Immunology Graduate Program

SCHOOL OF MEDICINE

UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

2025-2026 Student Handbook

Last updated: August 21, 2025

https://www.cuanschutz.edu/graduate-programs/immunology/home

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Program Guidelines Disclaimer

As a member of the Immunology PhD Program, you are expected to adhere to all established policies and procedures of the University, the Office of Research Edcuation, the Graduate School and this PhD Program.

CU Anschutz – University Policies https://catalog.ucdenver.edu/cu-anschutz/university-policies/

Office of Research Education https://medschool.cuanschutz.edu/ore/forms-and-resources

Graduate School https://graduateschool.cuanschutz.edu/forms-resources/resources

For any policies, please make sure to review the Graduate School Policies and Procedures.

The Graduate School Course Book by the University of Colorado Anschutz Medical Campus can be found at https://cuanschutz.edu/registrar/catalog

Students are responsible for knowing the procedures, policies and requirements outlined in all these publications.

Program Overview

Welcome to the Graduate Program in Immunology at the University of Colorado Anschutz Medical Campus. This handbook provides information about the Immunology Graduate Program and is designed to complement Graduate School Student policies. Please refer to the Graduate School webpage for specific Graduate School and Office of Research Education policies and procedures.

The material contained within this handbook is as current as possible and describes the Immunology Program specific policies and procedures that ***supersede*** those outlined by the Graduate School. Please be aware that our program continues to evolve. Hence, specific policies may be altered, and material here may not always be current.

This handbook, which includes policies and procedures for the Immunology Graduate Program, is provided to serve as firm guidelines rather than absolute rules. Exceptions may be made in the event of an extenuating circumstance. This handbook does not constitute a contract with the Immunology Graduate Program, the Department of Immunology & Microbiology, or the University of Colorado Denver Anschutz Medical Campus, or Graduate School, either expressed or implied.

The Immunology Graduate Program reserves the right at any time to change, delete, or add to any of the provisions at its discretion with approval from the Program Directors and/or the steering committee members. Any exceptions to the Immunology Graduate Program policies contained herein require approval by the Directors of the Immunology Graduate Program. Additional information can be found at the Program website: https://cuanschutz.edu/graduate-programs/immunology/home

Before the first day of class, all new graduate students should attend the University of Colorado Anschutz Medical Campus orientation. This orientation is mandatory and will provide you with valuable information regarding student insurance, research ethics and animal facility training.

Contact the Immunology Program Administrator, sabrena.heilman@cuanschutz.edu, or the Immunology Graduate Program Directors, beth.tamburini@cuanschutz.edu and ross.kedl@cuanschutz.edu, with any questions.

Office of Research Education - Immunology Graduate Program Team

IMMU Program Co-Director: **Ross Kedl, PhD**

- Email: ross.kedl@cuanschutz.edu

IMMU Program Co-Director: **Beth Tamburini, PhD**

- Email: beth.tamburini@cuanschutz.edu

ORE Program Administrator: **Sabrena Heilman, MBA**

- Email: sabrena.heilman@cuanschutz.edu

Office of Research Education Leadership Team
(located in the Fitzsimons Building, 5th Floor West, Suite W5107)

Angie Ribera: Associate Dean of Research Education, angie.ribera@cuanschutz.edu

- Point of contact for faculty, program, and organizational concerns and planning

Jodi Cropper: Business Services Program Director, jodi.cropper@cuanschutz.edu

- Point of contact for financial and organizational planning concerns and coordination

Morgan Texeira: Program Manager, morgan.texeira@cuanschutz.edu

- Point of contact for program specific concerns and additional point of contact for Program Administrators

Stephen Frazier: Business Service Professional, stephen.frazier@cuanschutz.edu

- Point of contact for ORE administrative concerns, organizational planning and ORE leadership availability

MSTP & BSP Requirements, Direct Admits from BSBT-MIM Track

Students transferring to **Immunology PhD Program** from the Biomedical Sciences (BSP) or Medical Scientist Training (MSTP) programs may have different credit/course requirements (see Appendix 1). Applications for transfer will be evaluated based on thesis lab availability, transcripts, and performance on the preliminary exam (specific to BSP transfers) and in rotation labs. It is important to understand that transfer from either program into the **Immunology PhD Program** depends on an **Immunology PhD Program** training faculty member agreeing to accept the student into her/his lab for their thesis work.

MSTP Students should enter a thesis lab with 27-33 graduate credits, including the Foundations in Biomedical Science course. Some of the MSTP coursework may be substituted for IMMU special topics elective credits. The student is encouraged to work with the IMMU Program Directors on appropriate course substitutions. MSTP students will also have completed/will complete the MSTP Preliminary Course focused on grant writing in Spring term of their transfer year. This course covers F31 grants, but also F30 grants which are specific to dual-degree trainees. Upon completion of the preliminary course, they will be expected to have taken and passed the MSTP Preliminary Exam. This exam will take the place of the basic science PhD programs preliminary exam requirements for continuation in the PhD program. The MSTP administration will review student transcripts and prelim results with the PhD Program Administrator at time of transfer and will confirm that all expected graduate credits have been posted for program review and evaluation.

MSTP students have already selected and been accepted into a thesis lab within the selected PhD program. They will enter the program under this lab's support immediately upon transfer and should not incur charges to the PhD program at any point in training absent the need for gap funding/support. As such please consider this transfer to be equivalent to a second year PhD student. Time to degree is a very important metric for the NIH and the program's T32 grant. MSTPs are expected to complete their PhD training within four years of entering lab. Of course, mitigating circumstances can occur. The MSTP Administration should be alerted to any significant progress concerns which may impact a student's ability to graduate within the expected time frame. This can be accomplished by meeting, email, or committee meeting notes as appropriate.

- MSTP students should contact MSTP Administration to obtain the program specific lab mentor agreement to review lab mentor responsibilities, curriculum requirements and other expectations related to the research portion of training. **MSTP students must have thesis committee meetings every 6 months** regardless of their PhD program. Each MSTP student's thesis committee should have a faculty member representing MSTP. Students should discuss MSTP faculty representation with the Director or Associate Program Director to identify suitable candidates.
- Throughout the Thesis stage of training, MSTPs are required to register for the *Longitudinal Foundations of Doctoring* (FOD) course in 2 terms annually (Fall and Spring). They will enroll in the *Capstone Return-to-Clinics* course in their last year of thesis training, replacing FOD in the spring term. The MSTP mentor is responsible for covering the costs for these courses and agrees to this as part of the MSTP-specific mentor letter.

Direct Admit Students from the BSBT-MIM track

- Students who received their MS degree from the Biomedical Sciences and Biotechnology (BSBT) Microbiology and Immunology Masters (MIM) track at CU-Anschutz and enter the program as a direct admit into a thesis lab have the option of taking the preliminary exam in the summer preceding their fall matriculation into the PhD program as a 1st year student. The written component of the prelim is waived for these students and their written BSBT-MIM MS thesis is accepted in its place. These students are required to take the oral component of the exam and are subject to the same requirements as a traditional 1st year student related to expectations for the preliminary oral exam. If a former BSBT-MIM student who is a direct admit wishes to follow this timeline, they must first consult with the program director and the preliminary exam committee members to determine eligibility and to ensure their inclusion in preliminary exam scheduling.

