



IMMUNOLOGY & MICROBIAL PATHOGENESIS

Student Handbook 2021-2022

**WEILL CORNELL
MEDICINE**

**GRADUATE SCHOOL of
MEDICAL SCIENCES**

A partnership with the Sloan
Kettering Institute

GREETING from the PROGRAM DIRECTORS

The Immunology and Microbial Pathogenesis (IMP) graduate program is a joint venture between the Weill Cornell Graduate School of Medical Sciences (WCGSMS) and Sloan Kettering Institute (SKI). Some IMP faculty members are affiliated with the Hospital for Special Surgery (HSS), a premier rheumatology and orthopedics institute that serves as the rheumatology and orthopedics departments of Weill Cornell's hospital. Drs. Sabine Ehrt (WCGSMS) and Alexander Rudensky (SKI) are co-chairs of IMP. All three institutions are located within two New York City blocks and represent a unique, enriching and collaborative training environment.

Over the past few years, IMP has expanded to over 38 labs between the three institutions. Major areas of focus are microbial immunity, host-commensal microbiota relationships, microbial pathogenesis, tumor immunology, molecular and cellular immunology, autoimmunity and inflammation, and immune-therapy. The IMP leadership recognizes the importance of scientific collaboration and has formed strong bonds with the well-known Jill Roberts Institute for Research (JRI), Parker Institute, as well as the Ludwig Center to strengthen both program's missions and innovation in scientific research and education. These centers have reputations in performing cutting edge research at both basic and translational level by connecting basic researchers, clinicians, pathologists, surgeons and bioinformaticians to improve patient care.

The broad objective of the IMP Program is to offer the highest level of training to the next generation of scientists working in immunology, microbial pathogenesis, and host-commensal interactions. This objective is accomplished through interactive teaching modules to Fundamental Immunology & Microbiology, as well as several mini-courses in advanced immunology with rotating topics ensure that students keep abreast of new developments. To keep up with the demands of analyzing "big" data sets, all students partake in a course on quantitative biology. In their second year, all IMP students take the "Admission to Doctoral Candidacy Examination" (ACE) that tests the student's ability to develop, write and orally defend an independent project proposal.

All students do three, 12 weeks long laboratory rotations, each concluding with a mini-symposium where they present their project. The IMP Directors serve as advisors and mentors for all students till they select a thesis lab, which is usually by the end of year one. Upon joining a lab, students are assigned a thesis committee comprised of the mentor and at least two additional faculty. The student meets the thesis committee at least once a year, and if warranted, more frequently. The committee ensures smooth transition through graduate school, offers intellectual and experimental guidance and decides when the student is ready to defend his/her thesis.

IMP provides a rich interactive atmosphere. All students participate in weekly research-in-progress (RIP) seminars where they present their work to the entire IMP community. All IMP members (students, faculty and post-docs) present their work in talks and posters at the annual two-day retreat (usually at Mohonk Mountain House in upstate New York). Finally, students interact with the rich palette of invited speakers for the weekly Tri-I IMP seminar series. These interactions foster collegiality and promote collaborations that are instrumental in furthering the intellectual endeavors of graduate students.

Overall, every effort is made to ensure that all students meet milestones and guidelines towards an intellectually satisfying but timely and productive Ph.D. But more importantly, IMP strives to provide a rich training platform for the most-cutting edge research for the best and the brightest young scientists.

With a warm welcome,

Theresa Lu MD, PhD & Joseph Sun, PhD
Program Directors

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All areas covered on the IMP Program Handbook are subject to change.

IMP LEADERSHIP & COMMITTEES

Program Chairs

Sabine Ehrt, PhD
Alexander Rudensky, PhD

Program Directors

Theresa Lu, MD/ PhD
Joseph Sun, PhD

Student Evaluation Committee

Sabine Ehrt, PhD
Alexander Rudensky, PhD
Theresa Lu, MD/PhD
Joseph Sun, PhD

First Year Student Advisor

Theresa Lu, MD/PhD
Joseph Sun, PhD

ACE Chair (Assigner)

Michael Glickman, MD

Curriculum Committee

Julie Magarian Blander, PhD
Jayanta Chaudhuri, PhD
Sabine Ehrt, PhD
Ming Li, PhD
Joseph Sun, PhD

Retreat Planning Committee

Andrea Schietinger, PhD (Faculty Chair)
Gregory Sonnenberg, PhD (Faculty Chair)
Benjamin Grigg (Student Chair)
Sara Schad
Anthony Claude Antonelli
Laura Menocal
William Yewdell, PhD

Program Coordinator

Tritobia Dadson, MA

GRADUATE SCHOOL LEADERSHIP & ADMINISTRATION

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Efigueroa@med.cornell.edu

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(646) 962-6962

Social & Cultural Events

Discounted tickets for movies, opera, ballet, sports and many more.

Kerri McCabe & Chantal Gooding

eduevents@med.cornell.edu

Olin 231

Career & Professional Development

Aubrey Leukart, PhD

aul4001@med.cornell.edu

IMPORTANT DATES

Fall Registration (Quarter I & II)	August 23 – September 3, 2021
Chalk Talks	September 1- September 11, 2021
IMP Scientific Retreat	October 22, 2021
Scientific Writing Workshop	TBD
First Rotation Symposium	December 9, 2021
Winter Recess	December 13, 2021- December 31, 2021
Spring Registration (Quarter III & IV)	January 3 – January 14, 2022
Spring Break	February 28 – March 4, 2022
Second Rotation Symposium	March 24, 2022
Third Rotation Symposium	June 23, 2022

LAB ROTATIONS

Please note that all lab rotations **MUST** be approved in advance by the Program Directors.

First Lab Rotation (September 20 – December 3, 2021)

Rotation Agreement Due	September 15, 2021
Rotation Report & Evaluation Due	December 17, 2021

Second Lab Rotation (January 3 – March 14, 2022)

Rotation Agreement Due	December 28, 2021
Rotation Report & Evaluation Due	March 28, 2022

Third Lab Rotation (April 11 – June 20, 2022)

Rotation Agreement Due	April 4, 2021
Rotation Report & Evaluation Due	July 5, 2022

* The academic year begins on July 1st and ends on June 30th

IMP PROGRAM REQUIREMENTS

Students in the IMP Program are required to complete a program-specific core curriculum. First year of study is spent with didactic courses in Fundamental Immunology & Microbiology, and complemented by electives in anything from cell biology to structural biology. The program offers continued education throughout the graduate studies in the form of an Advanced Topics in Immunology course with flexible topics, an Immunology Seminar Series highlighting the latest developments in the field presented by distinguished scientists, and a student-run Research in Progress (RIP) seminar for critical discussion of their thesis research and the exchange of ideas. Laboratory rotations complement formal classroom learning.

In order to successfully complete the Core Curriculum, student must achieve a High Pass (HP) or better to remain in good academic standing. Students will be allowed no more than one Low Pass (LP) on any required course with the exception of Fundamental Immunology & Microbiology.

PhD Progress Point Deadlines

Completion of Core Curriculum	End of 2 nd year after matriculation
Declaration of Major Sponsor	End of 1 st year after matriculation
Admission to Doctoral Candidacy Examination (ACE)	End of 2 nd year after matriculation
Successful Defense & Deposit of Dissertation	Current average is 5.6 years

IMP students are expected to complete all requirements for the PhD degree within six years after matriculation in the program. Exceptions must be reviewed and approved by the Program Directors, Co-Chairs and Dean of the Graduate School.

