significance, Investigator*, Innovation, Approach, and Environment*. (The asterisks indicate grant sections that are not required as part of the Dissertation Proposal.) These criteria are described on the following page:

<https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/write-your-application.htm>

While the Dissertation Committee will not score the proposal using the above criteria, keeping them in mind while writing the proposal will permit the student to develop a strong proposal.

Note: It is often difficult to predict where the research will lead, so the dissertation proposal is not meant to serve as a contract. Rather, it is anticipated that the specific aims will be modified over the course of the Ph.D. research. Thus, the proposal will merely serve as a starting point to establish direction for the research. However, if major changes in the dissertation proposal are made after it is approved, a new proposal must be submitted. To remain in good standing in the program, students must have unanimous committee approval of their dissertation proposal.

Ph.D. Dissertation Committee Meetings

No later than the end of July of the third year, all graduate students will hold at least one committee meeting, initially scheduled concurrent with submission of the Dissertation proposal. Following approval of the proposal, meetings should be held annually (or more frequently as decided by the committee). At least 1 week prior to each committee meeting, the student will submit a progress report to each committee member. This progress report will summarize (1) the original aims of the work, and, if appropriate, any modifications of the specific aims, (2) the overall progress towards achieving the aims or modified aims, (3) specific progress made since the last committee meeting, and (4) research goals for the next six months.

Because the committee meetings are an extension of the progress report, additional time required for student preparation beyond the progress report should be minimal. At the meetings, the student presents her/his research data obtained since the previous committee meeting and describes her/his plans for the upcoming 6 months. This format allows the committee to quickly identify problems or difficulties that may occur and to make recommendations.

Since the prime objective of the meeting is to assess the recent progress the student has made since the previous committee meeting, the length of the meeting is limited to approximately 1 hour. At the end of the meeting, the committee chair will determine and compile the consensus opinion. She/he

may complete the Progress Report Form (**See Appendix I**) for the meeting and distribute it to the advisor, student, the student's file, members of the committee, the Graduate Program Director, and the Chairperson. A copy may also be sent to the Graduate School Office for their files. Any report to the student will make clear which of the committee's recommendations are binding and which are offered as suggestions.

The role of the dissertation committee is not limited to the research aspects of the candidate's program. The committee may recommend a program or curriculum that it considers essential for the student to accomplish her/his degree. The committee submits this program of study to the Graduate Program Director, who will include the committee's recommendations in the student's file. The dissertation committee will meet at least once a year in order to ascertain whether the student is making adequate progress towards the degree.

Policies and Procedures of the Dissertation Committee

The composition of the Dissertation committee is determined by consultation between the student and her/his advisor, with input as appropriate from the Chairperson, Graduate Program Director, and the Associate Dean of the Graduate School at the Medical Center and is recommended to the Dean of the Graduate School of Loyola University. The Dean nominates the committee. Committees for the Ph.D. degree dissertation must consist of a minimum of five members, at least one of whom should be from a department other than LUC's Microbiology and Immunology Department. Inclusion of individuals from other institutions is encouraged. It is strongly recommended that the committee includes at least two faculty with primary appointments in the Microbiology and Immunology Department, three if that is not the case for the student's mentor. The dissertation advisor is the chairperson of the committee; however, a member of the committee, other than the advisor, serves as chairperson until the time of the oral defense.

Graduate School policy requires that all official members of a dissertation committee are present at the final oral defense. If non-Loyola members can reasonably foresee not being able to attend the final oral exam, they should be included on the committee as extra, non-voting members, over and above the number of voting members required for the particular committee. Although such a member would not have an official vote, it is presumed that the committee members will take her/his comments into account when preparing their vote. Thus, their input may be sought and acknowledged without their attendance at the defense.

The dissertation committee plays a dual role as both an advising and an examining body. Under the guidance of the Chairperson and the chair of the committee, the committee should facilitate the candidate's research and should help her/him to resolve experimental and conceptual difficulties. Accordingly, the student may receive guidance from her/his advisor, from individual members of the committee, and from the committee as a whole. Prior to their defense, students are expected to have submitted for publication at least one first-author publication.

Dissertation Defense

The candidate must be registered for the term in which s/he takes her/his final oral examination, the dissertation defense. The candidate must make available a written document of the dissertation to each member of the dissertation committee at least 4 weeks before the defense. No dissertation defense should be scheduled if any member of the committee is unable to attend, unless the Dean of the Graduate School approves the absence. The final revised document must be approved prior to degree conferral. The written document should include a thorough review of the pertinent literature and primary references.

One week prior to the defense (and at least 5 weeks prior to graduation), a public invitation must be made to the Dean of the Graduate School, the Associate Dean at the Medical Center, the Dean of the Medical School, the faculty, the dissertation committee, and all Basic Science Departments, that announces the presentation of the candidate's research and its defense.

For upcoming open defense announcements, the Graduate School office will send out electronic copies of **EITHER** the announcement with the title and abstract only **OR** the announcement as a pdf of the brochure complete with all sections (bio, pubs, committee members, etc.), depending on the student's preference. The graduating student must provide the Graduate School Office with a Word document if s/he chooses the full pdf announcement for them to distribute. A digital copy of the brochure must be provided to the Microbiology and Immunology Department.

The graduating student may generate a hard copy for other minor distributions and for use on the day of the defense. However, that distribution will not be done by the Graduate School Office or the Department Office.

Immediately after the public presentation and discussion, a closed-door oral examination will be conducted by the dissertation committee. Any departmental faculty members who desire to participate as non-voting members may also attend. Successful completion of the oral examination requires a favorable decision by the chair of the committee (the student's advisor) and at least three of the other four voting members. The chair of the committee should collect the votes and complete a rubric that represents the summary of the committee's opinion (see **Appendix Q**). The committee should then complete hard copy paperwork indicating its decision. The chair of the committee will report the results to the student and give her/him the signed paperwork. The signed paper should ultimately be given to the graduate program director, who will initiate the electronic paperwork in GSPS. The written dissertation itself must be deemed acceptable by the advisor and at least three of the four voting members of the dissertation committee. After completing any necessary revisions to the written document and receiving final approval from the committee, the student must turn in the final copies of the dissertation to the Graduate School Office in Bldg. 115, Rm 140.

Format and Submission Requirements

See the Graduate School "Manual for Thesis and Dissertations" available from the Graduate School Office. You may also go to https://ssom.luc.edu/graduate_school/studentresources/

All dissertations must receive format approval from the Graduate School prior to submission to ProQuest.

Dissertation Copies

The student will purchase and submit bound 1 bound copy of the dissertation to the mentor. Also, the student will submit a copy of her/his defense announcement to the department.

Recommended Timeline

1. The student should meet with the dissertation committee at its formation, prior to the end of July of her/his 3rd year. Subsequently, the committee should meet no less than once a year. Appropriate documentation of the meetings should be made by the Chair of the committee.
2. The committee is given one week to review the dissertation proposal. After it has been approved by the committee, the student should initiate electronic paperwork through GSPS. Via this venue, the committee will recommend acceptance of the dissertation proposal to the Dean of the Graduate School.
3. The committee will meet regularly with the student. It will ultimately give permission for the student to proceed to writing the final dissertation document. At this time, the student should schedule an oral defense date, keeping in mind that the committee requires four weeks to review the written document.
4. The committee is given four (4) weeks to review the Reader's Copy. The student should ask each individual committee member if a digital or hard copy is preferred and should supply the document to each committee member in her/his preferred format.
5. The committee will evaluate the written manuscript of the dissertation. This evaluation may take place either at a special meeting of the committee or on an individual basis. The committee may request revisions or changes prior to approving the dissertation document. Since the committee meets regularly with the student prior to this formal evaluation and since the progress of the research is discussed on these occasions, it is unlikely (but not impossible) that additional experiments will be requested during the dissertation evaluation.

6. Following successful completion of the written document and the oral defense, the committee chair will convey the decision of the committee to the student, who will present hard copy paperwork for the signatures of the committee. The student will then submit the signed paperwork to the GPD, who will initiate electronic paperwork in GSPS.
7. Only one reexamination of the Ph.D. dissertation defense may be scheduled. It must be approved by the Dean of the Graduate School, with input from the Associate Dean of the Graduate School at the Medical Center.

GRADUATION

Application for Graduation

In the semester **prior** to their expected graduation date, students apply for graduation. The student must be registered. Exact date deadlines can be obtained from the Graduate School Office at the Medical Center or from the departmental office. These dates are also included in the Registration Information Packet each semester.

Application Procedure: Students can apply to graduate online through the LOCUS system through 11:59 p.m. on the posted deadline dates (August 1st for December graduates, December 1st for May graduates and February 1st for August graduates).

Re-Applications: There is no fee for multiple graduation applications if the student is re-applying for the same degree. Students should re-apply in [Locus](#).

Students may attend the May Graduation Ceremony even if they have their degree conferred in August or in December of the previous year.

Exit Requirements

The graduating student must:

1. Provide proof to the GPD that arrangements have been made for the purchase of 1 bound copy of the dissertation for her/his mentor or that their mentor has waived this request
2. Complete and submit electronically a form with updated contact information to the Graduate Program Coordinator (and Cc the GPD).
3. Provide electronic copies of the defense announcement to the Graduate Program Coordinator (and Cc the GPD).

4. Exiting students are encouraged, but not required, to i) send a copy of their CV to the Graduate Program Coordinator (and Cc the GPD) and ii) set up a LinkedIn account and connect with MIIM faculty and students.

Once these requirements have been met, the GPD will confirm degree conferral eligibility with the Graduate School.

MASTER'S DEGREE PROGRAM

REQUIRED COURSES

SEMESTER 1 (Fall semester):

- BMSC410 Molecular Biochemistry (4 cr. hr.)
- BMSC 412 Cell Biology (4 cr. hr.)
- BMSC 416 Methods (1 cr. hr.)
- BMSC 405 Ethics for researchers in the Biomedical Sciences (1 cr. hr)
- MIIM 492 Research

SEMESTER 2 (SPRING semester)*:

- BMSC 418 Oral Presentation Skills (1 cr. hr.)
- BMSC 402 Statistics in Biomedical Sciences (3 cr. hr.) (Optional)
- MIIM 492 Research
- MIIM xx Electives (see below for options)

*Each semester, all MIIM MS students are required to take the following non-credit courses:

- MIIM 501 Seminar
- MIIM 503 Current Literature (journal club)
- and/or
- MIIM 595 Thesis Supervision

Students will enroll in Research, MIIM 492, each semester for an appropriate number of credits until the total number of credits (including didactic courses) reaches 30.

To achieve full-time status, students must either take a minimum of 8 credit hours or also enroll in Thesis Supervision. Students will enroll in MIIM 595, Thesis Supervision during any semester in which the number of credits is below 8, typically beginning in the second year of MS studies. Once students have completed 30 credits, they will enroll in MIIM 595 (Thesis Supervision).

Students will also enroll each semester in the department's seminar series (MIIM 501) and one of the three Journal Clubs (Microbiology, Immunology, or Virology) under MIIM 503, and participate in the department's weekly lab meeting (Friday).

Electives:

MS students must take two advanced (elective) MIIM classes either during semester 2 or during their second year.

MIIM 413	Basic Concepts Immunology (2 cr. hr.)
MIIM 411	Basic Molecular Microbiology (3 cr. hr.)
MIIM 431	Molecular Biology of Animal Viruses (3 cr. hr.)
MIIM 442	Cellular and Molecular Immunology (3 cr. hr.)
MIIM 471	Molecular Microbial Genetics (3 cr. hr.)

The final schedule of graduate courses offered by all graduate departments is issued by the Associate Dean of the Graduate School approximately 2 weeks before the beginning of the semester. Selection of advanced courses must be made in consultation between the student and the GPD. Continuous enrollment is required (typically in MIIM 595) until students have successfully written and defended their thesis.