Curriculum Overview

Registration Process

- Academic Calendars (see The Graduate School calendar)
- Register for Classes (see The Graduate School)
    - All basic science PhD students must register in a minimum of 5 credits (fall and spring semesters), 1 credit of 8990 (summer semester), and anything above the minimum credit level will need approval from faculty mentor.
    - First year students, BSP and MSTP students, along with direct admits, should work with the IMMU program directors, program administrator, and faculty mentors as there may be additional credit requirements associated with their progress in the program.
    - The paying of tuition, fees and student health insurance occurs the week following the deadline for that semester's add/drop period, which can be found on the academic calendar
        - The Program Administrator will complete the process of submitting the appropriate form to the Bursar's Office.
        - For those students receiving financial aid, please work with the Program Administrator to avoid any disruption in aid awarding.
- Residency
    - Per University policy, it is required that students begin the process of establishing their residency as soon as they accept their offer to join the IMMU PhD program. This process must be started promptly to ensure you meet the necessary deadlines by the end of your first year. For more information, please visit the University website.

Year 1

FALL SEMESTER		
Course Title	**Registration Information**	**Credits**
Foundations in Biomedical Science	BMSC 7806	6
Core Topics in Biomedical Sciences – **A** (*student is **required** to take **Inflammation** course)*	BMSC 7810	2
Core Topics in Biomedical Sciences – **B** (*student may select topic of their choice*)	BMSC 7810	2
Statistics for Basic Sciences	IMMU 6310	2
Rotation 1	IMMU 7650 (sec 001)	1
Rotation 2	IMMU 7650 (sec 002)	1
SPRING SEMESTER		
Course Title	**Registration Information**	**Credits**
Immunology	IMMU 7662	6
Rotation 3	IMMU 7650 (sec 001)	1
SUMMER SEMESTER		
Course Title	**Registration Information**	**Credits**
Doctoral Thesis	IMMU 8990 (sec 0V1)	1
Research (Pre-Comps) – only if instructed to register in 7650	IMMU 7650	3

- **Lab Rotations**

  Students must complete three rotations in different Immunology faculty laboratories within the first year (Fall through Summer). Each rotation is typically 12 weeks long and 1 credit hour. Your work in this rotation is evaluated and graded. To arrange a rotation, each student should discuss potential projects first with the prospective advisor(s) and the student and advisor should come to a mutual decision. Direct Admit students will not rotate through labs and will spend their laboratory work time in their mentor's lab.

  2025-2026 Rotation Schedule

First rotation	Augst 25, 2025 - November 14, 2025
Second Rotation	November 17, 2025 - February 20, 2026
Third Rotation	February 23, 2026 - May 15, 2026

  Students must inform the Program Administrator of the faculty lab in which rotations will be conducted at the beginning of each rotation timeline to ensure proper tracking and progress.

  Because these rotations are the primary means for each student to become acquainted with the range of techniques, scientific interests, administrative styles, and personalities of each lab, the selection of a rotation lab each semester should be a systematic process. Another major goal of the rotation is to enable a student to select their thesis lab. Therefore, a student may only perform rotations with faculty who have regular appointments in the Graduate School. If a student wishes to rotate in a laboratory of a faculty member with a special appointment in the Graduate School, then a co-mentor with a regular appointment must be chosen. Rotations with faculty who are not members of the Immunology Graduate Program must be approved by the program director(s). ***Students must seek the advice of the Program Directors (Ross Kedl or Beth Tamburini) and/or First Year Student Advisory Committee student advisor (James Scott-Browne, Marijke Keestra-Gounder, or Andrew Getahun) when considering potential laboratory rotations.***

  The other purpose of the rotation is so that faculty can assess and gauge the student's ability, engagement and enthusiasm for research. Thus, these rotations provide information to the faculty and enable them to determine whether they would accept the student into their laboratory for thesis work.

  NOTE: IT IS THE STUDENT'S RESPONSIBILITY TO PERFORM WELL DURING THESE ROTATIONS SO THAT THEY CAN NOT ONLY IDENTIFY LABORATORIES THAT THEY ARE INTERESTED IN, BUT ALSO IMPRESS FACULTY SUFFICIENTLY SO THAT THE FACULTY MEMBER IS WILLING TO SERVE AS THEIR MENTOR. ***ENTRANCE INTO A THESIS LAB IS NOT GUARANTEED. IT IS THE STUDENT'S RESPONSIBILITY TO FIND A THESIS LAB AND FACULTY ADVISOR.***

  At the completion of each rotation, each student is expected to present a short talk in their respective lab meeting, summarizing the experimental problem addressed, the techniques used to approach it, and data obtained during the rotation. This information will also be presented to the program at large during post-rotation talks with cohort members. The rotation advisor must complete the online ORE Milestone Rotation assessment of the student's performance after the rotation and should discuss the assessment with the student. The assessment will be saved online as part of the student's academic record.

ORE Milestone Rotation Request form to be used when first year students have identified their rotation mentor. Please follow Program specific guidelines, including the submission deadline. Three forms will be submitted throughout the academic year, one for each rotation.

Outlined below are the steps of the automated form process, and the bold steps will be completed by the student.

1. **Students initialize the process by selecting the mentor with whom they would like to rotate. This step includes program dependent questions for the student to answer, such as rotation goals. Follow your program specific timeline when submitting this form Rotation Form Link**
2. The form is automatically routed via email to the selected mentor. The mentor will read over the student's proposal and indicate via yes/no and a signature if they accept the proposed rotation.
3. The form is automatically routed via email to the student's program director for final approval. All parties are notified of the approval.
4. A week before the end of the rotation period, the mentor will receive an email notification with a link to the student's original proposal and a rubric. The mentor will use the rubric to assess the student's performance during the rotation.
5. A copy of the Post-Rotation Assessment will be sent to the student, program director, mentor, and program administrator.

Please note: This system contains sensitive student data; therefore, you will be required to be on campus or connected to VPN in order to access the forms.

*If you need a **Fourth Rotation (with PD approval),** you must request approval from your Program Director. The Program Administrator and Program Director will work with the Office of Research Education accordingly.*

- **Research In Progress (RIP) Talks**
  - **Students are expected to attend at least 70% of RIP each year.**
  - Wednesdays, 10a-11a, Hensel Phelps West Auditorium
  - Students will not present a RIP talk until their second year
  - First year students will present a post-rotation talk at the end of each lab rotation with fellow IMMU first year students.

- **Preliminary Exam Guidelines**

At the end of the first year of coursework, students (including BSP transfers) will take a preliminary exam to assess their mastery of immunology and to prepare themselves for proposal writing in their comprehensive exam and beyond.

MSTP students will have passed the MSTP Graduate Preliminary exam upon joining the IMMU Graduate Program and therefore will not be expected to take the IMMU preliminary exam.

Preliminary Exam - The Immunology Program Curriculum Committee: Preliminary Exam Committee administers immunology preliminary exam. The content and format of the exam is subject to change year to year but will focus on examining the student on the concepts and information learned during the first year.

The purpose of this exam is to test a broad understanding of immunology and immunological concepts derived primarily from the graduate immunology required coursework. It is important that prior to planning any time away at the end of the first year you are aware of the current year's date for the Preliminary Exam and following the IMMU program's leave reporting process in conjunction with the Graduate School.

IMMU Preliminary Exam Guidelines

All IMMU students will complete the Preliminary Exam at the end of their first year of coursework. Two weeks before the exam, students will be provided three research topics. Each research topic will include a prompt and a review article to guide the students. Students will choose one of the research topics to prepare their Preliminary Exam. The written component of the Preliminary Exam consists of a short mini-grant proposal. Approximately one week after submission of the written proposal, students will have an oral exam administered by three faculty members. There is a firm deadline for the written proposal, see below, and extensions will not be provided.