1. COURSE REQUIREMENTS

IMP students are expected to fulfill the following requirements for the PhD degree:

A. Core Curricula

- Fundamental Immunology & Microbiology
- Responsible Conduct of Research (RCR)
- Quantitative Understanding in Biology I (qBio)
- Bioinformatics (must be taken when available)
- Scientific Writing Workshop (must be taken when available)

B. Advanced Coursework

At least **ONE** module of Advanced Topics in Immunology (ATI) must be completed before a student is eligible for the ACE. **TWO** additional modules of ATI must be taken in subsequent years.

C. Electives

Students are recommended to take one of the following courses:

- Molecular Genetics
- Biochemistry & Structural Biology
- Microbial Pathogenesis – Offered at RU

Please note that Molecular Genetics, Biochemistry and Structural Biology **OR** one half of Microbial Pathogenesis may be substituted for one ATI module after the ACE.

D. Seminars and Journal Clubs

IMP students are required to register and participate in these year-long seminars during the entire duration of their graduate training. Students **MUST** register for the Immunology Research in Progress and Immunology Seminar Series once a year in the Fall in order to receive credits and either a grade of "P" (pass) or "F" (fail) will be included in your transcript.

- **Immunology Research in Progress (RIP)**
IMP students and postdoctoral fellows present work in progress and related papers at a weekly seminar. Students, postdoctoral fellows and faculty in the IMP community attend the seminars.
- **Immunology Seminar Series**
The Immunology Seminar Series is a joint effort between Weill Cornell Medicine, Sloan Kettering Institute, The Rockefeller University and Hospital for Special Surgery. Students will have the opportunities to meet with the visiting speaker.
- **Journal Club (JC)**
This is not a registered course. However, students are required to participate. Options include the IMP Student JC.

Students are encouraged to attend additional seminars and journal clubs in areas of their particular interest or in areas that they wish to explore.

NB

- In addition to courses, student must register for Lab Rotations (LROT), ACE (ACEX.5001.02.WCM) and Final Examination (FINL.5001.04.WCM) when appropriate.
- Students who have passed the ACE **MUST** register for the Dissertation Research in the Fall (REST. 5004.01) and Spring (REST 5004.03) every academic year until he/she is ready to defend. All registration should be completed in a timely manner, on or before the set deadline.

2. LABORATORY ROTATIONS

Students are expected to complete three lab rotations before undertaking thesis research, each lasting about 10-12 weeks. The major objective of these rotations is to expose students to a broad range of topics and hands-on research experience, and eventually to allow the student to identify a thesis lab.

The rotation project is often related to the ongoing projects in the lab, but ideally should provide the student a distinct experimental focus. At the end of each rotation, students are expected to present their work at the IMP Rotation Symposium.

Following each rotation, a concise written report (no more than 1 page long) must be submitted to the rotation sponsor. Once approved, the finalized report must be submitted to the Program Coordinator within two weeks of completion of the rotation. The report should describe the project (theoretical background, aims and results) as well as the overall significance of the research undertaken during laboratory rotation. These reports become part of the student's file and evaluation prior to the ACE examination.

Under special circumstances, less than 3 rotations are permitted for students with extensive prior research lab experience. If the student has not identified a thesis lab by the beginning of the second year, a fourth rotation may be permitted, with the approval of the Program Director. As such, a thesis lab must be identified before the start of the third year (fifth semester).

For each rotation, the student must register and submit the **Rotation Agreement** form via LEARN. Once a student has completed a rotation, the **Rotation Report & Evaluation** form must be filed by both student and rotation sponsor. Grading of rotations will be on a Pass/Fail basis.

NB Each lab rotation must be approved by the Program Directors in advance of the rotation start date.

Chalk Talks

In the beginning of the month of September, the IMP faculty members will give brief presentations about their research. The purpose of this week-long event is to help first year students choose labs for their rotations. At each Chalk Talk, four to five faculty members will discuss their work and take questions from students.

3. ACADEMIC ADVISING

First year students are assigned to one of the IMP Program Directors to address questions about courses, rotations, or problems that may surface during the first year of matriculation. The Program Directors will meet with the students individually twice in their first year of studies to review his/her academic progress. Students are expected to identify a thesis lab/major sponsor at the end of first year (by June 30th) and the PI will advise him/her. The Program Directors meet and advise students after their first year as needed.

Once a student passes the Admission to Doctoral Candidacy Examination (ACE), he/she will be required to assemble a Thesis Committee, comprising the major sponsor (PI) and two additional faculty members knowledgeable in the field of study (minor sponsors) with the aid of their PI. Each student (PhD and MD/PhD) should complete the **Nomination of Special Thesis Committee** form. This form should be submitted to Denise Jenkins (djenkins@MED.CORNELL.EDU) and cc the Program Coordinator with all the required signatures as soon as possible.

The Thesis Committee advises the student in his/her research, meeting periodically to monitor progress, and to oversee development of the thesis. During this time, the student continues to participate in the other educational programs offered by the graduate program but works full time in the laboratory.

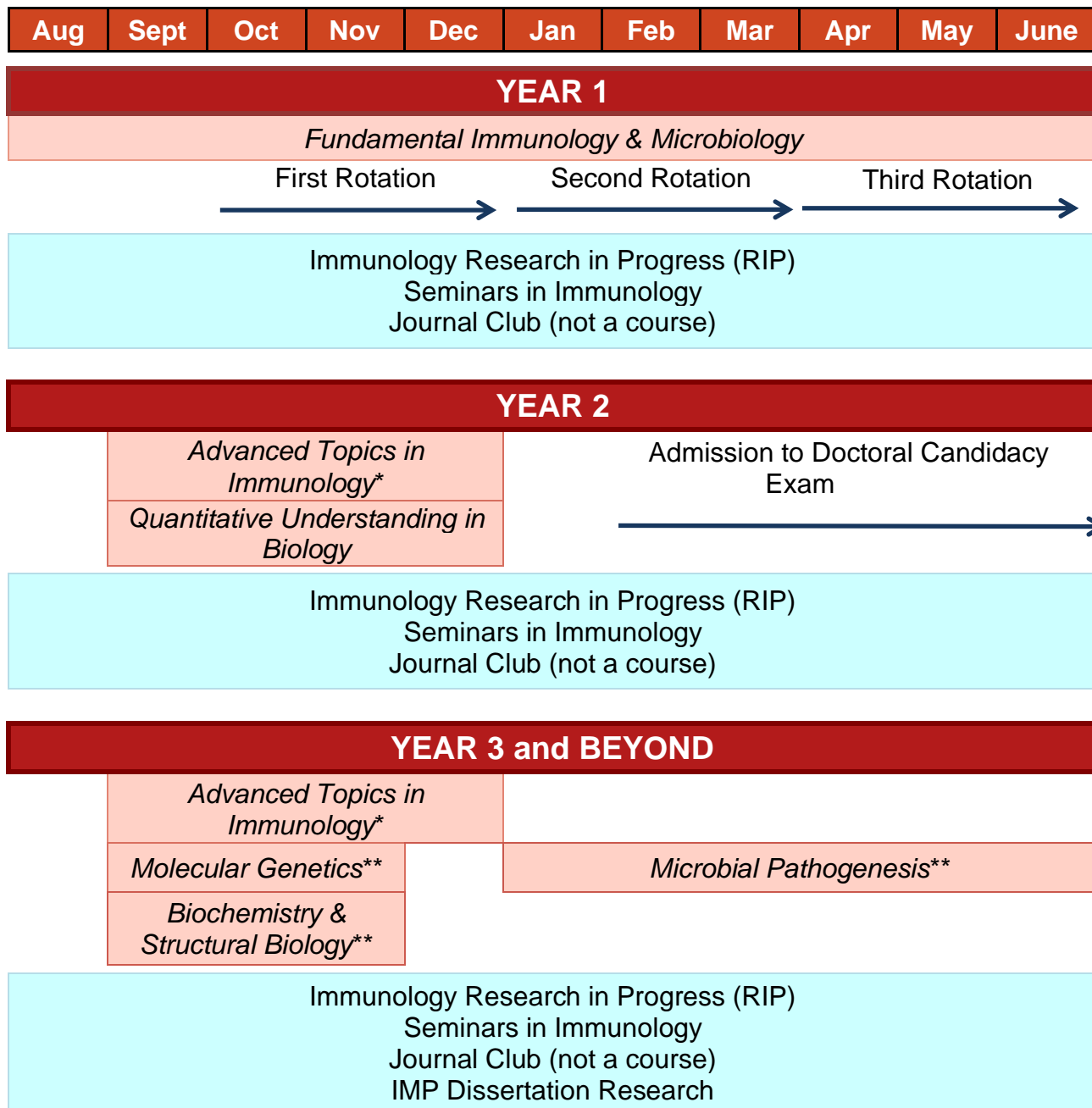
Formal progress report must be filed with the Graduate School annually. To meet this requirement, students are expected to meet once a year with the Special Thesis Committee and complete the **Thesis Committee Meeting Evaluation** form via Learn. Students must launch the form via Learn and have it completed by the Major Sponsor and Committee chair within a week after the meeting. Inform the program coordinator once the form is completed.