Should the student fail to maintain continuous enrollment a fee will be assessed based on the thesis supervision fee for the terms missed plus an additional penalty of \$100.

The MS program in Microbiology and Immunology is a full-time, two-year research-intensive program; students will not be accepted on a part-time basis. To be considered full-time, students must be registered for a minimum of 8 credits or for Thesis Supervision (MIIM 595). As needed (for reasons of financial aid, for example), students may enroll in GSSM565 (Master's study) during the summer to fulfill enrollment requirements.

LABORATORY ROTATIONS

Students who enroll in the program will select a lab following at least two and up to three 6-week rotations during the first semester. The selection of labs for each rotation will occur in consultation with participating faculty mentors and the Graduate Program Director, Dr. Yee Ling Wu.

2025 Specific Dates:

1. August 18– September 26
2. September 29 – November 7
3. November 10– December 19

GRADES

The Graduate School uses the following grade-conversion system: A = 4.0; A- = 3.67; B+= 3.33; B = 3.0; B- = 2.67; C+ = 2.33; C = 2.0; C- = 1.67; D+ = 1.33; D = 1.0; F = 0.0; I = Incomplete;

X = Absent from examination; W = Withdrawal; WF = Withdrawal with failure; CR = Credit; NC = No credit and AU = Audit.

Computation of Academic Grade-Point Averages

The transcript reflects a student's actual academic record and the cumulative GPA includes all grades earned during the pursuit of the degree. Students must maintain at least a 3.0 or higher cumulative GPA for all graduate-level and undergraduate-level courses required for the degree.

No more than two courses for which a student receives a final grade of C+ (2.33) or C (2.00), and no course for which a student receives a final grade of less than a C (2.00), will count toward completion of the degree or certificate requirements, although such grades will contribute to the student's cumulative GPA. A student may retake a course with the authorization of the Dean and graduate program director. Only the most recent grade earned for an authorized repeated course will count when evaluating whether or not all such degree or certificate requirements have been met. Both grades for the repeated course, however, will be used in the calculation of a student's overall cumulative GPA and will appear on the student's transcript, although the student will only receive credit for the course once.

Students are expected to maintain an average of not less than a B (3.0). No more than two grades of C and no grades of D or F may be counted as fulfilling degree requirements. Such grades, however, will be used to calculate the student's GPA. No student will be allowed to graduate with less than a 3.0 grade point average.

Students are expected to complete course work by the end of the semester. If the professor agrees in advance, however, students may take a grade of "I" at the end of the semester. For incompletes assigned in Fall 2006 and later, the student must complete and submit all outstanding work to the instructor by the last day of the semester following the term in which the "I" grade was assigned. (For purposes of incomplete grades, the summer sessions are counted together as one term.) If the student does not turn in the work by the deadline, the "I" will automatically become an "F". The Graduate School will not approve a change of grade if the student does not complete and submit the work to the instructor within one term of the assignment of an "I" grade.

Students may withdraw from courses before midterm, with the approval of the instructor of the course. After midterm, the recommendation of the Chairperson and approval by the Dean of the Graduate School are required. No re-examinations are allowed for individual courses.

Students will be notified of their grades for each departmental course no later than 2 weeks after handing in the final exam.

Academic policies and basis for dismissal

In keeping with Loyola's academic policies, (refer to LUC Grad School "[Academic Policies](https://www.luc.edu/gradschool/academics_policies.shtml)", (https://www.luc.edu/gradschool/academics_policies.shtml)) the student will be dismissed if s/he fails to meet the minimum grade requirements in course work or shows evidence of dishonesty in coursework or research (see Page 10.). Other conditions for dismissal include inability to establish a research problem, failure to successfully do research continuously during her/his tenure, failure to complete other requirements in a timely manner, failure to propose/write an outline on a thesis topic/problem in a timely manner, and/or failure to receive unanimous approval of the thesis. If such situations arise, the GPD will confer with the Chair, who will appoint a committee to review the case. The committee will make a recommendation to the Chair, who will inform the student of the decision. Additional information about subsequent process is contained within Loyola's statement on academic policies:

https://www.luc.edu/gradschool/academics_policies.shtml

PROGRAM OVERVIEW

1. Complete 2-3 rotations in the 1st semester and choose a mentor.
2. Complete required courses.
3. Participate in Friday Meetings, seminars, and journal clubs.
4. Select a committee of 3 faculty members (one of whom is the mentor) by the end of the 1st year.
5. Complete thesis proposal (a written document) and oral defense of it by the end of the 1st year.
6. Perform original research that forms the basis of the thesis.
7. Write and defend thesis to the faculty committee. A public oral presentation of the thesis is strongly encouraged.

SEMINARS

All students are required to attend departmental seminars that are given by invited lecturers, faculty, and students in the department.

JOURNAL CLUBS

All graduate students are expected to attend and participate in 1 of the weekly journal clubs: Microbiology or Immunology and Virology. The purpose of these informal gatherings is to report current

literature so that students learn to give concise and critical reviews on recently published research.

Notices of specific papers to be presented are emailed to attendees. Students will give at least one presentation, typically in the Fall of their second year, and optionally a second presentation in the Spring of their second year, in the Journal Club of their choice.

GRADUATE ADVISOR

Until a permanent advisor is chosen by the student, the Graduate Program Director, currently Dr. Yee Ling Wu, acts as the advisor for each new graduate student. Students should complete at least 2 (and up to 3) 6-week rotations, chosen upon consultation with the prospective faculty mentor and the Graduate Program Director. They should select a lab prior to the beginning of the Spring semester (by Jan 1) and fill out/submit a MS Advisor Selection Form.

TIME LIMIT

M.S. students are expected to complete the program in two years. Any request for an extension to this time limit must be submitted to the student's thesis committee and approved by both the committee and the GPD.

ACADEMIC REQUIREMENTS

A minimum of 2 years of study and research beyond the B.S. are needed to complete a master's program. A total of 30 semester hours of credit is required.

Transfer of Credit

It is ordinarily expected that all work towards a master's degree will be completed in the program at Loyola University Chicago. However, up to six credit hours of graduate work completed in another Loyola program or at another institution may be applied toward a master's degree with permission of the program's Graduate Program Director (GPD) and the Graduate School. Students may request transfer of credit, and the program can make its recommendation to the Graduate School during the student's first semester in the Graduate School. The Graduate School maintains responsibility for approving transfer credit. To ensure that each student is well prepared for undertaking scholarship in the student's current field of study, the Graduate School's decision regarding transfer credit will be based on the quality of the student's work, the time interval since its completion and its relevance to the student's program of study at Loyola. Coursework below a B grade will not be accepted. Students may not transfer coursework that has been awarded as part of a conferred or completed degree program. If a course fulfills the learning outcomes of a requirement in the student's master's program, and upon department recommendation, a specific required course may be substituted with an elective chosen in concert with the student's program director.

Students must apply for advanced standing during the first semester at Loyola. A departmental committee, not necessarily the student's thesis committee, will recommend to the Chairperson which courses should be accepted. The Chairperson will submit a recommendation to the Dean of the Graduate School. The student should obtain the Advanced Standing Form from the Graduate School office.

ACADEMIC PROBATION

Students may be placed on probation or dismissed from their graduate program if they fail to maintain a minimum GPA.

A student that fails to maintain a B grade average at the end of a semester, or who got a D or F in any course in that semester, will be placed on academic probation during the following semester. He/she will be required to raise the grade average to B within the next two semesters, and/or obtain a grade above B in the deficient courses.

A student who is admitted with probationary status is on probation in their first semester and will be required to earn a grade average at/above a B within their first two semesters.

ACADEMIC INTEGRITY

Academic honesty is an expression of an ethic of interpersonal justice, responsibility and care, applicable to Loyola University faculty, students, and staff, which demands that the pursuit of knowledge in the university community be carried out with sincerity and integrity.

The program reserves the right to dismiss students who commit scientific misconduct, including, but not limited to, plagiarism or willful misrepresentation of data. Additional information about Academic Integrity can be found within Loyola's statement of Academic Policies:

http://www.luc.edu/gradschool/academics_policies.shtml

RESEARCH REQUIREMENT

M.S. candidates are expected to undertake independent, original experimental study resulting in a new and significant contribution to knowledge. The research will culminate in the preparation of a thesis and a final oral examination conducted by the student's M.S. Thesis Committee.

REQUIRED ORIENTATION AND TRAINING

All students must attend mandatory orientation sessions at the start of graduate school. In addition, students must complete training sessions in Lab Safety, Animal Handling, and Library. Radiation Safety is done on an as-needed basis.

ST. ALBERT'S DAY

Researchers within the Health Sciences Division gather together to share their research findings on St. Albert's Day. It is expected that all students will attend and participate in these activities. St. Albert's Day will be held on Thursday, November 6, 2025.

REQUIRED DOCUMENTATION

Students are required to document the completion of each stage of their graduate program. Some of this documentation takes the form of hard copy paperwork, while other documentation will be carried out electronically via the Graduate Student Progress System, GSPS (gsp.s.luc.edu).

If a hard copy is required, it should be submitted to the Graduate School AND a copy should be given to either the GPD or the Graduate Program Coordinator for the Microbiology and Immunology Program. Additional paperwork will be required following successful completion of the degree requirements, including the completion of an updated contact form; this paperwork is not listed here but is described under "exit requirements."

Events requiring documentation:

Course registration approval form—every semester (hard copy paperwork)

Thesis committee—end of 1st year (GSPS)

Thesis Proposal—end of 1st year (GSPS)

Approval of Thesis proposal – end of 1st year (GSPS)

Approval of final oral and written Thesis—end of program (both hard copy paperwork and GSPS)

Publications, public presentations of research, and awards---when these activities occur (GSPS)

Other possible events requiring documentation:

Biographic data change (hard copy, paperwork)

Leave of absence (GSPS)

Change of degree-seeking status (GSPS)

Hard copy paperwork: Submit hard copy paperwork to the graduate school, with a copy to the GPD and/or the Graduate Program Coordinator. All other hard copy forms can be found at the LUC-HSD Website (http://www.stitch.luc.edu/graduate_school/student-resources)

GSPS: Graduate Student Progress System (gsp.s.luc.edu). Students will be given training on accessing

and using GSPS at New Student Orientation. Some submissions to GSPS will be initiated by the student, while others must be initiated by the GPD, as listed below. Students must inform the GPD by email, with a copy to the mentor and/or committee chair, that a particular event requiring GPD-initiated submission has been completed.

Student-initiated:

Thesis committee

Thesis Proposal

Approval of Thesis proposal

Publications, public presentations of research, and awards Leave of absence (as appropriate)

GPD-initiated:

Approval of final oral and written Thesis (requires hard copy paperwork to initiate)

Graduate school-initiated:

Degree Requirements

Sakai:

Necessary forms and other useful information can be found on the MIIM Graduate Program [Sakai](http://sakai.luc.edu) site (sakai.luc.edu). Please notify the Graduate Program Coordinator if you have trouble with access.

THESIS**Thesis Committee**

By the end of the first academic year, the student, with the guidance of her/his mentor, should select a Thesis Committee consisting of the mentor and 2 other faculty, which will advise the student and evaluate her/his research progress, thesis proposal, and thesis document for the M.S. degree program. The committee should include at least 2 faculty members from the Department of Microbiology/Immunology. Of the 2 Microbiology/Immunology faculty members, at least 1 of them should have a Primary Appointment with Microbiology/Immunology. A committee member other than the student's advisor will chair all committee meetings with the exception of the final defense (see Policies and procedures of the dissertation committee). The student should initiate electronic paperwork in GSPS upon formation of the committee and following verbal approval of the thesis proposal. Unanimous approval of the thesis proposal by the committee is required for the student to progress to receiving the master's degree. This approval should occur no later than July 31st (by the end of the first year of graduate studies). Following approval of the proposal, the committee will meet regularly with the student. It will ultimately give permission for the student to proceed to writing the final thesis document. At this time, the student should schedule an oral defense date, keeping in mind that the

committee requires two weeks to review the written document.