Preliminary exam topics will be based on recent review articles in Current Opinion in Immunology (https://www.sciencedirect.com/journal/current-opinion-in-immunology). Three review articles will be chosen each year; one will focus on innate immunity and/or inflammation, one on B cells, and one on T cells. Each review article will be the basis for a research topic 'prompt' to guide the formation of a hypothesis and a single aim to test the hypothesis.

The proposal format is as follows: a minimum of 2 pages and a maximum of 3 pages, single-spaced, in Arial 11 pt font, with 1" margins all around. AI usage is allowed; if it is used, specify AI program(s) used, stage/section of the proposal in which it was used, and what it was used for. The proposal also must include a bibliography for references cited and a graphical abstract. The bibliography, graphical abstract, and AI statement are NOT included in the 3-page limit. The mini-proposal should include the following sections:

1. Background (~2/3 page)
    a. Synthesis of key pre-existing literature
    b. Statement of unanswered question(s)
2. Rationale and Hypothesis (2-3 sentences)
    a. Rationale for proposed experiment(s)
    b. Hypothesis being tested
3. Experimental plan (1-1.5 pages)
    a. One Specific Aim
    b. Experiment(s) to test aim
    c. Predicted outcomes and Interpretations
    d. Alternative approaches
4. Bibliography of references cited and graphical abstract
5. AI statement

Prior to turning in the prelim document, the students should not discuss their exam with others (besides the prelim chair). After the document is submitted, the students are free to discuss and share their documents. Practicing answering questions out loud with other students and lab mates and writing on the board is encouraged during this week.

The oral exam will be 45-50 minutes in length. Students should prepare a 5-7-minute presentation, with no more than 6 slides, that covers key points of the proposal. After this introductory presentation, the remainder of the exam will take place without any audiovisual aids (i.e., no further slides allowed).

Students will be evaluated on both the written and oral components of the exam based on the preliminary exam rubric. The exam is designed to test each student's understanding of key concepts and ability to think through experimental design, both of which are important for research in biomedical sciences, with a focus on immunology. While the main focus of the questions will be related to the written proposal, students should expect occasional questions outside the immediate scope of the written proposal. All questions, however, will be limited to the material that the student was exposed to during courses and rotations that they had within the first year of the graduate program.

After the exam, the student will be asked to leave the room, and the examining committee will decide an overall "pass" or "remediation."

Next the exam committee will deliberate and come to a consensus score in each of the 4 areas described in the rubric. Those scores, along with any comments, will be provided to each student at the end of the exam day or shortly thereafter. If a student scores a 1 in any area of the rubric, this will trigger a need for remediation in that area. If remediation is needed, it will be individually tailored to that area and each student's needs and should be completed before the beginning of the next academic semester.

If overall remediation is required, the student will choose one of the other prompts and work with the prelim chair to arrange the next exam. Failure to pass the remediation is grounds for dismissal from the program.

*Proposals turned in after the deadline (**May 30, 2026 at 12pm**) will not be accepted and will instantly trigger overall remediation.

Dates for Prelims 2026:

Instructions and prompts distributed:	May 14, 2026
Meeting with prelim chair:	May 15, 2026, 1-2PM, RC1-N 9107.
Written proposals due:	May 30, 2026, 12:00pm (noon) Denver time to Jill.Slansky@cuanschutz.edu
Oral exams:	June 5-6, 2026

- **Transfer to Thesis Lab**
  - **Predoc Financial Support Agreement** for those faculty mentors who choose to take on a new predoctoral mentee.

- **After successful completion of the Preliminary examination, the student should choose a thesis advisory committee, in consultation with his/her advisor.**

- **Residency**
  - Per University policy, it is required that students begin the process of establishing their residency as soon as they accept their offer to join the PhD program. This process must be started promptly to ensure you meet the necessary deadlines by the end of your first year. For more information, please visit the University website – **Residency**

Year 2

- Minimum registration requirement for full-time graduate students is 5 credits. Anything above 5 credits must be approved by faculty mentor. Required courses available to take in the second or third year include: Bioinformatics, ethics, 2 electives (special topics or OMICs/Data Analysis).

FALL SEMESTER		
Course Title	**Registration Information**	**Credits**
Bioinformatics	IMMU 6110	3
Science as a Profession	IMMU 7607	1
Special Topics Course (elective)	IMMU 7602/7604	1
Research (Pre-Comps)	IMMU 7650 (sec 0V3)	1
SPRING SEMESTER		
Course Title	**Registration Information**	**Credits**
Scientific Writing	IMMU 7605	1
Special Topics Course (elective)	IMMU 7603	1
Special Topics Course (elective)	IMMU 7208/7209	1
Research (Pre-Comps)	IMMU 7650 (sec 0V3)	2
SUMMER SEMESTER		
Course Title	**Registration Information**	**Credits**
Doctoral Thesis	IMMU 8990 (sec 0V1)	1

- **Research In Progress (RIP) Talks**
  - **Students are expected to attend at least 70% of RIP each year.**
  - Wednesdays, 10a-11a, Hensel Phelps West Auditorium
  - Second year's + IMMU program students will be scheduled according to cohort to present one RIP talk in the academic year calendar.

- **Comprehensive Exam Guidelines**

Purpose

- The purpose of the Comprehensive exam is to test the student's knowledge and ability to critically think as they progress through the Immunology graduate program. This exam includes both a written proposal and an oral defense.
- The Comprehensive Exam ensures that there are no concerns that would preclude the student from formal admission to candidacy for a Ph.D. at the University of Colorado. After successful completion of the comprehensive exam, the student focuses on the laboratory component of their thesis research.
- The Comprehensive Exam process also creates an opportunity for students to be immersed in the grant writing process, through writing an "NIH-style" proposal.

General Timeline and Components of the Comprehensive Exam - The Comprehensive Exam (I.e. "Comps") occurs in the spring of the student's second year, as detailed below. This process involves two major steps. First, through the guidance of the advanced writing course the student will prepare an NIH R21-style written proposal. The student and mentor should agree upon the amount of time the student will have away from the lab to prepare the proposal; however, **this should not exceed four weeks**. Second, the student will participate in an oral examination (typically mid-May), during which a committee of five faculty members ask a series of questions of the student, ranging from questions specific to the written proposal to underlying concepts in immunology. At the conclusion of the exam, students will either pass, pass with conditions, or fail (as detailed below).

Comprehensive Exam Committee

The exam committee for each student will be established by the Comprehensive Exam Chair of the Immunology Graduate Program. This committee will include the Comprehensive Exam Chair (or a designated faculty member who will serve as committee chair) and four additional Immunology Graduate Program faculty that hold current appointments in the CU AMC Graduate School. Committees will be derived from a limited pool of faculty, such that any given exam committee will share at least three members with at least two other exam committees. In addition, at least one member of the student's thesis advisory committee will be a member of their examining committee with the intent that this faculty can relay the outcome, strengths and weaknesses of the student to the thesis advisory committee.

All examinations will be given in the spring of the student's second year (typically April-May); students may be given the option for their exam to occur in an earlier block, at the discretion of the Comprehensive Exam Chair of the Immunology Graduate Program. The composition of the committees and the unified time frame for examination are implemented to enhance continuity and equity for the students throughout the examination process. The thesis advisor cannot serve as a member of the exam committee although they are expected to attend the exam strictly as an observer.