4. IMP ANNUAL SCIENTIFIC RETREAT

The IMP Scientific Retreat is held yearly in the third week of October. This year we will host the retreat on October 22, 2021 at the Manhattan Center Memorial Sloan Kettering Cancer Center, NYC. This event provides an opportunity for faculty, students and postdoctoral fellows to interact with each other on both a personal and professional level.

The two-day event includes a keynote address by an internationally prominent scientist (This year's keynote speaker will be Dr. Miriam Merad a professor in Cancer immunology and the Director of the Precision Immunology Institute at the Icahn School of Medicine at Mount Sinai in New York City, NY), lectures on a variety of topics and poster presentations by graduate students and postdocs. Ample time is set aside for recreational activities.

IMP ACADEMIC TIMELINE



* Different modules are offered every Fall. At least **ONE** module must be taken before the ACE and **TWO** additional modules must be taken in subsequent years.

** Either one of these courses may be substituted for one module of Advanced Topics in Immunology after passing the ACE.

ADVANCEMENT TO CANDIDACY

Students will be advanced to PhD candidacy after all the IMP program requirements, advance coursework and Admission to Candidacy exam (ACE) have been successfully completed. Students who leave the program after passing their ACE are eligible for the terminal Master's degree with the approval from the Program Directors, PI and Graduate School.

1. ADMISSION to CANDIDACY EXAMINATION (ACE)

Only students who have successfully completed the Fundamental Immunology & Microbiology course **AND** at least one module of Advanced Topics in Immunology are eligible to take the ACE. Students are strongly encouraged to read successful NIH grant applications as preparation for the ACE and to take advantage of the Advanced Topics in Immunology modules to practice developing specific aims and experimental designs.

The ACE consists of three parts:

- 1) Topic/Specific Aims submission and approval (by the ACE assigner)
- 2) The Written Examination, (evaluated by the student's assigned ACE committee).
- 3) The Oral Examination

The Oral Examination must be completed no later than **June 30th** of the second year of graduate training. Students who do not take the oral exam by June 30th are placed on academic probation for 3 months, except in extenuating circumstances as approved by the Dean of the Graduate School, upon request from the Program Director.

The goal of the ACE is two-fold. First, the ACE provides an excellent opportunity for each student to expand their knowledge of an area of science, with the guidance of the faculty. The ACE can be seen as a transitional process in which the student adapts their thinking from a more passive mode of classroom learning to the more active, engaged, but less structured process of scientific investigation. The ACE serves both as a test of, and introduction to, these skills.

Second, the ACE is an important tool for the IMP program to assess the suitability of each student to pursue the PhD degree. It is not a given that a student admitted to the program based on outstanding academic qualifications who has completed, or even thrived during, the didactic training of early graduate school will be capable of completing a dissertation. The laboratory phase of the PhD degree requires distinct skills: creativity, critical thinking, and intense engagement, which may not be rigorously tested in the classroom. The ACE process allows the IMP program to assess these skills in each student before admitting them to PhD candidacy.

The ACE will evaluate each student's:

- Ability to think independently.
- Ability to think critically.
- Ability to explain and understand the present status, direction and significance of the chosen ACE topic.
- Ability to generate novel hypotheses and to design appropriate experiments that address these hypotheses.
- Ability to interpret and evaluate experimental data.
- Fund of general knowledge.

The ACE will provide the means for the student to:

- Exercise independence in study design.
- Study in depth, a subject of particular interest or value to them.
- Develop a research plan in the format of an NIH grant application (R21 style).
- Practice scientific writing skills.
- Be involved in scientific discussions with several faculty members outside the thesis lab.
- Receive critical feedback.

As restated for emphasis and clarity, success in the ACE is contingent on the student demonstrating (1) independence of thought, (2) creativity and skill in design of experimental approaches to (3) ability to identify a problem of scientific interest that could advance the field.

A. ACE Assigner

The Assigner, an IMP faculty member appointed by the Program Co-chairs (Dr. Michael Glickman presently), will meet with students in early January to discuss the ACE format and answer questions one month prior to the topic submission deadline. At this time, each student is encouraged to begin choosing an appropriate topic and develop it into a formal specific aims page.

Once the Assigner approves the outline, based on the criteria outlined below, the Assigner will designate an ACE Committee composed of three faculty members from the IMP Program or, if necessary, from another program. In addition, the Assigner will designate one of the committee members as the Chair of the Examining Committee to maintain consistent guidelines and expectations for both examinations.

B. ACE Topic Choice

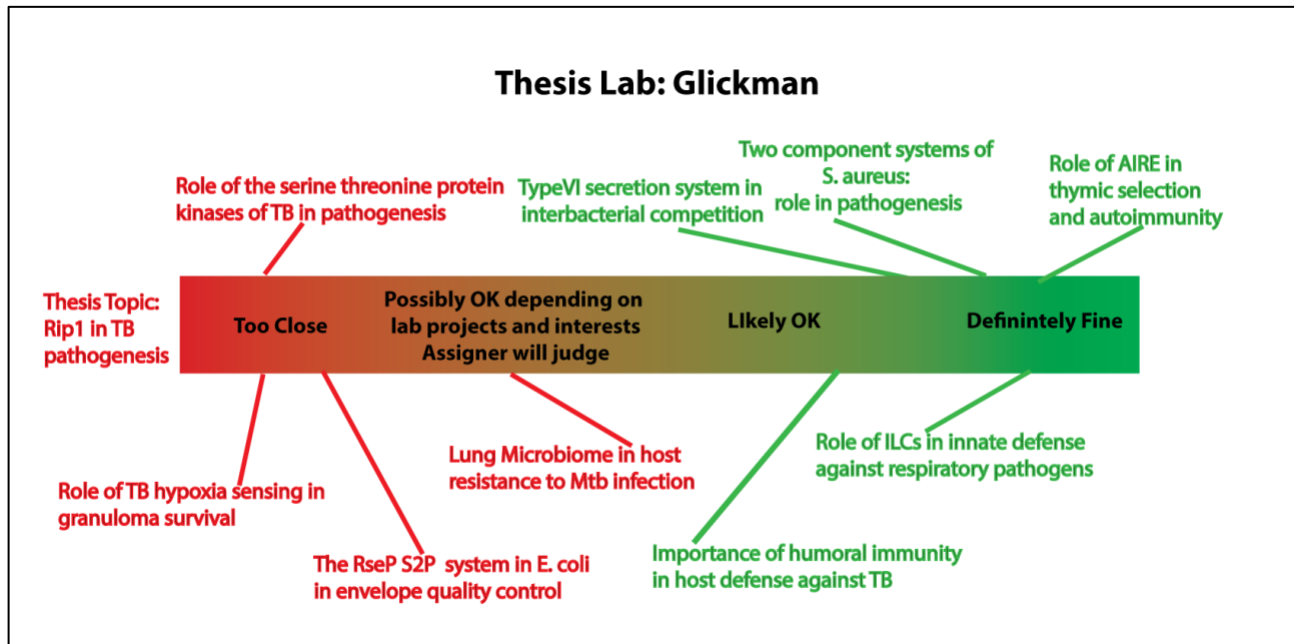
The topic is chosen by the student within a set of guidelines established by the IMP program. It is the student's privilege to have flexibility and latitude in choice of the ACE topic. However, it is the student's responsibility to choose a topic that will convincingly demonstrate independence of thought. Here are several principles that should guide your choice of ACE topic, and will guide the approval of your ACE topics, with illustrative examples.