THESIS PROPOSAL

The thesis proposal is a document that describes the student's research project and future directions. It should be between 2 and 4 pages and contain the following sections:

1. A brief **specific aims section** that includes significance of the work, rationale for the proposed studies and several (generally between 2 and 5) specific aims that the student proposes to address.
2. **An introduction section** that briefly reviews the pertinent literature. This introduction should end with a statement of the hypothesis or problem that will be addressed in the thesis research.
3. **A preliminary data section** that describes the results to date. If appropriate, this section can be combined with the Aims and approaches section.
4. **An aims and approaches section** that describes in more detail the specific aims, the rationale for why the problem is important and what will be learned, the experimental approach/methodology to answer the question, the predicted results, and the caveats and alternative approaches. The specific details of the methodology are less important than the reasoning behind them, and thus the document should be written accordingly with emphasis on the rationale.
5. **Bibliography**
6. **A timeline** for completion of the work

The document should be approximately 2 to 4 pages, double-spaced, in length and written in a font no smaller than 12, generally Arial or Times New Roman. Figures (models and/or data) may be included as appropriate on an extra two pages, maximum.

Before granting approval of the thesis proposal, the thesis committee must be satisfied that:

1. The proposed work is original.
2. The work, if completed as planned, would be of a quality appropriate for publication.
3. The student has a clear understanding of the nature of the work together with its implications, assumptions, pitfalls, and significance.
4. The student has an adequate background and sufficiently broad familiarity with relevant literature to ensure that the work is conducted in a knowledgeable and scholarly manner.

The Thesis Proposal should be submitted to each member of the thesis committee and evaluated by them by the end of the first year (by the end of July). It is the responsibility of the student to initiate electronic paperwork in GSPS following approval by the committee of the Thesis proposal.

Thesis Research

Once the thesis committee has been appointed and has approved the thesis proposal, the committee will meet with the student at intervals to evaluate the candidate's research and advise the student on the scope and direction of his or her future research effort.

MASTER'S THESIS

After completion of the thesis research, a thesis document must be written. The Reader's Copy is a complete draft of the thesis document with all required components (see SSOM Graduate School format requirements). Readers' Copies must be submitted to the committee at least two weeks prior to the Oral Defense. Final revision of the Readers' Copies may be carried out following the Thesis Defense. Final copies of the Thesis must be submitted prior to the deadline set by the Graduate School for each graduation date.

The thesis must contain the following sections:

1. A **brief, general introduction** that describes the problem that was addressed and the significance of the work.
2. A **Literature review** that discusses the pertinent literature. This introduction should describe the relevant literature in much greater detail than the Thesis Proposal. Like the proposal, the introduction should end with a statement of the hypothesis or problem that will be addressed in the thesis research. Appropriate primary references should be cited.
3. **Research studies**, including a brief introduction, materials and methods, results (including tables and/or figures) and discussion of the results. If appropriate, the materials and methods section may be separated from the other parts of the research studies and included as a stand-alone chapter.
4. A **General Discussion** that describes the implications of the work and important future directions of the project.
5. A complete **Bibliography/Literature Cited** section that refers to work cited in other locations in the document. This section should use a standard scientific citation format suitable for publication in the field under investigation. The literature cited should largely consist of the primary literature, rather than reviews.

Thesis Reader's Copies

As the student is completing his/her thesis research, s/he should hold a committee meeting to request permission to write the thesis document. The Reader's Copy is a complete draft of the thesis document with all required components (see Graduate School format requirements). Reader's Copies must be submitted to the committee at least two weeks prior to the Oral Defense. The student should ask each individual committee member if a digital or hard copy is preferred and should supply the document to each committee member in her/his preferred format. Final revision of the Reader's Copies may be carried out following the Defense. A final copy of the revised, approved Thesis must be submitted to the Graduate School prior to the deadline set for each graduation date.

Thesis Oral Defense

- a. The student must have the approval of the Thesis Committee to proceed to the Oral Defense.
- b. At the start of the Oral Defense, the M.S. candidate makes an oral presentation of the research within her/his thesis. This is followed by an oral examination by the thesis committee members.
- c. Students are encouraged to give a final oral presentation of their thesis work to the department (and open to the public), although this open defense format is not required. If the student presents to the public, then a separate oral defense must be scheduled to follow immediately after the seminar.
- d. At least one week prior to the thesis defense (open or closed), students must submit to the Graduate Program Coordinator an electronic brochure announcement containing her/his name, thesis title, abstract, date of the defense, and names of the thesis committee members. It may also include a biosketch and publication list. If a public presentation will be given, then this brochure should also be submitted to the Graduate School. The Graduate School will provide a template for the electronic brochure and will issue the public announcement.
- e. The student must complete required revisions to the thesis document within a specific time frame following the defense (typically 1-2 weeks).

Format and Submission Requirements

See the Graduate School "Manual for Theses and Dissertations" available from the SSOM Graduate School Office. Students may also go to <http://www.luc.edu/biomed> for help using Word to type her/his Thesis. Click on student resources, then scroll down to "Dissertation/Thesis Information."

The thesis must receive format approval from the SSOM Graduate School Office prior to submission to ProQuest.

Thesis Copies

The student will purchase and submit a bound copy of the thesis for the mentor.

GRADUATION

Application for Graduation

Early in the semester prior to their expected graduation date, students apply for graduation. The student must be registered. Exact date deadlines can be obtained from the Graduate School Office at the Medical Center or from the departmental office. These dates are also included in the Registration Information Packet each semester.

Application Procedure: Students can apply to graduate online through the LOCUS system through 11:59 p.m. on the posted deadline dates (August 1st for December graduates, December 1st for May graduates and February 1st for August graduates).

Students may attend the May Graduation Ceremony even if they have their degree conferred in August or in December of the previous year.

For more information on these procedures, go to:

1. <http://www.luc.edu/biomed>
2. Student Resources
3. Dissertation/Thesis Information

Exit Requirements

Following successful defense of the thesis and prior to degree conferral, students must:

1. Provide proof to the GPD that arrangements have been made for the purchase of 1 bound copy of the dissertation for the mentor.
2. Complete and submit a form with updated contact information electronically to the Graduate Program Coordinator (and Cc the GPD).
3. Provide electronic copies of the defense announcement to the Graduate Program Coordinator (and Cc the GPD).
4. Students are encouraged, but not required, to set up a LinkedIn account and connect with MIIM faculty and students. Once these requirements have been met, the GPD will confirm degree conferral eligibility with the Graduate School.

MD/PhD Program

INTRODUCTION

The MD/PhD students select a graduate program to determine their course requirements in consultation with their mentors and the program GPD.

REQUIREMENTS

M.D./Ph.D. students should adhere to ALL guidelines established in the Ph.D. portions of this handbook, including teaching and oral presentations, except as noted specifically in this section.

Courses required for the MD/PhD for students entering graduate school in 2025:

Choice of electives from the following list (6 cr. hr. total):

MIIM 431 Molecular Biology of Animal Viruses (3 cr. hr) (Offered in Fall)

MIIM 442 Cellular and Molecular Immunology (3 cr. hr) (Offered in Fall)

MIIM 411 Basic Molecular Microbiology (3 cr. hr) (Offered in Spring)

MIIM 471 Molecular Microbial Genetics (3 cr. hr) (Offered in Fall)

MIIM 413 Basic Concepts Immunology (3 cr. hr) (Offered in Spring)

SEMESTER 1 (Fall)

BMSC 416 Methods in Biomedical Science (1 cr. hr)

BMSC 405 Ethics for Researchers in the Biomedical Sciences (1 cr. hr)

Advanced electives (see above for list) (6 cr. hr. total)

SEMESTER 2 (Spring)

Advanced electives (see above for list) (6 cr. hr. total)

BMSC 402 Biostatistics (3 cr. hr)

BMSC 418 Oral presentation skills (1 cr. hr)

MIIM 502 Special Topics (1 cr. hr) (Offered in Spring)

(A total of two Special Topics Classes is required for the degree.)

In addition, all classified students are required to take, each semester, the following non-credit courses:

MIIM 501 Seminar

MIIM 503 Current Literature (Journal Club)

Students also enroll in Research MIIM 492 to complete the 48 credit hours. Following successful completion of 48 credits and the qualifying examinations, PhD students register for Dissertation supervision, MIIM 600 (0 credits).

The Qualifying Examination should be taken in the summer following completion of the first year of graduate education.

CREDIT HOURS

A total of 48 credit hours are required for completion of the degree program. 24 credits may be transferred from Medical School Courses. The credit earned in appropriate medical school courses will count toward the 48 credit hours. The student should work with the MD/PhD coordinator to initiate the paperwork necessary for the transfer of credit to the graduate program.

TIME-FRAME OF THE MD/PHD PROGRAM

Students enter their first year of PhD training (Year 3, G1) on May 1 and transfer back to medical school (Year 7, M3) on May 1 after completion of their PhD. A more detailed timeline can be found at the MD/PhD website: <https://www.luc.edu/stritch/mdphd/currentstudents/timeline/>

The MD/PhD program provides 20 months of stipend support during the PhD training after which students are supported by their advisor or external funding awarded to the student.

TEACHING REQUIREMENT

Since the department considers teaching to be part of the graduate training program, all M.D /Ph.D. students will assist in the laboratory and Small Group Sessions involved in teaching Immunology, Microbiology & Virology to medical students. Any graduate student may be assigned to teaching duties, as part of her/his educational program. The department makes an effort not to give teaching assignments to students in the first and last years of their program.

ACADEMIC PROBATION

Students may be placed on probation or dismissed from their graduate program if they fail to maintain a minimum GPA.

A student that fails to maintain a B grade average at the end of a semester, or who got a D or F in any course in that semester, will be placed on academic probation during the following semester. He/she will

be required to raise the grade average to B within the next two semesters, and/or obtain a grade above B in the deficient courses.

A student who is admitted with probationary status is on probation in their first semester and will be required to earn a grade average at/above a B within their first two semesters.

ACADEMIC INTEGRITY

Academic honesty is an expression of an ethic of interpersonal justice, responsibility and care, applicable to Loyola University faculty, students, and staff, which demands that the pursuit of knowledge in the university community be carried out with sincerity and integrity.

The program reserves the right to dismiss students who commit scientific misconduct, including, but not limited to, plagiarism or willful misrepresentation of data. Additional information about Academic Integrity can be found within Loyola's statement of Academic Policies, http://www.luc.edu/gradschool/academics_policies.shtml.

REQUIRED ORIENTATION AND TRAINING

All students must attend mandatory orientation sessions at the start of graduate school. In addition, students must complete training sessions in Lab Safety, Animal Handling, and Library. Radiation Safety is done on an as-needed basis.

GRADUATION

Application for Graduation

Early in the semester prior to their expected graduation date, students apply for graduation. The student must be registered. Exact date deadlines can be obtained from the Graduate School Office at the Medical Center or from the departmental office. These dates are also included in the Registration Information Packet each semester.

Application Procedure: Students can apply to graduate online through the LOCUS system through 11:59 p.m. on the posted deadline dates (August 1st for December graduates, December 1st for May and August graduates). LOCUS <https://locus.luc.edu/psp/cs92prd/?cmd=login>

Students may attend the May Graduation Ceremony even if they have their degree conferred in August or in December of the previous year.