Student Requirements Leading up to the Comprehensive Exam

The Comprehensive Exam is a formal exam, and the student must be registered for the semester in which they take the exam. ***In addition to registering for the semester, the student must complete necessary paperwork through the Graduate School one month before the exam.*** There are two forms to be completed: "Application for Candidacy Form" and "Exam Request Form," both which can be found at https://graduateschool.cuanschutz.edu/forms-resources/resources.

As of Fall 2024, both forms are now initiated, completed, routed and signed through DocuSign. Further details on these forms can be found below in section "Required Forms for the Comprehensive Exam".

Timeline for the Comprehensive Exam Process

1. The Comprehensive exam written proposal: The subject of the comprehensive exam will be an NIH R21-style grant proposal (R21 format https://grants.nih.gov/grants/guide/pa-files/PA-20-195.html) written by the student. This proposal may or may not be the student's primary research focus in lab, a decision left to the student. Writing the Comprehensive exam proposal involves two phases, typically separated by the student's first thesis committee meeting:
    a. Phase 1: Crafting a Specific Aims page. Before the student's first thesis committee meeting, student and mentor may work together to craft the Specific Aims for their comprehensive exam written proposal. This process may occur from the Fall through January or February.
    b. First thesis committee meeting: The student typically completes their first thesis committee meeting in January or February; this meeting must take place before the end of March of their second year. A primary focus of this meeting is for the student to present their overall thesis aims (further detailed in the section "Thesis Advisory Committee Meeting Format" below). In addition, the student may use this opportunity to present and receive feedback on potential Aims for their comprehensive exam. This hybrid approach of presenting both thesis Aims, and potential comprehensive exam Aims, is at the discretion of the student and mentor.
    c. Phase 2: Moving past the Specific Aims page, to write the proposal. After a student completes their first thesis committee meeting, the student will pivot to writing their Comprehensive exam proposal. Students typically work on their proposal between February-April. As noted above, the student and mentor should agree upon the amount of time the student will have away from the lab to prepare the proposal. Unless specific accommodations are provided by the Office of Disability, Access, and Inclusion (ODAI), this should not exceed four weeks. For this second phase, the student is expected to develop and write their proposal without the assistance of their mentor or others. Feedback on writing should only be obtained by the student working with their Writing Coach, assigned by the Comprehensive Exam Chair. After the first thesis meeting, it is acknowledged that the communication boundaries between student and mentor with regard to thesis and comprehensive exam aims may be "blurry". That said, the student should try and largely restrict comps-related communication to their assigned Writing Coach (for feedback on the written proposal) or the Comprehensive Exam Chair (for questions about the Comps process).

2. Assignment of Comprehensive exam Writing Coach: Students will be assigned a Writing Coach by the Comprehensive Exam Chair by February of the student's second year. The Writing Coach will be a faculty member who has previously served on Immunology Comprehensive exams but is not serving as an examiner in the current year. Students should direct requests for feedback on the written proposal to their Writing Coach. It is the student's responsibility to initiate communication with their Writing Coach. Students are expected to provide documents for review to their Writing Coach in a timely manner, so

that the Writing Coach has adequate time to provide feedback. The Writing Coach is expected to provide feedback on the student's written proposal, potentially offering suggestions about the structure of the proposal, the material covered in the Background and Significance, the feasibility and design of experiments, etc. Although the Writing Coach may offer input on grammar and sentence construction, students requiring significant assistance on basic writing skills should work with the CU Writing Center (https://clas.ucdenver.edu/writing-center/) which has a wealth of resources for writing.

3. Assignment of Comprehensive exam committee members:
    a. Students will be assigned a comprehensive exam committee chair by January of the student's second year. The student's comprehensive exam chair is the primary point of contact for the student for all questions about Comps.
    b. Students will be assigned the remaining members of their exam committee by March of the student's second year.

4. Submission of Comprehensive exam written proposal:
    a. Completed written proposals must be submitted 2 weeks (14 days) before the student's scheduled oral exam.
    b. Students must submit the finished written proposal before end of the day (11:59 PM) of the submission deadline. The proposal should be submitted using the requested method of submission as communicated by the Comps Exam chair; this is typically using Smartsheet. Failure to turn in the comprehensive exam by the deadline will result in an incomplete for the written portion of the exam and remediation will be required as determined by the curriculum committee and the program directors.

5. Mock oral exams: Once a student submits their written proposal, the student should participate in mock oral exams, led by Immunology students who have previously passed their Comps exam. Students can individually organize their own mock exam or work in coordination with the IGSB to schedule their mock exam. It is the student's responsibility to notify IGSB if they require assistance in scheduling their mock exam. Neither the mentor nor other Immunology faculty members should participate in a student's mock exam.

6. Oral examination: The formal defense of the proposal will occur before the end of May in a student's second year.

Proposals

Comprehensive Exam Topic - The comprehensive oral examination will typically be centered on the student's thesis research but may or may not be the student's primary research project in the lab, a decision left to the student. It is anticipated that in some cases, a student's comprehensive exam may serve as a basis for applying for external funding. One of the potential complications of this format, where thesis project and comprehensive exam topic are inter-related, is that a student's thesis work is a complex compilation of the student's, mentor's, and even thesis committee's ideas and hypotheses. These factors complicate the evaluation of the originality of the proposal and to what degree the proposed research plan is the result of the student's ideas or those of their advisor/committee. The steering committee has acknowledged this as a hazard of the chosen format and, while no strict policing of this will be performed, all students are encouraged to work as

independently as possible on both the formulation and the writing of the Comprehensive Exam proposal.

Preparation of the Proposal

1. The student is responsible for writing the proposal. The student can, and should, receive feedback on their document from their assigned Writing Coach during this process (i.e. Phase 2, as described above). The Writing Coach will offer suggestions about the structure of the proposal, the material covered in the Background and Significance, the feasibility and design of experiments, etc. Although the Writing Coach may offer input on grammar and sentence construction, students requiring significant assistance on basic writing skills should work with the CU Writing Center (https://clas.ucdenver.edu/ writing-center/).

2. The general format for the written proposal is a research proposal written in an "NIH R21" style. Students may read proposals from previous students; however, they should be aware that they must follow the format prescribed by the program for the current year.

3. Students may get advice on techniques from others, but besides the Writing Coach no one should read the proposal without the recommendation and approval of the Comprehensive Exam Chair.

4. Any issues that arise should be discussed and resolved with the Comprehensive Exam Chair.

Use of generative artificial intelligence (AI) in writing the Comprehensive Exam proposal.

1. Learning how to write an effective grant is critical for a developing scientist. The rapid rise of generative AI tools (e.g. ChatGPT) has provided new opportunities and challenges for the writing process. Use of generative AI tools to facilitate writing of the Comprehensive Exam proposal is at the discretion of the student and will not be considered positively or negatively by the examining committee. This policy only applies to Comprehensive Exam written proposal and is NOT intended to apply to other aspects of the Immunology program.

2. If a student chooses to use generative AI tools, please note that the only University of Colorado-approved generative AI algorithm is Microsoft Copilot. Adobe Firefly is also University-approved. Note that many other generative AI platforms are not sanctioned, given concerns about data privacy and security (e.g. ChatGPT, Claud, etc). When using Microsoft Copilot, it should be accessed using University-approved methods, to ensure that data are private (as detailed at https://www.cuanschutz.edu/offices/information-security-and-it-compliance/resources/security-and-compliance-controls/microsoft-copilot).