1) The student cannot use their thesis project, any area of study within the thesis laboratory, or any active project within the IMP program, for their ACE topic. Although we are aware that some programs give the option of this type of topic, we do not believe that such topics allow the student to demonstrate independence of thought and creativity. Topics that are close to the thesis project, or to the thesis lab's area of interest, are likely to contain a large portion of received wisdom and content from the PI and lab colleagues. In these circumstances, it is difficult to evaluate the student's contribution to the Aims, as similar ideas are likely circulating in the lab. We recognize that an R21 style grant on the thesis topic has certain benefits, most prominently the opportunity to research the thesis project in depth. Thus, we strongly encourage students who successfully complete the ACE to embark on writing an ACE style document on their thesis project to prepare them for their dissertation and F award submission. The initial thesis committee meeting is an ideal time to prepare and discuss such a document.

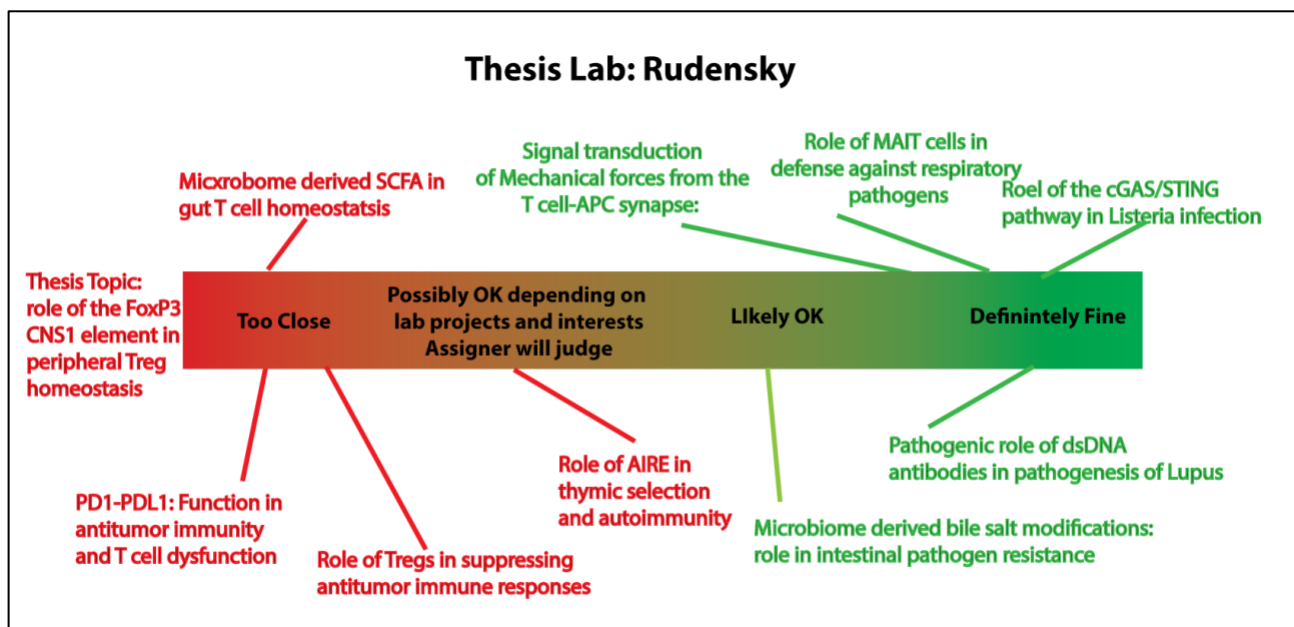
2) Using the principles outlined in #1, the ACE Assigner will evaluate the appropriateness of the chosen topics. In thinking about topic choice, the students should consider a spectrum of relatedness to their thesis lab and choose a point on this spectrum that is clearly distinct from their thesis lab. To assist the students with this choice, we have constructed three theoretical thesis lab/thesis project combinations with theoretical ACE topics. In each example, the thesis lab is at the top, the thesis project is on the left of the spectrum and along the spectrum are potential topics with varying degrees of relatedness to the thesis project/lab. The closer you are to the left side of the spectrum,

the greater the scrutiny that will be applied. It is impossible to present specific rules about which topics are “too close” given the wide range of possible topics. Every topic will be judged independently by the ACE assigner.

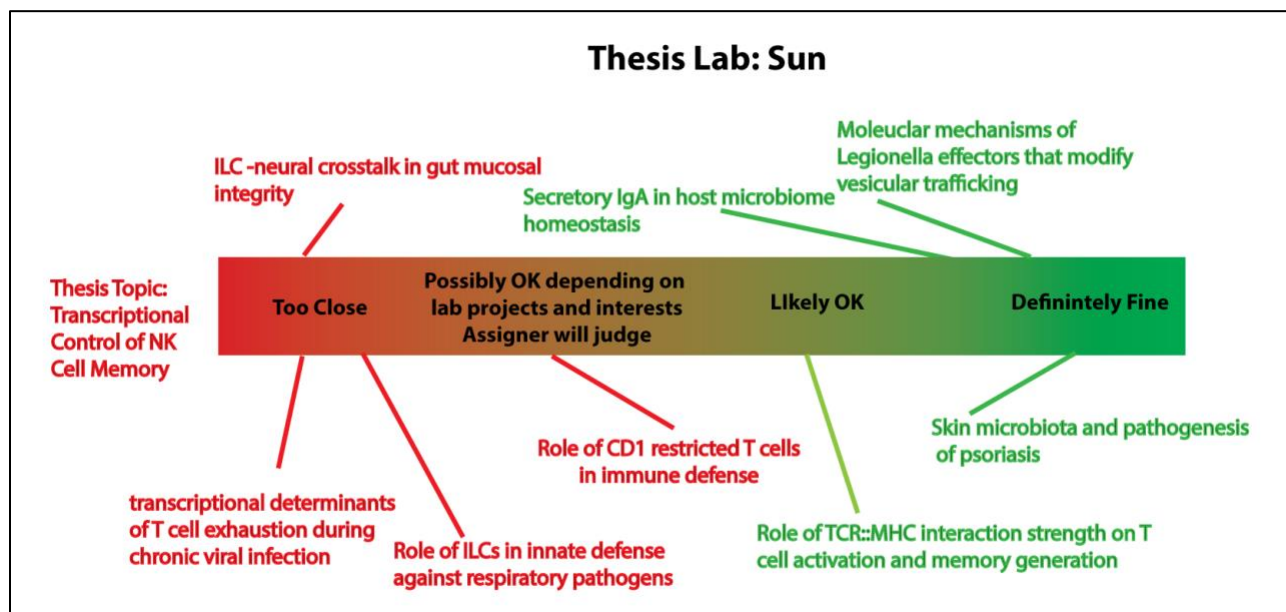
Example 1:



Example 2:



Example 3:



As one criterion used by the Assigner to evaluate the appropriateness of the chosen topic, the PI will be asked to certify that the work proposed by the student is not derivative of past or current work in that laboratory. Along with the topic submission, students must include the name of his/her thesis advisor, and a one paragraph description of their thesis project.