For more information on these procedures, go to:

1. <http://www.luc.edu/biomed>
2. Student Resources
3. Dissertation/Thesis Information

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Following successful defense of the thesis and prior to degree conferral, students must:

1. Provide proof to the GPD that arrangements have been made for the purchase of 1 bound copy of the dissertation for the mentor.
2. Complete and submit a form with updated contact information electronically to the Graduate Program Coordinator (and Cc the GPD).
3. Provide electronic copies of the defense announcement to the Graduate Program Coordinator (and Cc the GPD).
4. Exiting students are encouraged, but not required, to set up a LinkedIn account and connect with MIIM faculty and students.

Once these requirements have been met, the GPD will confirm degree conferral eligibility with the Graduate School.

FINANCIAL MATTERS

GRADUATE STIPENDS

Graduate stipends are awarded on a merit basis to Ph.D. students only. The faculty advises the Chairperson in the selection of the students to receive stipends. Students may be awarded tuition scholarships independently of stipends and/or in conjunction with them. Graduate School support is, in principle, limited to the first 21 months. However, stipends for the remaining years of study are paid from the advisor's research grant funds. Students are paid on the 15th of each month (or the final weekday before the 15th, if it falls on a weekend). Students may obtain loan information from the Financial Aid Office - Lake Shore Campus.

EMPLOYMENT

PhD Students: Full-time graduate students receiving financial support from the Graduate School, the department, or a faculty member's research grant may **not** hold outside employment. If extenuating circumstances arise which would make it impossible for a student to honor this policy, the student may appeal. Appeals must be approved by (1) the student's advisor, (2) the Chairperson, and if Graduate School monies are involved, (3) the Dean of the Graduate School.

M.S. Students: The M.S. program in Microbiology and Immunology is a full-time, two-year research-intensive program; students will not be accepted on a part-time basis. The M.S. program is designed so that students will complete course work and engage in research within the context of a meaningful student-mentor relationship. To maximize the probability of success in the program, any type of employment is highly discouraged and cannot be undertaken without prior approval by the Graduate Oversight Committee.

TUITION, FEES AND HEALTH INSURANCE

PhD graduate students normally receive full tuition scholarship; however, they must pay fees. Tuition remission is given in blocks of 24 semester hours per academic year. The bulk of the 48 credits required for the Ph.D. is completed in the first 2 years. However, students generally enroll in Special Topics courses in their 2nd and 3rd years. Students should consult with the GPD to allocate credits so that the appropriate number (typically 1 or 2) remain available for that purpose. Graduate students who receive a stipend AND are enrolled in course work consisting of at least 1 credit hour or 0 credits of Dissertation Supervision are considered full-time students.

Student Health Services

Student Health Service is mandatory for all students at the medical center and included as part of the Student Development fee.

Major Medical Insurance Coverage

Health Insurance: The University provides health insurance and preventive dental coverage for all eligible Ph.D. students. To view the plan, students may go to uhcsr.com/luc

Required Fees

M.S. graduate students assume responsibility for tuition, health insurance and fees. For the 2025-2026 academic year, the tuition is \$1,345.00 per credit hour. Current Tuition and Fees can be found at following link: <https://www.luc.edu/bursar/tuitionfees/>

Major Medical Insurance Coverage: The University requires all students to have health insurance coverage. Health insurance from Academic Health Plan is made available for students by the University for a fee of \$3,684.00 per year. Students may elect to obtain their health/hospitalization coverage from other sources.

To view the plan, students may go to: uhcsr.com/luc

However, all full-time students (including undergraduate, graduate and professional) will automatically be enrolled in the Academic Health Plan. It is your responsibility to apply for a waiver by providing proof of other adequate health insurance. This must be done by going to LOCUS and fill out the “Waive Out” section **before October 1, 2025**.

How to Waive Out of Health Insurance

1. Log into LOCUS and select “Campus Finances,” then “Student Health Insurance.”
2. Select the “Waive out” button and submit your insurance information.
3. The insurance fee will be credited to your student account within 48 hours. Please check the "Account Summary by Term" screen under "Campus Finances" in LOCUS to see this credit.

Those students failing to meet the deadline will be automatically billed by the Bursar’s office for the university negotiated 2025-26 annual policy at a cost of \$3,684.00. **This deadline is firm – there will be no exceptions. Any waiver received after the deadline will not be accepted. The insurance and its related premium will be mandatory and remain in force if the deadline is missed.**

Required Fees 2025-2026

Tuition for each semester hour (courses in the 400-500 series) \$1,345.00	
Matriculation fee; Mandatory, payable one-time, first-semester of graduate school \$100	
Thesis Supervision (no credit; used when a student is primarily involved in preparing her/his thesis; payable per semester) \$750	
Dissertation Supervision (no credit; used when student is primarily involved in preparing her/his dissertation; payable per semester) \$1,935.00	
Student Development Fee based on number of credit hours enrolled each semester	\$194 registered for 9 or more credit hours \$ 97 registered for 4-8 credit hours \$ 48 registered for 1 to 3 credit hours
Technology Fee based on number of enrolled credit hours each semester	\$130 registered for 9 or more credit hours \$ 68 for 4 to 8 credit hours \$ 30 for 1 to 3 credit hours
\$188/semester Fitness Center Membership Fee when registered for 8 credit hours or more	
<p>Late Registration fee \$50 Late payment fee 1.5% monthly</p> <p>No charge for change of registration for a dropped/added course if completed before the end of the registration period. After the registration period, a late registration fee of \$50 will be assessed by the Bursar's Office.</p>	

TRAVEL ASSISTANCE TO PROFESSIONAL MEETINGS

Ph.D. students are eligible to apply to the Graduate School for travel awards of \$300 for a maximum of two (2) trips during a graduate student's time in the program. To qualify for this funding, students must provide the following information: (1) name, place, and date of the meeting, (2) title of the paper to be presented, and (3) written evidence of acceptance. The Chairperson must sign the request before it is forwarded to Margarita Quesada of the Graduate School.

SCHMITT FELLOWSHIP

PhD students approaching their final year in the program are eligible to apply for the Schmitt Fellowship. Information on the fellowship is available through the GPD and applications are due in early January.

INCENTIVES

The Graduate School at the Health Sciences Division offers a \$250 incentive to graduate students who submit a predoctoral fellowship application for extramural peer-reviewed funding. Incentives will be processed automatically following submission through the Office of Research Services, HSD. Please contact the Graduate School Office for more information at 464-220-9526..

EXTRA-ACADEMIC AND PERSONAL MATTERS

STUDENT REPRESENTATION

The department has one student representative to the Graduate School Council (GSC). This representative is charged with reporting all relevant information to the other students. The representative is elected on a yearly basis, must be in at least the second year of graduate study, and must be a student in good standing. This representative is charged with coordinating student meetings and nonacademic functions. Information on the 2025-2026 representative/s is not currently available.

GRIEVANCE PROCEDURE

The department follows Loyola's procedure for Grievance as outlined on the following website: http://www.luc.edu/gradschool/academics_policies.shtml. As such, any grievances should first be brought to the attention of the student's advisor. Both the student and the advisor should make all efforts to solve the problem through candid discussion of the issue involved. If the problem cannot be solved in this manner, the grievance should then be brought to the attention of the Graduate Program Director, who will interpret the graduate affairs regulations and make a judgment. Depending on the nature of the grievance, the Graduate Program Director may consult with the Chair and other university faculty and/or officials prior to making a decision. If the decision is unsatisfactory to the student, it can be appealed at the level of the Chair. In the event that the resolution of the grievance at the institutional level is still not satisfactory to the student, he/she may bring the grievance before the Associate Dean of the Graduate School at the Medical Center, and ultimately, if still unresolved, to the Dean of the Graduate School.

DEPARTMENT AND MEDICAL CENTER RESOURCES

HEALTH SCIENCE LIBRARY

Is located on the 1st floor of the School of Nursing which is located just east of the Medical School. The Library may be reached at:



Call
[\(464\)220-9779](tel:(464)220-9779)



Email
HSL@luc.edu



Visit Staffed Library Hours
Mon. – Thurs: 8:30 am – 7:00 pm
Fri: 8:30 am – 5:00 pm
Vincent J. Galante, MD - Galante Information Commons Open 24/7



Chat During Staffed Hours
[https://libraryh3lp.com/chat/hsmeebo@chat.libraryh3lp.com?skin=14581&identity=librarian&sou
nds=true](https://libraryh3lp.com/chat/hsmeebo@chat.libraryh3lp.com?skin=14581&identity=librarian&sou
nds=true)



TextDuringStaffedHours
(708) 498-4684

Website to access e-journals through the Loyola Library:

<http://tb2lc4tl2v.search.serialssolutions.com/ejp/?libHash=TB2LC4TL2V#/?language=en-US&titleType=ALL>

DEPARTMENT COMPUTERS

Two general-use desktop computers, a PC laptop, a Mac laptop and a scanner are located in room 220, CTRE Building 115. These resources are available for both graduate students and faculty to use. Conditions of use are posted and must be strictly followed. The Departmental computers are supervised by the office.

COPY MACHINES

Students may use the departmental photocopier machine for personal use at a cost of \$.05 per copy (Preparation of the final copy of one's dissertation or thesis is considered a personal expense). Money for personal copying should be given to MIIM Administrative Assistant.

STUDENT HEALTH SERVICE

Services include routine office visits for physical exams, acute care, and preventive medicine. Immunizations required for admission to Medical School and Graduate School should be obtained prior to matriculation and are not routinely provided by the Student Health Service.

Student health service is mandatory to all students at the medical center and included as part of the Student Development fee. This service covers nurse and physician visits within Loyola Student Health Service. Students should also have current health/hospitalization insurance to cover the cost of specialist referrals, diagnostic testing and hospitalization, which are not covered by the Student Health Service fee.

The Loyola Student Health Clinic is located in the Stritch School of Medicine,

The Loyola Wellness Center: <https://www.luc.edu/wellness/>

Appointments: <https://www.luc.edu/wellness/medical/appointments/>

Immediate Care Service

Students who require Emergent medical services after Student Health hours or on the weekend can be seen at:

Loyola Center for Health at River Forest Immediate Care: 7617 W. North Ave 708-771-1300

Loyola Center for Health at Burr Ridge Immediate Care: 6800 N Frontage Rd 708-327-1064

Weekdays open 8am - 8 p.m.; Weekends and Holidays, 8 a.m. to 3 p.m. (Closed Christmas Day)

Emergency Services

Students who require emergency services should go to the Loyola University Health System Emergency Department or the Closest ER in an emergency. (**Note:** NOT covered under student health).

<https://www.luc.edu/wellness/medical/emergencycrisiscare/>

MISCELLANEOUS MATTERS

SAFETY

The Department of Microbiology and Immunology in conjunction with the Department of Research Safety and Compliance has developed a safety program designed to fulfill government regulations and protect its faculty, staff and students. To comply with the program, all students are required to annually complete mandatory safety training before beginning or continuing laboratory work. This requirement is fulfilled by either attending a safety training presentation or by viewing online modules.

In addition to general safety, students who work in the laboratory are required to take lab specific safety training through medtraining.org. Topics covered include Biosafety, Chemical Safety, and Globally Harmonized System for Chemicals. Students will receive an e-mail from Medtraining.org to access these training modules.

Students will attend the radiation safety class presented by the Radiation Control Department before starting experiments employing radioactivity.

Any questions or concerns regarding laboratory safety should be directed to Matt Hejna, Director of Research Safety and Compliance at mhejna@luc.edu.

MAILBOXES AND ANNOUNCEMENTS

The mailboxes are located in room 209; each student has an assigned box. Seminar and journal club announcements are posted in the departmental office suite (room 215) and in room 209 and should be checked daily.