3. All students must disclose whether they used generative AI or not on the title page of their submitted written comps proposal.

a. If a student does not use generative AI, they should explicitly state this.

b. If a student chooses to use generative AI tools to facilitate writing of their Comprehensive Exam written proposal, the student should: **i)** declare its use to their assigned, Comprehensive Exam Chair, **ii)** carefully review and edit any proposed text to ensure scientific accuracy, including appropriate references and **iii)** acknowledge use of generative AI when they submit their completed proposal to their Examination committee.

c. ***Acknowledgment of the use of generative AI should be stated as follows*** (based on, and modified from, Author guidelines developed by the publisher Elsevier, https://www.cell.com/cell/authors).

"During the preparation of this proposal, I used [NAME TOOL / SERVICE OF GENERATIVE AI (e.g. Microsoft CoPilot)] to [REASON]. After using this tool/service, I reviewed and edited the content as needed and take full responsibility for the content of this proposal."

Format and Structure

1. The format and page guidelines for the written proposal may change from year to year. For 2025-2026, the written proposal should include 4 components compiled into a single document:
   1) Title page (1 page) with
      i. Student name
      ii. Title of proposal
      iii. Date and location of oral exam
      iv. Disclosure on use of generative AI
         1. Did you use generative AI?
         2. If so, what generative AI tool did you use, and how did you use it?
      v. Graphical abstract / overview with legend (½ page)
   2) Specific Aims (1 page)
   3) Research Strategy including significance, innovation and research plan (6 pages)
   4) References (no page limit)

2. Appearance and legibility are very important. Incorporation of figures is also very useful.

3. Proposals typically contain some preliminary data, but students are NOT evaluated on their progress in lab work in the Comprehensive Exam (something which is the responsibility of the thesis committee).

4. The 1-page **Specific Aims** page should include a testable hypothesis, based on experimental evidence. The specific aims are the approaches that you will adopt to address the general hypothesis. An Aim is not necessarily a single experiment but is often a series of experiments designed to accomplish one goal. Similar to R21 applications, comprehensive exam proposals typically present experiments in 2 specific aims that can be accomplished in 2 years.

5. The 6-page "**Research Strategy**" should include the following 3 sections: 1. Significance, 2. Innovation, 3. Approach, including subsections on experimental design, anticipated results and alternative approaches. More detailed information about the expected content of each of these sections can be found in the "PHS 398" instructions for grant applications to the National Institutes of Health. A pdf of these instructions can be found at the NIH website, https://grants.nih.gov/grants/funding/phs398/phs398.pdf

6. In the **Significance** section you should answer the question of why this research is important. This is a very important component of the proposal as you are trying to convince the reader that they would want to know the answer to your experiments (for example they

would want to read the paper(s) when this work is published). The PHS 398 instructions include:

- Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.
- Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.
- Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

7. The **Innovation** section should describe why specifically your proposed experiments are important for the question being addressed. The PHS 398 instructions include:
    - Explain how the application challenges and seeks to shift current research or clinical practice paradigms.
    - Describe any novel theoretical concepts, approaches or methodologies, instrumentation or intervention(s) to be developed or used, and any advantage over existing methodologies, instrumentation or intervention(s).
    - Explain any refinements, improvements, or new applications of theoretical.
    - Note that the Innovation section is NOT simply a restatement of significance, but instead emphasizes conceptual, methodological or technical innovations within the proposal.

8. **Approach**. It is recommended that you write out the experiments you propose for each specific aim one-by-one, and for each aim, include a section that covers the following:

    Rationale. Why is this a logical experiment to do? Why is the approach that you have selected the best way of approaching the experiment? This may also include a discussion of your interpretations of conflicting data in the literature or could include very specific data not given in the background section.

    Experimental Design. Define exactly what experiments you would do. You may include methods here or list them after. The experimental details should be very clear: for example, how many mice will you inject and at what age? Male and female? If not, why? What will you inject? When will you sacrifice the mice and analyze them? What will you assay for? Describing methods with which most investigators in the field would be expected to be familiar with is not necessary or desirable, but the specifics should be addressed. For instance, if you're doing a Southern blot, what is your probe? What restriction enzymes will you use? How will you interpret your results? Or, if you're doing flow cytometry, what antibodies will you use? How will they be labeled?, etc. Proposal should explicitly define what statistical analysis will be done for proposed studies.

    It is extremely important that the proposed experiments be realistic and feasible. Many experimental ideas are great in theory, but once the experimental details are described potential limitations become evident.

Interpretations and Limitations. What will the data look like if your hypothesis is correct? How would interpret alternate outcomes? How would you interpret partial phenotypes (e.g. results that are 50% of wildtype levels). What things might be expected to go wrong? Have you made any assumptions that could turn out to be pitfalls? What will you do if this happens? Can any of this be avoided? Note - in the past, some students have designed specific aims that were mutually dependent, e.g. Aim 2 could not be undertaken if Aim 1 did not turn out as expected. This should not be! Mutually dependent experiments within an aim are okay, but you must point out that this is the case and discuss alternatives if the outcome is not what you expect it to be.

Guidance on who students can work with during the Comps process

As noted above, Students are allowed to work with different parties at different stages in the Comps process. Individuals and resources who the student is allowed to work with at different phases are summarized below.

Phase 1. Preparing your Comps Specific Aims (before student's first thesis committee meeting)	Student can work with the following individuals and resources
Writing your Comprehensive Exam Specific Aims page	• Your PI (primary contact) • Your thesis committee (in thesis committee meeting) • The CU Writing Center (e.g. on writing structure, style) • Grammarly (grammar correction)
Thinking about your research	Anyone including your PI
Phase 2. Writing your proposal (after student's first thesis committee meeting until submission of the written proposal)	Student can work with the following individuals and resources
Writing your Comprehensive Exam proposal	• Your assigned Writing Coach • The CU Writing Center (e.g. on writing structure, style) • Grammarly (grammar correction) • Generative AI algorithms (e.g. ChatGPT, if disclosed) • Your Comps Exam Chair (questions on Comps)
Thinking about your research (NOT your Comps)	Anyone including your PI
Phase 3. After submission of written proposal (after student submits their written proposal)	Student can work with the following individuals and resources

Mock oral exam	Students, postdocs but not faculty (or PI)
Critiquing your proposal & getting feedback	Anyone including your PI *(new policy, 2025)*
Preparing your 12-minute presentation	Anyone including your PI

Oral Examination

1. The Comprehensive Exam Committee Chair of the Immunology Graduate Program will schedule the date, time and room (in coordination with the program administrator) for the oral exam, and inform the student. It is the student's responsibility to complete the paperwork with the graduate school, and to arrange any audio-visual equipment (ie. Laptop). If there are questions about the paperwork, the program administrator should be contacted.

2. All members of the committee must be present for the examination. One member, but not the chairperson or the student, may participate by interactive video. Although the mentor is not required to be present, the program strongly encourages the mentor to attend so that they may gain insight into the "strengths and weaknesses" of their student. Only the exam committee, the student and the mentor(s) are allowed to attend any part of this exam. Any exception to this must be approved by ALL members of the committee.