C. Composition of the ACE Committee

The ACE committee for each student will consist of at least 3 faculty members. The IMP program will maintain a dedicated set of faculty to serve on ACE exams. These “ACE examiner” faculty will rotate among the IMP faculty to assure equal workload over time. Each ACE committee will consist of three “ACE examiner” faculty or 2 ACE examiner faculty and one Ad hoc member, all chosen by the ACE assigner. The composition of the “ACE assigner” pool is not distributed to the students. A student has the right to petition with cause for replacement of a committee member in case a personal conflict exists between them. Such requests should be submitted to the ACE assigner.

D. Format

By **February 1st**, student must submit an outline of his/her proposed research topic to the ACE Assigner in the form of a Specific Aims page. The outline should specify no more than 3 specific aims and should not exceed **one page**, exclusive of up to five key references on the second page if necessary. The synopsis should include a brief description of the system to be studied, the question/hypothesis/model to be tested and the experimental approaches under consideration. Good topic choices will be timely, original, conceptually important and mechanistically decipherable. Students will be informed by the ACE Committee of the approval of their choice of topic/aims in ten days or less. If it is not approved, students will have two weeks to submit revised SA.

E. Written Proposal/Examination

Students will have approximately **four weeks (specific dates to be provided to students at the organizational meeting noted above)** to submit their written proposal to the ACE Examining Committee once the topic/aim is approved by the ACE assigner and the ACE committee. The R21-style written proposal should not exceed six pages (exclusive of aims page and references) and must be the work of the student alone. The student may seek any advice they wish, but neither from their ACE Committee nor their thesis mentor.

Primary, secondary and tertiary reviewers will be assigned from the ACE Committee, all of whom will read and rate the proposal. The ACE Committee will have 2 weeks to review the student's written proposal and recommend "Approval" or "Revision/Disapproval" of the proposal. All ACE reviewers will prepare a written critique that includes strengths and weaknesses.

Approval of the written exam means that the student can proceed to the oral exam, but does not preclude that the student may be asked to revise the written proposal if the oral exam is tabled. Revised proposals, when requested (i.e. Revision/Disapproval), must be submitted to the Assigner and committee no later than two weeks after receipt of the critique. The revised proposal should include a preface section that briefly summarizes how the points raised in the critique have been rectified. If the revised proposal is disapproved again by the ACE Committee, it is tantamount to a failing grade for the student. The student should be aware that additional questions about the written proposal, including but not limited to those raised in written critiques (for both approved and revised proposals), **will** arise at the oral exam. The student should prepare accordingly.

Formatting Instructions:

- **Font:** Use an Arial typeface with a font size of 11 points or Times New Roman typeface with 12 points.
- **Spacing:** Single-spaced for all pages.
- **Margins:** Use US Letter size (8.5" X 11") and one inch margins (top, bottom, left and right) for all pages. Each page must have your name and be numbered.
- **Figures:** Must be included within the 6-page limit. Embed figures within the text pages.

Timeline for the ACE*

* This timetable is provided for illustrative purposes only.

NB

- Two times Topic/Aims "Disapproval" is equivalent to "FAIL"
- Two times written proposal "Disapproval" is equivalent to "FAIL"
- Two times Oral Exam "Table" is equivalent to "FAIL"

Track #1 (Topic/Aims & Proposal Approved)	Track #2 (Topic/Aims Approved & Proposal Disapproved)	Track #3 (Topic/Aims Disapproved; Proposal Approved)	Track #4 (Revised Topic/Aims Approved & Proposal Disapproved)
February 1 Topic/Specific aims due by email PDF to glickmam@mskcc.org Subject line: Student Name: ACE Aims. e.g. Michael Glickman: ACE Aims All dates below are			
February 8 Committee notifies student – aims approved. Student is notified of ACE committee composition	February 8 Committee notifies student – aims approved, student is notified of ACE committee composition	February 8 Committee notifies student – aims rejected	February 8 Committee notifies student – aims rejected
		February 15 Revised aims due	February 15 Revised aims due
March 11 Full written proposal due Email PDF to all ACE committee members and glickmam@mskcc.org Subject line: Student Name: ACE Written Proposal	March 11 Full written proposal due	February 22 Committee notifies student – revised aims approved	February 22 Committee notifies student – revised aims approved
March 25 Committee notifies student – proposal approved	March 25 Committee notifies student – proposal rejected	March 25 Full written proposal due	March 25 Full written proposal due
First ACE oral exam period is April 11-22 Student will be assigned to a time slot for oral ACE in this period. You must be available for your ACE in this period.	April 8 Revised written proposal due	April 8 Committee notifies student – written proposal approved	April 8 Committee notifies student – written proposal rejected
By April 12 Oral Exam done	April 18 Committee notifies student – revised written proposal approved	First ACE oral exam period is April 11-22 Student will be assigned to a time slot for oral ACE in this period. You must be available for your ACE in this period.	April 18 Revised written proposal due
	Second ACE oral exam period is May 2-13		April 27 Committee notifies student – revised written proposal approved Second ACE oral exam period is May 2-13

F. Oral Examination

Scheduling:

Students are not responsible for scheduling the oral exam. The ACE timelines given above include two “oral exam periods” of two weeks each. 2-hour ACE schedule slots will be available in each of these weeks and students will be assigned to these slots. It is strongly recommended that students practice their oral presentation with an audience consisting of students who have passed the ACE. Examination of the timeline above shows that the interval between final written ACE approval and the oral exam may be short. It is therefore advisable for the student to prepare for the oral before hearing about the written exam result.

Oral Exam Format and Structure:

Immediately prior to the exam, all committee members and the thesis advisor should be present for the initial evaluation of the student's written proposal, laboratory and classroom performance; the student should not be present during this discussion. Following the discussion of the student's progress, the thesis advisor will be excused and the student will be invited to present the key features of the research proposal. Students are often interrupted for questioning during their presentations and frequently do not complete their entire presentation. The substance of the presentation will be oriented around the content of written proposal. However, fundamental knowledge relevant to the proposal may also be tested and will contribute to the pass/fail decision. When the oral presentation has concluded, the student will be excused to allow the committee to discuss the exam performance and vote. The committee may vote on one of the 3 possible outcomes:

- **APPROVAL (Pass)** – A “Pass” signifies satisfactory completion of the candidacy exam.
- **TABLE** – “Table” will entail some follow up oral exercise for the student to address the ACE committee's remaining concerns.
- **FAIL** – Student will be referred to the Student Evaluation Committee (SEC) for consideration in light of the student's overall academic performance. **In such cases, the SEC can recommend that the student either be allowed to re-take the oral examination or asked to leave the program.** The student will only be permitted one retake of the Oral Exam, within a time frame that is reasonable and acceptable to all parties involved.