SAKAI

This handbook and other useful resources are posted on Sakai on the MIIM Graduate Programs Sakai site (sakai.luc.edu).

CONTACT INFORMATION

It is important that students keep their address and residential/cell telephone number up to date with the departmental office and with the graduate school office, as documents are mailed each year to the address on file and it may be necessary to reach students by phone.

VACATION POLICY

Consistent with graduate school policy, graduate students in good standing are eligible for time off

from their studies and research as follows: students may take Loyola University Chicago holidays and 10 working days of vacation. For first year students, vacations must be approved by the Director of Graduate programs. Once a student has chosen a mentor, the mentor must approve the vacation schedule. Requests for vacation time should be submitted sufficiently well in advance of the intended start date so as to minimize disruptions to course work, research and/or other academic activities.

ABSENCES

If you will be absent for a day or more, please notify your advisor and the departmental office.

LEAVES OF ABSENCE

Official leaves of absence are intended for students who wish to discontinue temporarily their graduate studies due to special circumstances (e.g., medical, personal or professional reasons). Students who are on a leave of absence may not use University resources, including faculty time. A leave of absence postpones all deadlines concerning completion of degree requirements for the duration of the leave of absence. A student requesting a leave of absence is to complete a Leave of Absence from within GSPS and contact the program's Graduate Program Director. The Graduate Program Director is to then make a recommendation on the student's behalf to the Graduate School. Decisions regarding the approval of leaves of absence rest with the Graduate School; when reviewing requests for a leave of absence, the Graduate School may require additional information or documentation from the student and the Graduate Program Director. In cases where the Graduate Program Director recommends that the leave of absence not be granted, the student may petition the Graduate School to consider her/his request. International students admitted to the United States on temporary visas must also receive approval from the university's Office of International Programs.

Leaves of absence are limited to a period of one full academic year. If a student is not prepared to return to active status after one year, the student may request a renewal of the leave of absence for a period of up to one year; in such cases, the Graduate Program Director and the Graduate School will review the student's record and future plans to determine whether an additional leave is in the best interests of the student, the program and the Graduate School.

In order to be reinstated to active status, the student must notify the Graduate School in writing upon returning from a leave of absence. Unless the student is granted a renewal of a leave of absence, the student must return to active status in the semester following the expiration of a leave of absence; failure to do so may result in dismissal from the program. If a student does not return from a leave of absence after two consecutive years, s/he must complete an application for re-admission to the program. Students who request a leave of absence should also inform their mentor and other key faculty such as Dissertation/Thesis committee members, faculty in charge of student teaching, etc.

IDENTIFICATION CARD

All students, faculty, and staff at the Medical Center are required to wear a photo identification card. All new students will be issued a Loyola student ID on the first day of orientation. You must have a Loyola University ID visible at all times, so if you miss obtaining an ID badge the first day of orientation, you must obtain one from the [Parking Office](#) (Mulcahy Bldg., Room 1606, ext. 69092) Monday-Friday between 7:00 am and 3:30 pm. Please telephone first, 708-216-9092.

PARKING

All students, faculty and staff are required to use their identification cards to enter parking lot C. Please contact the parking office for current fees. Fees will be deducted from your monthly stipend or you may pay one lump sum by cash, check or charge. Patient parking lots are restricted to patient use only and all others will be ticketed.

LAB COATS

The department will provide laboratory coats and laundry services free of charge. Everyone working with pathogens or chemicals must wear a laboratory coat. Lab coats can be found in Lab Room 208, near the south elevators.

TELEPHONE USE

Personal calls should be kept to a minimum and made from personal cell phones. To place a business call to an outside vendor or institution dial "9" and then the number. Long distance calls are recorded by the Medical Center and cannot be made by students unless the student has been issued a personal long-distance dialing code.

HOUSING

Maywood is 10 miles west of downtown Chicago. It is located near historic Oak Park, home to many Frank Lloyd Wright houses and birthplace of Ernest Hemingway. Many of our students live in Oak Park and commute the short 2-3 mile distance to the medical center. About 1 mile south of campus is Brookfield with the historic Hollywood neighborhood. This is the town, more specially the train stop that gave its name to its more famous namesake to the west. Brookfield and neighboring Forest Park are pastoral suburbs and another good source of student housing. You may also be familiar with the world famous [Brookfield Zoo](#).

In addition to Oak Park and Forest Park, there are a variety of locations within the Chicagoland area where our students have found housing. In particular, the suburban areas near the campus offer a wide choice of comfortable, affordable living accommodations to suit all lifestyles. These include River Forest, Berwyn, Brookfield, North Riverside, Forest Park and LaGrange Park. Alternatively, some

students do commute from Chicago. We highly recommend that you solicit the advice of our current students as to location, commuting needs, and price range. Lists of apartments and houses for rent, maps of the campus and nearby communities, and information about local transportation are readily available in various locations in the Chicagoland area.

To get to campus students and Post-Docs either take public transportation, bike, car pool or drive.

Some good websites to find housing include:

Craig's List	http://chicago.craigslist.org/
Hot Pads	http://hotpads.com/
Apartment Guide	http://www.apartmentguide.com
Realtor	http://www.realtor.com/ (search rentals)
Pad Mapper	http://padmapper.com
Apartments.com	www.partments.com
Rent Café	https://www.rentcafe.com/apartments-for-rent/us/il/chicago/

THE MICROBIOLOGY/IMMUNOLOGY FACULTY AND THEIR RESEARCH

Edward M. Campbell, Professor and Chair; Ph.D., University of Illinois at Chicago, 2004. Host factors involved in inhibiting or facilitating HIV-1 infection. Understanding the host pathways leading to inflammation during infection and neurodegenerative diseases.

Prabhodh Abbineni, Assistant Professor; Ph.D., Western Sydney University, NSW, Australia.

Jonathan Allen, Assistant Professor; PhD, Wayne State University School of Medicine, 2011. Infection dynamics of *Pseudomonas aeruginosa* and defining the role of contact-dependent growth inhibition (CDI) systems in bacterial pathogenesis.

Susan C. Baker, Professor; Ph.D. Vanderbilt University. The focus of her research is on the replication and pathogenesis of coronaviruses and the etiology and pathogenesis of Kawasaki Disease.

Thomas M. Gallagher, Professor, Ph.D., University of Wisconsin, 1987. Virus–host interactions; mechanisms of virus assembly and virus-cell entry; structure and function of membrane glycoproteins.

Alyson Hockenberry, Assistant Professor; PhD., University of Arizona, 2016. Quantitative and systems biology of infectious disease; bacterial pathogenesis.

Makio Iwashima, Associate Professor, Ph.D. Stanford University, 1990. Interactions between environmental and nutritional elements with the immune system.

Karthik Hullahalli, Assistant Professor, Ph.D.

Host-microbe interactions in bacterial infection, with particular emphasis on understanding the population dynamics of microbes within the host and the impacts of excessive inflammation on pathogen growth and spread. His lab leverages diverse approaches, including quantitative analysis of infection dynamics with barcoded bacteria, animal models of systemic infections, and cell culture-based assays of innate immunity. The long-term goal of this research is to mitigate the burden of infectious diseases by mechanistically dissecting the complex interplay between infectious microbes and the immune system and to leverage these insights for therapeutic treatment of bacterial infections.

Katherine L. Knight, Professor; Ph.D., Indiana U., 1966. Regulation of B cell development in bone marrow; host-microbe interactions in gut-associated lymphoid tissues; mechanism of action of probiotics in health and disease; generation of mucosal vaccines.

Abby Kroken, Assistant Professor; PhD, Medical College of Wisconsin, 2013. Host-pathogen interaction at the ocular surface leading to bacterial keratitis.

Phong T. Le, Professor, Ph.D., Ohio State University, 1985. Thymic epithelial cell biology in thymic organogenesis, aging and thymic involution; T cell development and cell base immunotherapy; innate lymphoid cells in human urothelial cell pathophysiology.

Herbert L. Mathews, Professor (Emeritus); Ph.D., West Virginia University, 1977. Effects of stress upon the immune system: psychoneuroimmunology: epigenetics.

Bryan C. Mounce, Associate Professor; Ph.D., Medical College of Wisconsin, 2014. The competition between host and virus for polyamines, small positively-charged molecules. The roles of polyamines in the replication of diverse RNA viruses and how polyamines contribute to host signaling pathways that impact viral infection.

Liang Qiao, Professor, M.D., Lausanne University, Switzerland, 1992. Development of vaccines against HPV, HIV and colorectal cancer, mechanisms of tumor resistance, mucosal immunity, innate immunity and targeting innate immunity to treat diseases.

Alexia Richards, Assistant Professor, Ph.D. Utilization of human pluripotent stem cell-derived cells and tissues to model viral infection in the central nervous system. The goal of this research is to better understand how the brain responds to infection and to identify elements of the immune response that contribute most significantly to tissue damage. By gaining deeper insight into the brain's innate immune response, we hope to uncover novel therapeutic targets that can help control infection while minimizing collateral damage to neural tissue.

Dorothy K. Sojka, Assistant Professor; Ph.D., University of Rochester, School of Medicine, 2009. Understanding the development and functional diversity of uterine natural killer cell subsets in female reproductive tissues.

Karen L. Visick, Professor; Ph.D., University of Washington, 1993. Biofilm formation and dispersal; microbe-microbe and microbe-host interactions.

Alan J. Wolfe, Professor, Ph.D., University of Arizona, 1985. Urinary microbiome; bacterial physiology; bacterial genetics; protein acetylation; signal transduction.

Yee Ling Wu, Associate Professor, Ph.D., Ohio State University, 2009. Molecular mechanisms of antibody class switch recombination; B cell response in asthma and allergy; complement activation and genetics in autoimmune diseases.

**JOINT APPOINTEE FACULTY
TO THE MICROBIOLOGY/IMMUNOLOGY
AND THEIR RESEARCH**

Mashkoor A. Choudhry, Professor, Burn and Shock Trauma Institute; Ph.D.; Aligarh M. Univ/Central Drug Res. Inst., India, 1988. Gut immunity and epithelial barrier in response to alcohol and injury; Th1 and Th17 effector functions, Neutrophils and gut tissue damage; Role of microRNA and autophagy in gut barrier maintenance.

David W. Hecht, Executive VP for Clinical Affairs and Regional CMO; M.D., Loyola Chicago, 1982. DNA transfer, antibiotic resistance, and virulence factors of pathogenic bacteria.

Gail Hecht, MD, Professor, Gastroenterology, Loyola University Chicago Stritch School of Medicine. Research is host-pathogen interactions with specific emphasis on enteropathogenic Escherichia coli and enterohemorrhagic E. coli.

Clodia Osipo, Associate Professor, Ph.D. Loyola University Chicago, 2002. Elucidating mechanisms of drug resistance in breast cancer with a focus on Notch signaling in cancer stem cells.

Susan L. Uprichard, Professor of Medicine, Division of Hepatology; Ph.D., Harvard University. Experimental model development and viral mathematical modeling to elucidate the molecular biology of hepatitis viruses (HBV, HCV, HDV, and HEV) and the mechanisms of virus-associated liver disease (e.g. steatosis and hepatocellular carcinoma), identify the viral-host interactions that determine infection outcome, and optimize treatment response.

Qun Sophia Zang, Associate Professor, PhD. Loyola University Chicago, 2020. Mechanisms of heart failure in sepsis with a focus on mitochondrial signaling in the regulation of autophagy and inflammation in cardiomyocytes.