3. The format of the oral exam is the following:
    - Initial Committee Discussion: Once the meeting is convened with the student, mentor and all examining committee members, the student and the mentor (if present) are asked to leave the room. The chairperson will then lead a brief discussion (<5 minutes) to remind committee members of the scope of the exam, to ensure balanced representation of questions across basic immunology and proposal-specific topics across the committee and discuss issues with the written document. If the committee considers it appropriate, the mentor may be invited back into the room without the student for further discussion and/or consultation.
    - Student Presentation: Next, the student and mentor are invited back into the room and the student will give a brief oral presentation on their proposal. THIS SHOULD BE A MAXIMUM OF 12 MINUTES. Suggestions for this presentation could include: 1-2 slides of background, 1 slide of significance followed by (perhaps) 4 slides for each experimental Aim that outlines the rationale for the Aim, experimental approach, possible data obtained (e.g., in a Table with + or - for expected results) and limitations of the approach.
    - Examining Committee questions: Upon completion of the student's presentation, each member of the committee will then ask the student questions about the presented material. Questions should primarily focus on the proposal (rationale, significance, experimental design, data interpretation), however, the student should also be prepared to answer questions relating to background, especially foundational principles of immunology (e.g. if a proposal is focused on the immune response to a certain peptide, the student may be asked to discuss how different peptides are processed and presented, to test the student's foundational knowledge of this process). Generally,

each examiner will be allowed ~15-20 minutes of questions (timed by the exam chair), with the entire exam typically lasting 2–2.5 hours.

- Examining Committee discussion and decision:
  - After each member of the committee has asked any questions that they may have, the student and the mentor are asked to leave the room and to remain outside the exam room while the committee discusses the student's performance. If the committee considers it useful, they may ask the mentor to return to offer additional insight about the student.
  - The examining committee can make one of three decisions about the exam: Pass, Fail or Pass with conditions. Generally, the Pass vs. Fail decision is based on the student's oral exam, with Fail only coming into consideration if the student is woefully unable to defend their document or demonstrates significant deficits in their knowledge. This would be demonstrated by multiple instances of major knowledge gaps during the oral exam. Pass with conditions is typically invoked if there is a substantive issue with the written document that the committee agrees requires a rewrite OR if the student demonstrates a focused area of deficiency, potentially rectified by a write-up on this deficient area (e.g. a mini-review). These are solely guidelines and may be adjusted based on individual circumstances.
- Advising the Student & Mentor about the Committee's decision: After the committee reaches its decision about the outcome of the exam (Pass, Fail or Pass with conditions) the student and mentor are invited back into the room and advised of this decision by the chairperson. The examination form is signed by the committee and returned to the Graduate School Office.
- The committee is encouraged to provide written feedback to the student regarding the written proposal, the presentation and their performance in answering questions. This can be done by email communications coordinated by the chairperson. If this is done, a copy should be sent to the program administrator for inclusion into the student's file.

4. What happens if a student passes with conditions? If a student passes the examination with conditions, those conditions must be stated on the examination form and satisfied within one month (30 days). The committee chair or another member of the committee will also prepare and share with the committee, student, and student's thesis advisor a written statement that details the committee's expectations for these conditions. The statement will specify the concerns that need addressed and the format by which these will be addressed. The committee/statement may require the student to (a) make edits or revisions to the existing written exam that are within the parameters (e.g. page limits) of the original exam, (b) write a new document that addresses conditions but is separate from the original document, or (c) request that the student complete other conditions as specified. If the student is asked to prepare a new document, the committee's written statement will indicate the expected length of the new document. The committee chair is responsible for monitoring the conditions and reporting their outcome to the Graduate School. Documents will be reviewed by one or more examiners. If the document does not fully meet the committee's expectations for conditions, the student may be asked to further revise the document to more appropriately address the requested topic(s) or correct factual errors. Failure to satisfy these conditions will result in failure of the examination.

5. What happens if a student fails the Comprehensive Exam? A failed examination is discussed by the Immunology Program Directors and the Comprehensive Exam Committee and is based on

the oral defense of the student's proposal and a written summary of the exam by the chair. Thus, the outcome of this meeting will be determined on a case-by-case basis. A student who fails the examination is subject to immediate dismissal from the Graduate School upon the recommendation of the program and concurrence of the Dean. However, at the discretion of the Immunology Program Directors and the recommendation of the comprehensive exam committee, a student who fails the examination may retake it once. The retake will be in the form designated by the Immunology Program Directors and the Curriculum Committee and must be completed within three months. The original examination form noting the failure is signed by the committee and returned to the Graduate School office. New examination forms will be generated when the examination is rescheduled. Students will be required to meet registration requirements and be registered during the term in which the repeated exam is taken.

Application to Candidacy form - Completing the required courses for the program does not automatically admit a student to candidacy for the degree. Each student must complete the *Application for Admission to Candidacy* form (available from the Graduate School website under Student Resources -> Forms tab. More information below). This application for candidacy must be completed, reviewed and signed by the Program Directors (Ross Kedl OR Beth Tamburini) and approved by the Graduate School**.** This application requires a clear listing of the courses completed and that fulfills the requirement for 30 letter graded didactic credit hours (see below).

Once the Graduate School approves candidacy, the student will be sent notification by mail at the address the student lists on the *Application.* To apply for candidacy, students must have completed, or be currently registered to complete, 30 semester hours of didactic course work. For Immunology Program students, this means that an application to candidacy can only be submitted *after* registering for the Spring semester Special Topics courses (IMMU 7603, 7604). Again, **a student should have completed (or have registered for) all required courses prior to admission to candidacy.**

Required Forms for the Comprehensive Exam
The forms to schedule this exam can be found on the Graduate School website at https://graduateschool.cuanschutz.edu/forms-resources/resources and then click on the Forms tab. The forms are now filled out, routed, and signed through DocuSign. Using DocuSign will be the only process for the forms to be completed and submitted. There is no longer a pdf download available. Once on the Graduate School website, under the Forms tab, you will see the two required forms, ***Exam Request*** and the ***Application for Candidacy forms.*** Both forms are due to your Program Administrator (PA) at least **one month** prior to your expected examination date.

1. **Contact your Program Administrator** (PA) regarding the makeup of the Examination Committee as all the committee members will need to have a Graduate Faculty Appointment. To see a list of faculty with current appointments, please see the Graduate Faculty Directory, https://graduateschool.cuanschutz.edu/forms-resources/resources, under the All Resources tab.
2. Completing the **"Application for Candidacy" form** as prompted through DocuSign
   - Start by viewing a copy of your unofficial transcript
   - *To be mindful of when completing the Application for Candidacy form*
   - Courses should be **listed in chronological order**
   - **Do not list any courses** in which the grade is either IP or P

- **Do not list IMMU 8990** as it does not count towards the 30 didactic hours required for comps
- You will need to list the instructor's last name and initial. If there was more than one instructor, you are ok to list the lead instructor for the course
    - **For any 7650 courses, please list the program director** as the instructor and not your rotation faculty mentor
- The whole course title must be readable
- There must be one line for each course taken (didactic) as it appears on your transcript, not including the exceptions as noted above

3. Complete the **"Exam Request" form** as prompted through DocuSign
4. Once the forms have been completed, signed, and submitted through DocuSign, the Graduate School will prepare and distribute the "Notice of Examination" to you, the academic program, and your committee members.
5. Your program will receive not only the "Notice" but all necessary forms to complete the examination.

Year 3+

- Minimum registration requirement for full-time graduate students is 5 credits. Anything above 5 credits must be approved by faculty mentor. Required courses available to take in the second or third year include: Bioinformatics, ethics, 2 electives (special topics or OMICs/data analysis).