Continuing Education

If a student has demonstrated a generally sound understanding of important principles during the ACE, but has a weakness in one or more areas, the ACE Committee may pass the student with the provision that the weaknesses should be readdressed by taking one or more courses. This is termed a “Conditional Pass”.

The development of the scholarship and research abilities of senior students is the responsibility of both the Examination Committee that conducts the ACE and the Thesis Special Committee. Either of these committees can make recommendations or impose requirements on the student beyond the general requirements of the Graduate School and the educational standards outlined by the Graduate Program in Immunology.

These requirements may include formal courses, upper level seminar style courses, undertaking an independent reading course supervised by a faculty member, participation in seminars and poster sessions requirements to give talks in formal or informal seminar series, etc. These types of activities are often voluntarily undertaken by students because of their desire to strengthen their abilities, but it is the responsibility of the Thesis Committee to ensure that the student is well prepared for their future career.

While completing thesis work, students are expected to continue to attend seminars and are strongly encouraged to take or audit graduate courses to continue their education and broaden their knowledge of Immunology and related disciplines.

2. FINAL EXAMINATION (THESIS DEFENSE)

IMP students are expected to defend and complete all requirements for the PhD degree within six years after matriculation in the PhD program. Exceptions must be reviewed and approved by the Program Director, Co-Chairs and Dean of the Graduate School.

Students should read the guidelines and instructions for the Final Examination and the Student Exit Checklist on the Graduate School website. Failure to complete the steps detailed on the respective documents on the WCGSMS website will result in a delay of your degree conferral.

It is the student's responsibility to schedule a mutually agreeable date and time with the Examining Committee for both the public lecture and closed section for the oral defense.

A. Process Timeline

- Students must submit the ***Application for Final Examination*** form **30 days** before the scheduled defense.
- Two weeks** prior to the examination, the ***Approval for Thesis of Defense*** form must be submitted to the Graduate School Office. The Examining Committee must sign and attest that the thesis is ready to be examined.

B. Dissertation Deposit

For thesis formatting guidelines, students should read the ***Doctoral-Master's Thesis Requirements*** on the WCGSMS (Student Forms) website.

The dissertation may be deposited at any time during the year, but the following deposit deadlines determine the date of the degree. Please note that these dates differ from year-to-year.

Degree Conferral Date:	Thesis Must be Submitted and Approved by Noon:
August 31, 2021	August 13, 2021
December 31, 2021	December 3, 2021
May 19, 2022	May 6, 2022
TBD	TBD

GRADUATE SCHOOL REQUIREMENTS

All PhD and MD/PhD students are required to fulfill the following requirements for the PhD degree on a yearly basis throughout your graduate training:

1. Annual Evaluation Meeting (First Year PhD Students)

All **First-Year** students are required to complete the Annual Students Evaluation and the NIH-mandated Individual Development Plan (IDP) by the end of first year. Each student must meet with the designated IMP faculty (usually the Program Director) and completed both forms by **June 30th**.

2. Thesis Committee Meeting (All PhD and MD/PhD Students)

Students are required to meet with his/her Thesis Committee within 6 months of completing the ACE, and subsequently once a year. The Graduate School requires all students to meet with the Thesis Committee at least once a year throughout their graduate training. The IMP program encourages more frequent meetings. To meet this requirement, students are expected to complete the ***Thesis Committee Meeting Evaluation*** form and return the signed form to the Program Coordinator.

Timely meetings are imperative and students should take the initiative in scheduling these meetings. When a student fails to have a Thesis Committee meeting for more than 12 months, he/she is considered to be in poor academic standing.

3. Individual Development Plan (IDP) (Rising Third Year and Beyond)

The Graduate School requires an annual NIH-mandated IDP for all PhD students. The IDP aims to assist students with identifying professional goals and objectives. It also aims to ensure that students are working proactively towards developing the skills and competencies needed to achieve short and long-term career goals.

The IDP process should be completed every year in the beginning of each academic calendar (July 1st) no later than **August 15th**.

4. Progression to Degree (Rising Sixth Year and Beyond)

Students in their **sixth year and beyond** must complete the ***Progression to Degree*** form with his or her PI every year in the beginning of each academic calendar (July 1st) in conjunction with the Individual Development Plan (IDP). The deadline to submit the signed Progression to Degree form is **August 15th**.

IMP GENERAL POLICY

1. Changing Programs or Thesis Labs

IMP students are encouraged to perform their thesis work in the laboratory of a faculty member of the Immunology Program. Thesis work in a laboratory within other Graduate School Programs is permitted with approval of the IMP Program Directors.

Students in good standing in a program other than Immunology and Microbial Pathogenesis (IMP) can transfer to the IMP Program provided that certain requirements are fulfilled. The terms of the transfer are to be discussed with the Program Directors of both the original program and the IMP Program. In addition, the transfer requires formal approval from both Program Directors and the Associate Dean for Program Development. Students changing into the IMP Program will be required to complete the Fundamental Immunology course, as well as additional Immunology courses as determined by the Program Directors.

2. Publication Policy

When you are listed as an author on a publication or abstract, please be sure to acknowledge your WCGS Program. For example: "<student name> is a member of the Pharmacology Graduate Program, Weill Cornell Graduate School, New York, NY." Of course, acknowledging membership in your mentor's department/center/institute is also appropriate. Also, if you have received T32, F31, NSF, or other individual funding that should be acknowledged.

3. Vacation Policy

Students are expected to inform the PI or the rotation advisor of all proposed and planned absences so that the flow of experimental work can be planned in advance. Attending scientific meetings and days explicitly taken off for study and preparation for examinations do not count as vacation days.

In the event of an unanticipated absence, students should make every effort to communicate with the PI, Program Directors and/or Graduate School as soon as possible. Any unexplained absence will constitute lack of satisfactory progress in the Program and can result in academic probation.

NB It is important that you read the ***Code of Legislation of the Weill Cornell Graduate School of Medical Sciences*** for Graduate School guidelines and policy (especially page 9 - 15). This document can be found on the WCGSMS (Student Forms).

ACADEMIC PROGRESS CHECKLIST

❖FIRST YEAR

Course Registration:

- ☐ Fundamental Immunology & Microbiology (IAMP.9010) – Year-long course
- ☐ Immunology Research in Progress (IAMP.9530)
- ☐ Seminars in Immunology (IAMP.9002)
- ☐ Responsible Conduct in Research – RCRP 9010 01 (fall); RCRP 9010 03 (spring)
- ☐ Advanced Topics in Immunology (IAMP.9505.01; IAMP.9527.02) - Optional

You must register for all Lab Rotations (refer to page 6 for set deadlines)

- ☐ Complete **Annual Student Evaluation** and **Individual Development Progress** forms at the end of first year (by June 30th)
- ☐ Declare a lab/PI at the end of first year (June 30th)

❖SECOND YEAR

Course Registration:

- ☐ Quantitative Understanding in Biology (PBSB.5005)
- ☐ Immunology Research in Progress (IAMP.9530)
- ☐ Seminars in Immunology (IAMP.9002)
- ☐ Advanced Topics in Immunology (IAMP.9505.01; IAMP.9527.02)– Optional; at least one module must be taken before ACE
- ☐ Molecular Genetics (BCMB.5001) – Optional
- ☐ Biochemistry & Structural Biology (BCMB.5002) – Optional
- ☐ Microbial Pathogenesis – Optional; offered at RU
- ☐ Pre-ACE Research: IMP- (REST 9002)- Fall
- ☐ ACE (ACEX.5001.02.WCM) – Register when ready to take ACE