IMPORTANT NAMES AND ADDRESSES

Loyola University of Chicago
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 Telephone: (464) 220-9575 Fax: (464) 222-3242

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Loyola University of Chicago
Lake Shore Campus
Sullivan Center for Student Services
 6339 N. Sheridan Rd.
 Chicago, Illinois 60660
 Telephone: (773) 508-7705 Fax: (773) 508 - 8727

Graduate & Professional Enrollment Management (GPEM)
 Lewis Towers
 820 N. Michigan Ave.
 Chicago, IL 60611
 Telephone: (312) 915-8900 Fax: (312) 915-8905
 Prospective Students: gradinfo@luc.edu
 Applicants: gradapp@luc.edu

Financial Aid
Lake Shore Campus
Sullivan Center for Student Services
 6339 N. Sheridan Rd.
 Chicago, Illinois 60660
 Telephone: (773) 508-7704 Fax: (773) 508 - 3397

Stritch School of Medicine
 2160 S. First Ave.
 Building 120, Room 210

Immigration

Eliza Plous

Faculty Immigration Coordinator | ARO/DSO

International Student & Scholar Services

Loyola University Chicago

Water Tower Campus: Corboy Law Center · Suite 800 | Chicago, IL 60611 | P (312) 915-6217

Lake Shore Campus (Thursdays): Sullivan Center · Suite 206 | Chicago, IL 60660 | P (773) 508-2076

E eplous@luc.edu | W www.luc.edu/iss**Medical Center Operator**

708-216-9000

Names of Persons You May Need to Contact

Dean & Chief Diversity	Dr. Sam Marzo	(464) 220-9282
Vice Provost for Research	Dr. Meharvan (Sonny) Singh	(464) 220-9631
Associate Dean, SSOM	Dr. Mitch Denning	(464) 220-9391
Provost	Margaret Callahan	(464) 220-9838
Administrative Assistant, SSOM	Tracy Bielecki	(464) 220-9494
Graduate School, LSC	Dr. Emily Barman	(773) 508-3396
Graduate School Office – Health Science Campus	Margarita Quesada Sandra Marijan	(464) 220-9526 (464) 220-9524

Bursar's Office Water Tower Campus, Rm. 712		(773) 508-7705
Associate Director, Office for International Affairs		(773) 508-6080
Associate Provost and Director of the Health Sciences Library	Dr. Gail Hendler	(708) 216-5303
Director Campus Ministry, Stritch School of Medicine, (Bldg. 120, Rm. 270)	Ann Hillman	(708) 216-1242
Director, Financial Aid Office	Tobyn Friar	(773) 508-8636

GUIDELINES FOR WRITING AN EFFECTIVE GRANT FOR THE QUALIFYING EXAMINATION

The faculty of the Department of Microbiology & Immunology has endorsed the following guidelines for writing an effective grant for the qualifying examination:

1. **The student should acquire the mentor's grant (or a suitable substitute) and go over it with the mentor.** The student should speak in detail with the mentor regarding the level of experimental detail that is appropriate for the prelim document.
2. **The student should focus on a hypothesis that can be clearly stated and should be certain that the experiments actually address the hypothesis.** The rationale for each experiment should be explicitly stated before the experiments are described in detail.
3. **The Aims page is the most important part of the grant.** The hypothesis and experimental rationale should be stated in a clear and self-contained manner. The student must be certain that the aims address the hypothesis.
4. **The Background section and the Research Design section must include relevant details, but it should not be bogged down with lots of "nitty gritty" detail.** For example, it would be proper to describe cell lines that will be used as model systems and include special details about them (such as their lineage, what they respond to if that is critical for their use, etc.) However, it is unnecessary to provide details about their growth media, the density at which you will culture them, or the types of dishes or flasks you will use, etc.
5. **The Research Design section should reflect the writer's willingness to make predictions for the results of experiments as well as to admit that other outcomes are possible.** In both cases, the writer should provide a brief interpretation of the possible outcome and indicate how this information will be used to continue the work, with the goal being to accomplish each aim.
6. **The Research Design section should reflect the writer's ability to anticipate and identify potential problems that the proposed experiments may present.** The writer should provide alternative strategies that will be used if the initial plan proves problematic. **The writer must avoid a situation in which the failure of one experiment or failure of one approach or technique leaves the proposed project dead in the water.**
7. **The Research Design section should reflect that the writer has proposed feasible experiments.** For example, if the proposed experiments require a certain purified protein,

then the writer must include an estimate of how much of the protein is needed for the studies and explain/demonstrate how the required material will be generated. Another example would be discussing how expression of a given gene product will be measured.

8. If an antibody is needed for such assays, is it available or will it be produced? Overlooking such points weakens a proposal as it will create doubt that the proposed work can actually be done and raise concerns that the writer is naive about what he/she is planning to do.
9. The proposal should be put into the context of the overall field. How does the proposed work fit into the larger picture? **It is a mistake for the writer to assume that because he/she thinks the proposed project is interesting that everyone else will feel the same way.** The writer must make a case for why the proposed project is meaningful and worthy of funding. This “vision” is best included at the end of the specific aims section and again in the Background/Significance section. These efforts may also come into play within the last Aim. Clearly, **the writer wants the reviewer to feel that the proposed work will generate results that answer the pertinent questions of the current proposal as well as yield insights leading to additional work and new directions.**

The proposal may be up to 20 pages of double-spaced text, including figures; references can be listed on additional pages.

SEMINAR PRESENTATION

Guidelines for a Successful Presentation

I Background

- A. Clearly state the topic and/or experimental question to be addressed by the seminar, in simple nontechnical language.
- B. Provide a minimum of historical background; limit this to what is needed to understand the seminar.

II Data slides

- A. Before slide is shown
 1. Describe the experimental question that is being addressed by the experiment.
 2. State the rationale for the experiment you are about to describe.
 3. Describe the experimental system
 4. State how this experiment will tell you what you want to know. (i.e., If we observe this. . . then hypothesis X must be correct).
- B. Show slide
 1. Orient the audience (identify axes, experimental groups, etc.).
 2. Focus audience's attention on the salient data.
 3. Describe what the controls are controlling for, if not obvious
 4. Sum up conclusions from slide.
 5. Lead into next slide, if appropriate.

III. Interim Summaries

- A. Use them at the end of a contiguous group of experiments.

IV. Overall Conclusions

- A. Refer back to questions posed in the introduction. Have the studies you have presented answered them?
- B. Where is the field heading?
- C. What is the broader significance of this topic/field? Does it have practical (medical) applications?

V. Presentation Style

- A. Pick an interesting topic and be enthusiastic.
- B. Present your seminar as if you are teaching your audience rather than reporting information to them.
- C. Be professional, not casual.
- D. Talk to the audience, rather than to your slide. Make eye contact.
- E. Talk clearly (not too fast or too slowly, project your voice, articulate each syllable in each word).
- F. Point directly to the pertinent data on your slides. Be sparing in using the pointer.
- G. Keep distracting mannerisms to a minimum.
- H. Be confident with your data and your presentation.

VI. Answering Questions

- A. Answer the question asked. Do not “back into” an answer by starting with a long preamble before directly addressing what was asked.
- B. If you do not understand the question, ask the questioner to clarify her/ his question (i.e., "Are you asking...?").
- C. Be truthful ("I don't know" is an appropriate answer).
- D. State whether the data, experiments, conclusions, etc. are satisfactory or not.
- E. If your conclusions are challenged, and they are sound, stand by them. Rather than backing down, try to understand why the listener has trouble appreciating your reasoning. Listen for their confusion and try to explain yourself better.
- F. Answer aggressive, inappropriate, or illogical questions without any emotion at all. If the questioner will not disengage, tell them you will continue the discussion with them after the seminar.

LOYOLA UNIVERSITY CHICAGO GRADUATE SCHOOL DISSERTATION COMMITTEE MEETING REPORT

NAME OF STUDENT: _____ DATE: _____

NAME OF ADVISOR: _____

COMMITTEE MEMBERS IN ATTENDANCE:

Note: This report should be completed by the Chair of the dissertation committee for each dissertation committee meeting.

Please provide specific information regarding the following items:

I. Response to previous committee recommendation.

II. Progress since last committee meeting.

III. Proposed research objectives for next 6 - 12 months.

IV. Modifications of proposed research in dissertation proposal.

- V. Specific comments or recommendations by committee members.
- VI. Evaluation of strengths and weaknesses of the graduate student.
- VII. Overall progress of student including publications and meeting attendance.

The above report has been read and discussed with the student and accurately represents the progress of this student and the proceedings of the committee meeting.

Student _____

Signature (Advisor) _____

Signature (Graduate School) _____

Date: _____

GUIDELINES FOR KEEPING A LABORATORY NOTEBOOK

Date each experiment

Write a good introduction to each project:

Describe the ultimate goal or question of each project (e.g., Determine the *in vivo* synthesis of a protein).

Describe the overall experimental approach necessary to reach that goal (e.g., you need to construct an appropriate clone that will contain x, y, and z characteristics. To do this, you will subclone piece X from plasmid Y into plasmid Z).

Outline the specific steps of the experimental approach (e.g. Isolate plasmid DNA, Digest, etc.)

Provide sufficient experimental detail that the work can be repeated exactly, if necessary, or for trouble-shooting. (e.g., a 1 M stock was made by dissolving 435 g of reagent X in 1 liter of deionized water; or, the DNA was incubated for 2.5 h, even though the protocol called for 1 hour).

Describe and interpret the results, providing expectations wherever possible (e.g., the BglII digest resulted in band sizes of 3 and 9 kb. I expected to see 2.8 kb and 9.2 kb bands. I believe that the band sizes are close enough to the correct size to proceed.)

Provide possible explanations for unexpected results (e.g., I saw a 3rd, unexpected band. This may result from an incomplete digestion or from the presence of a third BglII restriction site. I believe the former explanation to be the more correct one, because the size of the third band was 12 kb, which is equal to the combination of the two known (expected) band sizes.)

Draw conclusions at the end of each experimental result (e.g., There were over 1000 colonies on the transformation control plate. Thus, the 7/27/01 batch of *E. coli* DH5 α competent cells has a transformation efficiency of X transformants per 10⁸ cells).

Summarize results and state future direction. (e.g., Expression of gene X was monitored from plasmid pXX1 in Y cells. 30% of the cells were positive, suggesting that... The next question will be...).

NEVER remove your lab notebook from the building; **STORE** it in a safe place.

USEFUL WEBSITES

Useful Department sites:

Department home: <http://ssom.luc.edu/microbio/>

Faculty: <http://ssom.luc.edu/microbio/people/faculty/>

Environment: [Health Sciences Campus | Loyola University Chicago Health Sciences Campus: Loyola University Chicago \(luc.edu\)](#)

Useful Loyola sites:

Loyola University Chicago

Home Page: <http://www.luc.edu>

Graduate Programs in the Biomedical Sciences: <https://www.luc.edu/stritch/graduateschool/>

Course registration (LOCUS): www.luc.edu/locus

Academic calendars: <http://www.luc.edu/academics/schedules/index.shtml>

Graduate school home page: <http://www.luc.edu/gradschool/>

Graduate policies and degree requirements: http://www.luc.edu/gradschool/academics_policies.shtml

Graduate student progress system: <https://gsps.luc.edu/Secure/login.aspx>

Sakai: <https://sakai.luc.edu/>

Tuition and fees: [2025-2026 Tuition & Fees: Office of the Bursar: Loyola University Chicago \(luc.edu\)](#)

Services & Resources/Forms

http://www.luc.edu/gradschool/servicesandresources_forms.shtml

Loyola Wellness Center <https://www.luc.edu/wellness/medical/appointments/>

GSC website: <http://ssom.luc.edu/bgsc/>

Library

Library home: <https://hsl.luc.edu/home>

e-journals access [Welcome - Health Sciences Library - Health Sciences Library at Loyola University Chicago Health Sciences \(luc.edu\)](#)

Other useful sites:

National Association of Graduate and Professional Students (NAGPS) Has useful links for dissertation writing: <http://www.nagps.org/>

Policies

Guidelines for Avoiding Plagiarism, Self-Plagiarism, and Questionable Writing Practices

(Policy to be signed and dated upon entering graduate school)

The following guidelines are taken directly from "Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing" by Miquel Roig.