- Students defending in the current semester must register for 5 credits of IMMU 8990. If a student is defending between semester dates as defined by the Academic Calendar, the student must register for 5 credits of IMMU 8990, in the proceeding semester of the scheduled defense date.

FALL SEMESTER		
Course Title	**Registration Information**	**Credits**
Doctoral Thesis	IMMU 8990 (sec 0V3)	1-5 (variable)
Special Topics Course (elective)	IMMU 7602/7604	1
Omics Data Analysis (elective)	IMMU 7611	2
SPRING SEMESTER		
Course Title	**Registration Information**	**Credits**
Doctoral Thesis	IMMU 8990 (sec 0V3)	1-5 (variable)
Special Topics Course (elective)	IMMU 7603	1
Special Topics Course (elective)	IMMU 7208/7209	1
SUMMER SEMESTER		
Course Title	**Registration Information**	**Credits**
Doctoral Thesis	IMMU 8990 (sec 0V3)	1

- **Research In Progress (RIP) Talks**
  - **Students are expected to attend at least 70% of RIP each year.**
  - Wednesdays, 10a-11a, Hensel Phelps West Auditorium
  - Third year and above IMMU program students will be scheduled according to cohort to present one RIP talk in the academic year calendar.

- **Thesis Committee meetings**

1. The thesis advisory committee is composed minimally of a committee chair and four other faculty members, all holding current appointments as faculty in the Graduate School. Furthermore, the majority of this committee (i.e., at least 3) must be comprised of the Immunology Program faculty. If the committee has 6 members, then 4 must be Immunology Program faculty.
2. All Committee members must have Graduate Faculty status. If a faculty member does not have Graduate Faculty status, please ask him/her to contact the Program Director for approval. It takes several months for the Graduate School to approve a faculty member for Graduate Faculty status. Should a member not be approved at the time of the defense, the defense could be voided.
3. The student's thesis advisor may not be a voting member of the thesis committee.
4. A list of Immunology Graduate Program training faculty and their primary academic appointments is available for reference on the Graduate School website: https://www.cuanschutz.edu/graduate-programs/immunology/faculty
5. The primary duties of the thesis advisory committee will be to guide and advise the student's research progress. As the thesis committee needs to provide unbiased advice to the student, the committee membership should be independent from the mentor. Any individual with a real conflict-of-interest (e.g. financial interest or a spouse of the mentor or student) cannot be a voting member of the committee. Conflicted individuals may still participate in committee meetings but must leave the room with the mentor or student, as appropriate. In addition, a majority of members should not have direct involvement in the student's project or be a close collaborator of the mentor.
6. The student must provide the Program Administrator with the names of their Thesis Committee members and have their first committee meeting at least one month prior to their scheduled Comprehensive exam in May (see above). **The minimum time between your first committee meeting and your defense is two years.**

Thesis Advisory Committee Format

Evaluation of Student Progress

Student's progress in the program will be determined by evaluation of:

1. Research productivity
2. Development of ability to independently conceptualize, design, carry out, analyze and present his/her experiments
3. Ability to discuss his/her research area and answer questions about the research and its context
4. Knowledge of the relevant literature
5. The quality of Research – in –Progress (RIP) presentation
6. Progress towards creating his/her (first-author) publication(s)
7. Progress towards a complete body of work that will constitute his/her thesis

If the student's progress is considered unsatisfactory, the committee should issue a warning to the student in which the deficiencies are clearly identified, and a time period should be set within which it is expected that the student will correct the deficiencies. A copy of the warning is filed in the student's official program file by the program administrator. The thesis committee should provide input to the

thesis advisor about the grade assigned by the mentor for the thesis hours during the warning period. At the end of the warning period, the committee and student will meet to assess progress. If on re-evaluation, progress is found to remain unsatisfactory, the committee will draft a recommendation to be reviewed by the Program Directors. The Immunology Program Directors will inform the student and committee members of the decision in writing.

Thesis Advisory Committee Meeting Format

The thesis committee meeting is meant to provide the student, advisor and the Immunology graduate program with an evaluation of student progress and to provide support and recommendations to the student and advisor on the thesis project. This should be carried out in a scientifically critical and rigorous but collaborative manner. Meetings are not intended to be examinations. Ideally, meetings should be a scientific discourse between the student and the thesis advisory committee. The thesis advisor is not expected to participate unless invited or to clarify or to redirect discussion.

During the thesis committee meeting the student is expected to provide experimental findings obtained since the last committee meeting as well as future direction of the project with experiments expected to be accomplished by the next committee meeting. Depending on the student's need and direction the data presented may be preliminary or from other sources (i.e., not from the student, per se). This venue is also meant to provide students with an opportunity to hone their scientific communication skills in describing their experiments and interpreting their findings to other scientists.

1. The first committee meeting should be completed prior to the end of March of the second year.
2. Prior to the ***first committee meeting*** the student should provide each committee member with a Specific Aims page that provides a specific hypothesis and question that is being addressed with specific aims. *P*rior to ***subsequent committee meetings*** the student should provide the thesis committee chair and committee members with a student thesis committee report. The form (see Appendix 4) includes the following:
    a. Overall thesis research goals and hypotheses that incorporate any changes to those goals resulting from previous committee meetings.
    b. Previous concerns/recommendations of previous thesis committee meeting.
    c. Accomplishments since last meeting discussing how you have addressed previous recommendations and, if you did not, then why not (i.e., not enough time, took different direction, etc.). Include any new methods/techniques you may have learned, any literature sources or collaborators that were significant.
    d. How did your results affect your original hypothesis or goals? (confirm, deny, modify).
    e. Based on the data/results described in (c), state briefly your next steps in elucidating the hypotheses.
3. Each committee meeting should begin with a short discussion with the student in the absence of the mentor, and with the mentor in the absence of the student. In these discussions both advisor and student are encouraged to provide a candid assessment of the mentorship and how the dissertation project is progressing and whether any issues have surfaced that the committee needs to be aware of.
4. The thesis committee meeting should begin with a slide prepared by the student that discusses career goals and a list of activities accomplished in the previous year that relate to these goals. This also serves as an official Individual Development Plan (IDP) discussion for the student and advisor.

5. The first thesis committee meeting is for the purposes of 1) introducing the committee to the background, preliminary data, hypothesis, aims/goals, and proposed experimentation for the student's thesis, and 2) allowing the student to receive committee feedback on their planed comprehensive exam proposal. All subsequent committee meetings should be increasingly directed toward gaining the committee's input on the preparation of the students first manuscript submission; manuscript narrative and scope, finalized figures, and proposed experimentation specific to the completion of the manuscript.
6. The student should then present his/her recent research findings to the committee, discuss how these findings impact the thesis work and the future experiments to be performed before the next committee meeting
    a. It is important that the student understands that they should ultimately control these meetings (increasingly so after each meeting). This is best accomplished by having, and presenting, a clear understanding of where he/she is in their thesis project, where the committee (and specific committee members) can be of particular help (direction, technique, approach, etc.) and what are the next goals.
    b. The student should be aware that any data or experiments that are presented can very easily generate discussion by the committee members that ultimately can take up considerable time. Thus, the presentation of background information and experiments that are not going to be pursued or are not relevant to the thesis direction should be carefully considered.
    c. The thesis committee chair is responsible for ensuring that the discussions stay pertinent to the thesis topic and that respect is maintained towards both student and faculty.
7. Each committee meeting should end with a discussion amongst committee members (in the absence of student and advisor) on the student's project and progress. The goal of this discussion is to reach a consensus sentiment by the committee on these topics that should be included in the Thesis Committee Report.
8. The Committee chair should then relay the consensus sentiment to both student and thesis advisor immediately following the meeting.
9. *Finally, the student (and faculty committee members) should be cognizant of the dual nature of the responsibilities of faculty committee members: to nurture and promote scientific progress and development during regular committee meetings and, ultimately, the same faculty members are required to rigorously examine the student on their thesis topic and general immunology concepts during the thesis defense.*

<u>Responsibilities of Thesis Committee Chair, Committee Members, Advisor, and Student.</u>

Thesis Advisory Committee Chair responsibilities

The Thesis Committee Chair has responsibilities above and beyond that of committee members. Thus, ***before agreeing to accept the chair, faculty should ensure they have adequate time to give to the student and their thesis project.*** Thesis Committee Chair must be a core-training faculty from the Immunology Graduate Program with a Regular appointment in the UC Graduate School faculty.