ACE Preparation (Spring Semester):

- ☐ Submit an official **Application for ACE** form at least **TWO WEEKS** prior to the scheduled oral exam date. The ACE must be completed no later than June 30th

Special Thesis Committee:

- ☐ Assemble thesis committee and submit the **Nomination of Special Thesis Committee** form once you pass the ACE
- ☐ Meet and complete **Thesis Committee Meeting Evaluation** form six months **AFTER** you pass the ACE

❖ **EVERY YEAR THROUGHOUT YOUR GRADUATE TRAINING**

Course Registration:

- ☐ Immunology Research in Progress (IAMP.9530)
- ☐ Seminars in Immunology (IAMP.9002)
- ☐ Dissertation Research (REST 9104) – All post-ACE students
- ☐ Responsible Conduct in Research – (Offered in the Fall/Spring) – 5th years are required to take a RCR refresher

PhD Degree Requirements:

- ☐ **Annual Thesis Committee Meeting** – Must meet with thesis committee and complete ***Thesis Committee Meeting Evaluation*** form once a year throughout your graduate training
- ☐ **Individual Development Plan (IDP)** - The IDP process should be completed once a year at the beginning of each academic calendar prior to August 15th
- ☐ **Progression to Degree** – Students in sixth year and beyond must complete the ***Progression to Degree*** form every year in conjunction with the IDP prior to August 15th

IMP FACULTY

TITLE	LAST NAME	FIRST NAME	E-MAIL	PHONE	OFFICE LOCATION
Assistant Professor	Anandasabapathy	Niroshana	Nia9069@med.cornell.edu	646-962-3367	BRB-920
Professor	Artis	David	dartis@med.cornell.edu	646-962-6291	BRB-724
Professor	Barrat	Franck	barratf@hss.edu	646-797-8452	S-803
Professor	Blander	Julie	jmblander@med.cornell.edu	646-962-6741	BRB-728
Assistant Professor	Brown	Chrysothemis	brownc10@mskcc.org	646-888-2707	ZRC-802
Professor	Cesarman	Ethel	ecesarman@med.cornell.edu	212-746-8838	C-410A (WMC)
Professor	Chaudhuri	Jayanta	chaudhuj@mskcc.org	646-888-2344	ZRC-1464
Professor	Chen-Kiang	Selina	sckiang@med.cornell.edu	212-746-6440	C-338 (WMC)
Professor	Crow	Mary	crowm@hss.edu	212-606-1397	S-703
Assistant Professor	Cubillos-Ruiz	Juan	jur2016@med.cornell.edu	212-746-1323	E-903 (WMC)
Professor	Ehrt	Sabine	sae2004@med.cornell.edu	646-962-6215	BRB-1102
Professor	Fearon	Douglas	dof2014@med.cornell.edu	646-962-6287	BRB-1320
Professor	Geissman	Frederic	geissmaf@mskcc.org	646-888-3332	ZRC-1560
Professor	Glickman	Michael	glickmam@mskcc.org	646-888-2368	ZRC-1504
Assistant Professor	Guo	Chun-Jun	Chg4001@med.cornell.edu	213-880-8216	BRB-720
Assistant Professor	Hanash	Alan	hanasha@mskcc.org	646-888-3437	ZRC-703
Associate Professor	Hohl	Tobias	hohlt@mskcc.org	646-888-3596	ZRC-1603
Professor	Huse	Morgan	husem@mskcc.org	646-888-2379	ZRC-1662
Associate Professor	Iliev	Iliyan	ili2001@med.cornell.edu	646-962-7236	BRB-718
Professor	Ivashkiv	Lionel	ivashkivl@hss.edu	212-606-1653	S-801
Assistant Professor	Josefowicz	Steven	szj2001@med.cornell.edu	212-746-2074	E-904 (WCM)
Associate Professor	Jones	Richard Brad	rbjones@med.cornell.edu	617-777-9151	BRB-526
Professor	Koretzky	Gary	gak2008@med.cornell.edu	212-746-1361	A-125 (WCM)
Professor	Li	Ming	lim@mskcc.org	646-888-2371	ZRC-1664
Associate Professor	Longman	Randy	ral2006@med.cornell.edu	212-746-6023	BRB-714
Professor	Lu	Theresa	lut@hss.edu	212-774-2532	S-704
Professor	Ma	Xiaojing	xim2002@med.cornell.edu	212-746-4423	BRB-1128
Professor	Melnick	Ari	Amm2015@med.cornell.edu	646-962-6725	BRB-1430
Professor	Nathan	Carl	cnathan@med.cornell.edu	212-746-6505	B-309 (WCM)
Professor	Pernis	Alessandra	pernis@hss.edu	212-606-1612	S-802
Assistant Professor	Perry	Justin	perryj@mskcc.org	646-888-3928	ZRC-1501
Professor	Pascual	Virginia	vip2021@med.cornell.edu	646-962-6248	BRB-1230
Associate Professor	Rhee	Kyu	kyr9001@med.cornell.edu	646-962-6224	BRB-1130
Professor	Rogatsky	Inez	rogatskyi@hss.edu	212-606-1462	S-705
Professor	Rudensky	Alexander	rudenska@mskcc.org	646-888-3109	ZRC-1460
Associate Professor	Sadelain	Michel	m-sadelain@mskcc.org	212-639-6190	S-1041A (SKI)
Professor	Salmon	Jane	salmonj@hss.edu	212-606-1421	S-701
Associate Professor	Schietinger	Andrea	schietia@mskcc.org	646-888-3754	ZRC-1663

TITLE	LAST NAME	FIRST NAME	E-MAIL	PHONE	OFFICE LOCATION
Professor	Shuman	Stewart	s-shuman@ski.mskcc.org	212-639-7145	RRL-801C
Associate Professor	Sonnenberg	Gregory	gfsonnenberg@med.cornell.	646-962-6290	BRB-712
Professor	Sun	Joseph	sunJ@mskcc.org	646-888-3228	ZRC-1462
Professor	Thompson	Craig	thompsonc@mskcc.org	212-639-6561	RRL-401
Assistant Professor	Vardhana	Santosha	vardhans@mskcc.org	646-888-2706	ZRC-803
Professor	Vartanian	Timothy	tiv2002@med.cornell.edu	646-962-3242	Y-244
Professor	Van den Brink	Marcel	vandenbm@mskcc.org	646-888-2304	ZRC-1404
Professor	Wolchock	Jedd	wolchokj@mskcc.org	212-888-2315	ZRC-1503
Professor	Worgall	Stefan	stw2006@med.cornell.edu	646-962-6236	BRB-1202A
Professor	Xavier	Joao	xavierJ@mskcc.org	646-888-3195	ZRC-1162
Assistant Professor	Zeng	Melody	myz4001@med.cornell.edu	646-962-9791	BRB-1252

BRB Belfer Research Building (413 E 69th Street)
RRL Rockefeller Research Laboratories (430 E 67th Street)
S HSS Research Institute (515 E 71st Street)
WCM Weill Cornell Medicine (1300 York Avenue)
ZRC Zuckerman Research Center (417 E 68th Street)