Guideline 1: An ethical writer ALWAYS acknowledges the contributions of others to his/her work.

Guideline 2: Any verbatim text taken from another source must be enclosed in quotation marks and be accompanied by a citation to indicate its origin.

Guideline 3: When we summarize others' work, we use our own words to condense and convey others' contributions in a shorter version of the original.

Guideline 4: When paraphrasing others' work, not only must we use our own words, but we must also use our own syntactical structure.

Guideline 5: Whether we are paraphrasing or summarizing we must always identify the source of our information.

Guideline 6: When paraphrasing and/or summarizing others' work we must ensure that we are reproducing the exact meaning of the other author's ideas or facts and that we are doing so using our own words and sentence structure.

Guideline 7: In order to be able to make the types of substantial modifications to the original text that result in a proper paraphrase, one must have a thorough command of the language and a good understanding of the ideas and terminology being used.

Guideline 8: When in doubt as to whether a concept or fact is common knowledge, provide a citation.

Guideline 9: Authors of complex studies should heed the advice previously put forth by Angell & Relman (1989). If the results of a single complex study are best presented as a 'cohesive' single whole, they should not be partitioned into individual papers. Furthermore, if there is any doubt as to whether a paper submitted for publication represents fragmented data, authors should enclose other papers (published or unpublished) that might be part of the paper under consideration (Kassirer & Angell, 1995).

Guideline 10: Authors who submit a manuscript for publication containing previously disseminated data, reviews, conclusions, etc., must clearly indicate to the editors and readers the nature of the previous dissemination. The provenance of data must never be in doubt.

Guideline 11: While there are some situations where text recycling is an acceptable practice, it may not be so in other situations. Authors are urged to adhere to the spirit of ethical writing and avoid reusing their own previously published text, unless it is done in a manner that alerts readers about the reuse or one that is consistent with standard scholarly conventions (e.g., by using of quotations and proper paraphrasing).

Guideline 12: In the domain of conferences and similar audio-visual presentations of their work, authors should practice the same principles of transparency with their audiences.

Guideline 13: In addition to standard practices of ethical scholarship, authors must be mindful of readers' expectations, applicable issues related to intellectual content rights (i.e., copyright), and, especially, the need to always be transparent in our work when reusing material across the various dissemination domains.

Guideline 14: Because some instances of plagiarism, self-plagiarism, and even some writing practices that might otherwise be acceptable (e.g., extensive paraphrasing or quoting of key elements of a book) can constitute copyright infringement, authors are strongly encouraged to become familiar with basic elements of copyright law.

Guideline 15: Authors are strongly urged to double-check their citations. Specifically, authors should always ensure that each reference notation appearing in the body of the manuscript corresponds to the correct citation listed in the reference section and vice versa and that each source listed in the reference section has been cited at some point in the manuscript. In addition, authors should also ensure that all elements of a citation (e.g., spelling of authors' names, volume number of journal, pagination) are derived directly from the original paper, rather than from a citation that appears on a secondary source. Finally, when appropriate, authors should ensure that credit is given to those authors who first reported the phenomenon being studied.

Guideline 16: The references used in a paper should only be those that are directly related to its contents. The intentional inclusion of references of questionable relevance for purposes such as manipulating a journal's or a paper's impact factor or a paper's chances of acceptance, is an unacceptable practice.

Guideline 17: Always cite the actual worked that is consulted. When the published paper cannot be obtained, cite the specific version of the material being used whether it is conference presentation, abstract, or an unpublished manuscript. Ensure that the cited work has not been subsequently corrected or retracted.

Guideline 18: Generally, when describing others' work, do not cite an original paper if you are only relying on a secondary summary of that paper. Doing so is a deceptive practice, reflects poor scholarly standards, and can lead to a flawed description of the work described.

Guideline 19: If an author must rely on a secondary source (e.g., textbook) to describe the contents of a primary source (e.g., an empirical journal article), s/he should consult writing manuals used in her discipline to follow the proper convention to do so. Above all, always indicate to the reader the actual source of the information being reported.

Guideline 20: When borrowing heavily from a source, authors should always craft their writing in a way that makes clear to readers which ideas/data are their own and which are derived from sources being consulted.

Guideline 21: When appropriate, authors have an ethical responsibility to report evidence that runs contrary to their point of view. In addition, evidence that we use in support of our position must be methodologically sound. When citing supporting studies that suffer from methodological, statistical, or other types of shortcomings, such flaws must be pointed out to the reader.

Guideline 22: Authors have an ethical obligation to report all aspects of the study that may impact the replicability of their research by independent observers.

Guideline 23: Researchers have an ethical responsibility to report the results of their studies according to their a priori plans. Any post hoc manipulations that may alter the results initially obtained, such as the

elimination of outliers or the use of alternative statistical techniques, must be clearly described along with an acceptable rationale for using such techniques.

Guideline 24: Authorship determination should be discussed prior to commencing research collaboration and should be based on established guidelines, such as those of the International Committee of Medical Journal Editors.

Guideline 25: Only those individuals who have made substantive contributions to a project merit authorship in a paper.

Guideline 26: Faculty-student collaborations should follow the same criteria to establish authorship. Mentors must exercise great care to neither award authorship to students whose contributions do not merit it, nor to deny authorship and due credit to the work of students.

Guideline 27: Academic or professional ghost authorship in the sciences is ethically unacceptable.

Guideline 28: Authors must become aware of possible conflicts of interest in their own research and to make every effort to disclose those situations (e.g., stock ownership, consulting agreements to the sponsoring organization) that may pose actual or potential conflicts of interest.

Reference

Roig, M. Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing. St. Johns University. 2015.

<https://ori.hhs.gov/avoiding-plagiarism-self-plagiarism-and-other-questionable-writing-practices-guide-ethical-writing>

Name

Signature

Date

Artificial Intelligence Policy

(Policy to be signed and dated upon entering graduate school)

The use of artificial intelligence (AI) or machine learning algorithms to prepare text, figures, diagrams or other outputs is prohibited, unless explicitly allowed by the course director or faculty member in charge of the project. Even if the AI source is cited, it is not your original work and will not be accepted. The use of AI will be considered a type of plagiarism and can result in termination from the graduate program.

Name

Signature

Date

POLICY ON SOCIAL MEDIA FOR SSOM STUDENTS

(Policy to be signed and dated upon entering graduate school)

<https://ssom.luc.edu/media/stritchschoolofmedicine/pdfs/social-media-guidelines.pdf>

Social media sites, platforms, tools, activities and networks (collectively, “Social Media”) facilitate widespread, even global, Internet communication and interaction among users. Stritch School of Medicine (“SSOM”) students at Loyola University of Chicago (“LUC”) may use Social Media to, among other things, build networks of like-minded people, stay connected and share knowledge and information. SSOM encourages proper use of Social Media and keeping ethical and professional responsibilities at the forefront in connection with Social Media use. To that end, and because a student’s actions reflect upon SSOM and each SSOM student, it is necessary for SSOM students to follow the guidelines and practices set forth below.

Always use good judgment, accuracy and honesty in your Social Media communications.

Make sure that you have all the facts before you post. It's better to verify information with a source first than have to post a correction or retraction later. Double-check all Social Media use for accuracy, spelling and grammar. Errors, omissions or inappropriate language or behavior reflect poorly on you, LUC and SSOM and may constitute breaches of SSOM's Academic Policy Manual and other SSOM or LUC policies. Be honest about yourself and your identity, but do not provide personal information that others could use against you or allow identity thieves or criminals to take advantage of you.

Be respectful of others and the information you are providing. Your comments and online behavior can be interpreted as being representative of LUC, SSOM or your classmates in general. Uphold the mission and values of LUC and SSOM in your Social Media use. Among other things, do not use vulgar language or display language or photographs that imply disrespect for any individual or group because of age, race, gender, ethnicity, sexual orientation, disability or any other status protected by law.

Do not reveal anyone’s private information. This includes tagging photos with an individual’s name without his/her approval. *Students are absolutely prohibited from using Social Media to convey a patient’s photo or any patient information or conveying private or academic information of another student.*

Always think before you “write.” Consider the use, value and impact of any Social Media activity. Incomplete thoughts can be taken out of context. Direct others to a blog or site where there is more detail and information, where appropriate.

Encourage feedback, including two-way communication and hyperlinking, as a way to allow others to contribute content and build community.

Separate your opinions from facts. Your observations, experiences and opinions are important, but separate opinions from facts, including by, where appropriate, citing and linking sources.

Do not present yourself as an SSOM or LUC representative when presenting your own views. If you want to express your views, make it clear that such views are yours alone and are not representative of SSOM or LUC and that you are not communicating on anyone's behalf.

Follow all applicable local and federal laws, including copyright laws. Laws relating to confidentiality, libel/slander, privacy and disclosure can be implicated by Social Media and must be adhered to. Social Media must not be used to promote activities that are illegal or violate the rights of others. You also must show proper respect for the laws governing copyright and fair use of copyrighted material owned by others. For additional information on copyright law, refer to the United States Copyright Office web site at <https://www.copyright.gov/>

Follow all applicable SSOM and LUC policies. When using Social Media, SSOM students must comply with all applicable LUC policies and standards, including, among others, SSOM's Academic Policy Manual and LUC's Acceptable Use Policy for Electronic University Resources, Online Harassment Policy, Sexual Harassment Policy and Proper Use of Tech Resources.

Comply with the terms of service and use of any Social Media. Social Media providers change these terms regularly, and it is important to remain current with such terms.

In addition to the guidelines and practices set forth above, an SSOM student's responsibilities as a healthcare professional-in-training must follow standards that may be stricter than the standards for the general Social Media user community. Specifically and to the extent applicable, SSOM expects students to be familiar with, commit to and follow the Social Media use policy developed by the American Medical Association, the current version of which is attached as *Exhibit A* to this Social Media Policy.

Effective July 1, 2013

Name

Signature

Date

MICROBIOLOGY/IMMUNOLOGY FACULTY MEMBERS

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Herbert L. Mathews, Ph.D.	Emeritus Professor	115/337	hmathew@luc.edu 216-4586
Bryan Mounce, Ph.D.	Associate Professor	115/233	bmounce@luc.edu 216-3358
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Dorothy Sojka, Ph.D.	Assistant Professor	115/237	dksojka@luc.edu 216-3389
Karen L. Visick, Ph.D.	Professor	115/222	kvisick@luc.edu 464-220-9572
Alan J. Wolfe, Ph.D.	Professor	115/224	awolfe@luc.edu 216-5814
Yee Ling Wu, Ph.D.	Associate Professor	115/225	ywu24@luc.edu 216-6748

MICROBIOLOGY/IMMUNOLOGY ADJUNCT FACULTY

Mashkoor A. Choudhry, Ph.D	Professor	115/4236	mchoudhry@lumc.edu 327-2463
David W. Hecht, M.D.	Professor	102/1710	dhecht@luc.edu 216-0552
Gail Hecht, M.D.	Professor	54/167	ghecht@lumc.edu 2169230
Clodia Osipo, Ph.D.	Associate Professor	112/236	cosipo@luc.edu 327-2372
Susan Uprichard, Ph.D.	Professor	115/335	suprichard@luc.edu 327-3205
Qun Sophia Zang, Ph.D.	Assistant Professor	115/328	qzang@luc.edu 327-2700

**MICROBIOLOGY/IMMUNOLOGY
Ph.D. GRADUATE PROGRAM STUDENTS**

Name	Current Year	Mentor
Nor Alamery	2 nd Year	Abbineni
Dena Heyasat	2 nd Year	Sojka
Jordan Hollebeak	2 nd Year	Qiao
Crimson Stuckert	2 nd Year	Hockenberry
Andrea Chu	3 rd Year	Campbell
Millie Martinez	3 rd Year	Kroken
Samantha Stacey	3 rd Year	Mounce
Adam Thota	4 th Year	Kroken
Natalie Lomascolo	5 th Year	Mounce
Natasha Peterson	5 th Year	Allen
Karen Chang	5 th Year	Wu
Rachel Mazurek	5 th Year	Kroken
Bruna Tatematsu	Senior	Sojka
Michael Vanek	Senior	Wolfe
Abigail Banas	Senior	Allen
Surovi Mohona	Senior	Gallagher
Thomas Bank	Senior	Wolfe
Thomas Kicmal	Senior	Gallagher

**MICROBIOLOGY/IMMUNOLOGY
M.S. GRADUATE PROGRAM STUDENTS**

Name	Current Year	Mentor
Isabella Hamdan	1 st Year	TBD
Emily Irvine	1 st Year	TBD
Arya Shah	1 st Year	TBD
Ella VarnHagen	1 st Year	TBD

**MICROBIOLOGY/IMMUNOLOGY
M.D./Ph.D. GRADUATE PROGRAM STUDENTS**

Name	Current Year	Mentor	Bldg. & Room No.
Zachary Orban Entered Med School 8/23	1 st Year	Wu	115/270B
Andrew Marten Entered Med School 8/22	2 nd Year	Kroken	115/170B
Adam Bronson Entered Med School 8/21	3 rd Year	Allen	115/270B

Qualifying Exam Grading Rubric
Integrated Program in Biomedical Sciences

Student Name:	
Committee Member:	
<i>(Scoring System on 2nd page)</i>	
Hypothesis or Experimental Question (Comments):	Score:
Experimental Approach (Comments):	Score:
Background Knowledge (Comments):	Score:
Oral Presentation:	Score:
Additional Comments:	Grade (Pass/Fail):

Scoring System

1 Exceeds Expectations Outstanding/Good

The student excelled in this area. He/she understood it and was highly proficient.

2 Meets Expectations Fair

The student did OK and performed adequately. There are some areas in need of improvement.

3 Below Expectations Poor

The student did not understand this or do well in this area. The student failed to demonstrate minimal adequate competency, even with suggestions from the committee.

A grade of “Fail” by two or more committee members will result in remediation or termination from the PhD program.

Hypothesis or Experimental Question

Student must have a hypothesis or experimental question which is clearly stated, testable, and well-justified. The rationale for this hypothesis or question must be clear, and the student must be able to defend his/her proposed hypothesis or question.

Experimental Approach

The experimental approach must be clearly described and logical. The approach must directly test the hypothesis or experimental question. Discussion of expected and alternative outcomes, potential pitfalls, and alternative approaches must be included.

Background Knowledge

The student must display a deep understanding of the Qualifying Exam topic and supporting literature. The student must also have broad knowledge of the general biomedical sciences and experimental approaches, especially in their specific track.

Oral Presentation

The student must be able to clearly articulate and describe the research proposal. The student must be able to defend his/her rationale for specific approaches and respond to critiques in a professional manner. Overall oral communication skills are evaluated in this section.

Dissertation defense rubric

Attribute	Does not meet	Meets expectations	Exceeds expectations
Quality of oral presentation	<input type="checkbox"/> Oral presentation was poorly organized and poorly delivered. Student displayed little or no eye contact with audience or read entire presentation; visual aids were poorly designed or confusing	<input type="checkbox"/> Oral presentation was coherently organized; hypothesis, approach, results and conclusions effectively communicated; visual aids were generally well- designed and added to the presentation	<input type="checkbox"/> Oral presentation was well organized; student was confident in material and able to professionally articulate hypothesis, approach, results and conclusions in an engaging, logical, and thoughtful manner; visual aids were professional, clear, concise, and appropriate
Quality of response to questions	<input type="checkbox"/> Student confuses significant concepts; response to questions are incorrect, vague or not relevant	<input type="checkbox"/> Student responds appropriately address the question; claims are supported by data or literature citations	<input type="checkbox"/> Student responds appropriately to address the question; many responses demonstrate significant insight into the problem.
Breadth of scientific knowledge	<input type="checkbox"/> Student fails to adequately understand/explain necessary scientific principles and/or background information and/or fails to put the work in appropriate	<input type="checkbox"/> Student appropriately puts the work in perspective of past and present studies in the literature and is capable of introducing and explaining necessary scientific	<input type="checkbox"/> Student demonstrates a high level understanding of past and current literature and brings together concepts to think deeply about the research topic.
Quality of Written document	<input type="checkbox"/> Document is poorly written and/or the work is poorly justified; grammatical and scientific errors are present in abundance	<input type="checkbox"/> Document is written well and with sufficient depth to put the work in context; the rationale for the work, the experimental design, the results and the conclusions are appropriately described	<input type="checkbox"/> Document is exceptionally well written; the rationale, approaches, results, conclusions are described in a logical and compelling manner.

Ability to think critically	<input type="checkbox"/> Student is unable to independently put key concepts together	<input type="checkbox"/> Student makes appropriate connections between his/her results and between his/her results and related scientific	<input type="checkbox"/> Student brings together concepts and/or results in a way that promotes significant advances in his/her field of study
Contribution to discipline	<input type="checkbox"/> The work makes no or a limited contribution to the literature	<input type="checkbox"/> The work advances knowledge in the discipline	<input type="checkbox"/> The work makes a significant impact on the discipline
Overall assessment	<input type="checkbox"/> Fails to meet expectations	<input type="checkbox"/> Meets expectations	<input type="checkbox"/> Exceeds expectations

Lay presentation

Circle one:

#1 (to be completed by the end of the second
year)

#2 (to be completed by the end of the fourth
year)

Student name:

Group members, if applicable:

Date of completion:

Audience (children, adults):

Location:

Topic:

Feedback (please provide a narrative paragraph about your experience and what could be improved in the future)

IPBS PhD Track & Advisor Selection Form

FORWARD TO: GRADUATE SCHOOL OFFICE
mquesad@luc.edu
CTRE, Suite #140
Loyola University Chicago Health Sciences

Division

Entry: Fall Semester _____

Name of Applicant: _____

Last

First

Track Selection:

- Biochemistry & Molecular Biology
- Cell & Molecular Physiology
- Integrative Cell Biology
- Microbiology & Immunology
- Molecular Pharmacology & Therapeutics Neuroscience

Signature of Graduate Program Director:

_____ Date: _____

PhD Advisor Selection:

Signature of **Advisor:**

_____ Date: _____
(Print Name)

Signature of **Department Chair:**

_____ Date: _____
(Print Name)

Signature of **Associate Dean:**

_____ Date: _____

MS Advisor Selection Form-HSD

FORWARD TO: GRADUATE SCHOOL OFFICE
mquesad@luc.edu
CTRE, Suite #140
Loyola University Chicago Health Sciences Division

Entry Semester:

Name:

Last

First

MS Program (Choose one): Biochemistry & Molecular Biology
Cell & Molecular Physiology
Integrative Cell Biology
Microbiology & Immunology
Molecular Pharmacology & Therapeutics
Neuroscience
Infectious Disease & Immunology
Cell and Molecular Oncology (CMO)

MS Advisor Selection:

Signature of Advisor:

_____ Date: _____
Print Name

Signature of Graduate Program Director:

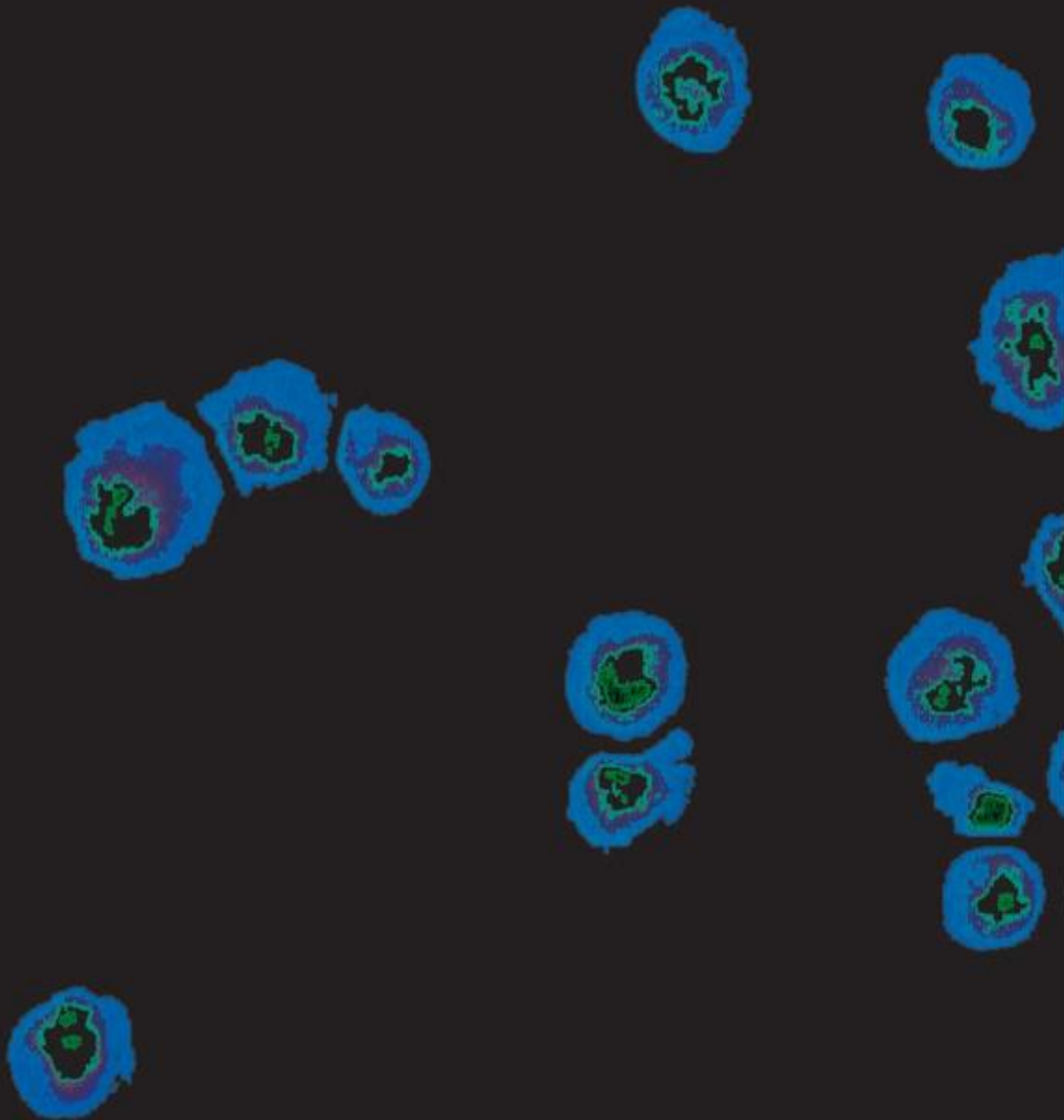
_____ Date: _____
Print Name

Signature of Department Chair (if applicable)

_____ Date: _____
Print Name

Signature of Associate Dean:

_____ Date: _____



STRITCH
SCHOOL of MEDICINE

Department of Microbiology and Immunology
Loyola University Chicago Stritch School of Medicine
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Maywood, IL 60153