IMP STUDENTS

YEAR of ENTRY	LAST NAME	FIRST NAME	E-MAIL	LAB PHONE	PI
2014	Adefisayo	Oyindamola	oya2001@med.cornell.edu	646-888-2360	Glickman, M
2018	Ahimovic	Dughan	dja4001@med.cornell.edu	212-746-2074	Josefowicz, S
2015	Antonelli	Anthony	ana2065@med.cornell.edu	646-888-2360	Glickman, M
2014	Argueta	Lissenya	lia2015@med.cornell.edu	212-746-4945	Stuhlman, H
2020	Bah	Mamadou	mab4025@med.cornell.edu	646-888-2585	Wolchok, J
2020	Bale	Michael	mib4004@med.cornell.edu	212-746-2074	Josefowicz, S
2020	Balmuth F	Evan	eab4002@med.cornell.edu	646-962-3242	Vartanian, T
2017	Bansal	Harmanjit	hsb2002@med.cornell.edu	646-962-6219	Ehrt, S
2016	Batchelder	Jake	jeb2064@med.cornell.edu	646-962-6894	Blanchard, S
2021	Beroshvili	Giorgi	gib4004@med.cornell.edu		TBD
2017	Bourne	Christopher	cmb2011@med.cornell.edu	646-888-2190	Schienberg, D
2018	Bou Puerto	Regina	reb4002@med.cornell.edu	646-888-3160	Rudensky, A
2020	Callaghan	Ryann	ryc4003@med.cornell.edu	646-888-3932	Diehl, G
2021	Carrow	Hannah	hac4009@med.cornell.edu		TBD
2019	Chang	Winston	wyc4002@med.cornell.edu	646-888-3437	Hanash, A
2020	Chen	Amanda	amc4011@med.cornell.edu	646-888-3932	Diehl, G
2015	Chen	Xi	xic2014@med.cornell.edu	646-888-3772	Geissmann, F
2017	Cheong	JinGyu	jic2016@med.cornell.edu	212-746-2074	Josefowicz, S
2015	Chowdhury	Priyanka	prc2007@med.cornell.edu	646-888-2344	Chaudhuri, J
2017	Daman	Andrew	awd2001@med.cornell.edu	212-746-2074	Josefowicz, S
2018	Deep F	Deeksha	ded2018@med.cornell.edu	646-888-3160	Rudensky, A
2021	Emanuel	Elizabeth	ele4003@med.cornell.edu		TBD
2017	Emmanuelli	Alexander	ade2005@med.cornell.edu	212-746-1323	Cubillos-Ruiz, J
2018	Fang	Beibei (Bella)	bef4001@med.cornell.edu	646-888-3160	Rudensky, A
2019	Fiedler	Brooke	bef4002@med.cornell.edu	425-358-1362	Sonnenberg, G
2016	Fernandez	Keith	kcf2003@med.cornell.edu	646-888-2344	Chaudhuri, J
2020	Fisher	Logan	lof4002@med.cornell.edu	646-888-2707	Brown, C
2016	Gao	Hanxing (Iris)	hag2019@med.cornell.edu	646-962-7236	Iliev, I
2021	Ghelani	Aazam	aag4006@med.cornell.edu		TBD
2018	Giovanelli	Paolo	pag2031@med.cornell.edu	646-888-3160	Rudensky, A
2020	Gladstone	Joseph	jog4012@med.cornell.edu	425-358-1362	Sonnenberg, G
2015	Grigg	John "Benji"	jog2042@med.cornell.edu	425-358-1362	Sonnenberg, G
2015	Harris	Chantal	chh2041@med.cornell.edu	518-732-5247	Kafsack, B
2021	Herrera	Alberto	Amh4009@med.cornell.edu		TBD
2018	Horch	Elizabeth	elh4001@med.cornell.edu	646-888-2362	Huse, M

YEAR of ENTRY	LAST NAME	FIRST NAME	E-MAIL	LAB PHONE	PI
2018	Hsu	Joy	joh4005@med.cornell.edu	646-962-9970	Anandasapathy, N
2018	Jaiswal	Abhinav	aaj4001@med.cornell.edu	646-962-9970	Anandasapathy, N
2021	Kang	Jee Hye	Jek4008@med.cornell.edu		TBD
2020	Kim	Dasom	dak4009@med.cornell.edu	646-888-3932	Diehl, G
2017	Kim	Youngjun	yok2018@med.cornell.edu	646-888-2344	Chaudhuri, J
2018	Klevorn	Thais	thk4002@med.cornell.edu	646-962-6219	Ehrt, S
2018	Krebs	Adam	ask4001@med.cornell.edu	646-888-2360	Glickman, M
2019	Lazarov	Tomi	tol4002@med.cornell.edu	646-888-3772	Geissmann, F
2018	Lee	Angela	Aml4001@med.cornell.edu	646-962-6211	Nathan, C
2019	Leyre	Louise	lol4001@med.cornell.edu	212-746-5613	Jones, B
2021	LI	Dayi	Dal4017@med.cornell.edu		TBD
2018	Lin	Woan-Yu	Wol4001@med.cornell.edu	646-358-0637	Iliev, I
2020	Linden	Noemi	nll4001@med.cornell.edu	212-746-5613	Jones, B
2018	Mantel	Ian	ldm4001@med.cornell.edu	212-774-2743	Donlin, L
2020	Marston F	Jez	jlm4001@med.cornell.edu	212-746-8838	Cesarman, E
2021	Matthews	Dean	Dem4008@med.cornell.edu		TBD
2016	Menocal	Laura	lam2038@med.cornell.edu	646-888-3754	Schietinger, A
2016	Metz	Maeva	mlm2011@med.cornell.edu	909-636-6545	Longman, A
2017	Michaels	Anthony	ajm2018@med.cornell.edu	646-888-3160	Rudensky, A
2017	Miller F	Alexandra	alm2076@med.cornell.edu	646-962-6219	Ehrt, S
2018	Mills	Kathleen	Kam4002@med.cornell.edu	646-888-3596	Hohl, T
2018	Mishra	Bikash	Bim4001@med.cornell.edu	212-774-7119	Ivashkiv, L
2020	Miakicheva	Svetlana	svm4001@med.cornell.edu	646-888-3754	Schietinger, A
2020	Mitra	Tanmana	tam4008@med.cornell.edu	646-888-2706	Vandhana, S
2020	Owyong	Mark	mao4007@med.cornell.edu	646-888-3228	Sun, J
2017	Santosa	Endi	ens2003@med.cornell.edu	646-888-3228	Sun, J
2020	Paucar	Yoselin	yop4001@med.cornell.edu	646-888-2707	Brown, C
2021	Qu	Sophia	Soq4001@med.cornell.edu		TBD
2021	Robaina- Caicedo	Brittany	Bmr4001@med.cornell.edu		TBD
2016	Schad	Sara	sas2096@med.cornell.edu	646-888-2585	Wolchok, J
2021	Schochet	Baila	Bas4006@med.cornell.edu		TBD
2019	Singaraju	Anvita	ans4016@med.cornell.edu	212-774-2743	Donlin, L
2020	Shibu	Gayathri	gas2017@med.cornell.edu	646-888-2707	Brown, C
2016	Tran	Diana	dit2009@med.cornell.edu	646-888-2362	Huse, M
2017	Vaccarino Gearty F	Sofia Elena	sog2009@med.cornell.edu	646-888-3754	Schietinger, A
2014	Wang	Xinxin	xiw2012@med.cornell.edu	646-962-6317	Sonnenberg, G

YEAR of ENTRY	LAST NAME	FIRST NAME	E-MAIL	LAB PHONE	PI
2019	Wang	Zhaoquan (Shasha)	zhw4002@med.cornell.edu	646-888-3932	Perry, J

† MD/PhD Student