Responsibilities include:

1. Presides over the meeting of the Thesis Committee, student and advisor. This includes ensuring the discussion stays on topic and that there is mutual professional respect between adult students and faculty.

2. Completes the online Thesis Committee Report **(**http://predocprogress.ucdenver.edu/) after each committee meeting, summarizing the discussion and the recommendations of the committee. This report must indicate if progress is satisfactory or unsatisfactory and should be determined after the meeting and as agreed upon by committee members in the absence of the student and advisor. The online report should then be submitted "in collaboration mode" for input from the other committee members, followed by formal submission when this is achieved.
3. Attends the student's RIP and completes the online evaluation of the presentation (http://predocprogress.ucdenver.edu/).
4. Be accessible to the student to discuss issues arising related to the thesis project.
5. Meets at least every 6 months individually with student (in the absence of advisor) to assess lab environment, mentoring, progress (excluding data and actual experiments).
6. Serves as a liaison between the student and thesis advisor and thesis committee should matters of disagreement surface.
7. Serves as a liaison with program leadership should the need arise.
8. Presides over the Thesis Defense.

Thesis Advisory Committee Member responsibilities

A student's thesis committee serves several important functions in the student's thesis work and is deserving of appropriate effort and energy by each member. Thus, it is recommended that faculty limit thesis committee membership to 12 committees. Thesis committee members must hold Regular or Special Faculty appointments in the Graduate School. By assuming committee membership, you must agree to:

1. Attend an approximate 2-hour thesis committee meeting every six months throughout the student's thesis work.
2. Provide the student with guidance concerning the research and help redirect the research into productive avenues.
3. Evaluate the student's progress and ensure that the project is of interest, novel, focused and feasible. The outcome of this work must lead not only to his/her thesis but also to a peer-reviewed first-author publication. Members of the committee must keep this in mind. Work towards this is expected to commence when the student enters the thesis lab meeting.
4. Attend the student's mandated Research-in-Progress (RIP) presentations and relay evaluation to the Thesis Committee Chair.
5. Promote the student's development into a rigorous independent investigator.
6. Provide the student and the mentor with an opportunity to express privately any concerns about the research environment or the progress of the research (see below).
7. Attend student's thesis defense as a faculty examiner.

Online **Thesis committee report** form and **RIP evaluation** form to be completed by thesis committee chair: http://predocprogress.ucdenver.edu

Thesis Mentor responsibilities

Agreeing to supervise and direct a graduate student and their thesis project carries considerable responsibility that comes with obligations to the student, Immunology graduate program and Graduate School. Thesis advisors must hold a Regular faculty appointment in the Graduate School. Where co-thesis-advisors are chosen by the student, one may hold instead a Special faculty appointment.

The **thesis advisor responsibilities** include:

1. Provide guidance in the selection of an appropriate thesis research project that addresses an important biological (immunological) question. Furthermore, you are responsible for directing the student in this research by nurturing independent and critical research and with the clear goal of publishing *at least one* first author manuscript(s) that advances the field.
2. Mentor is expected to work with their student and thesis committee to guide the student to completing a first-author research publication prior to graduation.
3. You agree to meet with your student regularly to discuss experimental results, interpretation and direction.
4. Attend the student's Comprehensive exam (usually held during May of the student's first year in the lab). The thesis advisor's attendance is not mandatory but is strongly encouraged to identify the strengths and weaknesses of the student.
5. Together with the student, compose the student's thesis advisory thesis committee and identify an appropriate thesis chair.
6. Ensure the student schedules a thesis committee meeting at least every 6 months as required by the Immunology Graduate Program rules and attend each of these meetings.
7. Attend each of your student's Research-In-Progress presentations.
8. Strongly encouraging your student to attend all graduate program seminars, RIPs and journal clubs.
9. Encourage and financially support your student's attendance at the annual Immunology and Microbiology Conference.
10. Read and approve the student's thesis prior to distributing to the committee members.
11. Provide financial support for the student's stipend and research throughout their thesis work. Students should not be supported by a funding mechanism (e.g. corporate funds) that in any way restricts publication of the student's research findings.
12. Coach and encourage your student through the writing and publication process.

Graduate Student responsibilities

1. Student is responsible for arranging and scheduling the meeting with the thesis advisory committee ***every 6 months*** unless both advisor and thesis committee chair have agreed otherwise. This includes arranging a meeting place, contacting committee members.
2. Student is responsible for informing the Program Administrator of the date and time of the scheduled meeting.
3. Prior to the first committee meeting a Specific Aims page should be provided to all committee members. For all subsequent committee meetings, the student should submit a formal write-up of the previous committee meeting to all committee members and as outlined below*; it is the chair's responsibility to read this prior to the meeting.
4. After each committee meeting, the student should provide the thesis committee chair with a copy of his/her presentation.
5. Student is expected to notify the thesis committee members sufficiently in advance of

scheduled RIP presentations so that they can schedule attendance.

6. Student is expected to work with their mentor and thesis committee to develop and complete a first-author research publication prior to graduation.
7. Student is responsible for meeting with their thesis chair every 6 months (in the absence of advisor) to discuss lab environment, mentoring, progress, etc. Discussion of data and experiments, while fine, is not the goal of this meeting.
8. **Students must be current with thesis committee meetings and reports to register for classes. Any financial consequence of not registering (including tuition payment) will be the student's responsibility.** (Any exceptions to this, or any other program policy, require approval by the Graduate Program Directors).

Student thesis committee write-up to be completed prior to committee meetings

1. State your overall thesis research goals and hypotheses. Incorporate any changes to those goals resulting from previous committee meetings.
2. What were previous concerns/recommendations of previous thesis committee meeting?
3. What have you accomplished since then? Discuss how you have addressed previous recommendations, if you did not then why not (ie, not time, took different direction, etc). Include any new methods/techniques you may have learned, any literature sources or collaborators that were significant.
4. How did your results affected your original hypothesis or goals? (confirm, deny, modify).
5. Based on the data/results described in (3), state briefly your next steps in elucidating the hypotheses.

Examinations and Evaluations

Preliminary Exam

- Every first-year student takes the Preliminary Qualifying Exam at the end of the first year of graduate school. BSP students that plan to join Immunology Program will participate in the program's preliminary exam.

  MSTP trainees who transfer into the Immunology Program may use their existing MSTP preliminary exam as an equivalent to the program's preliminary exam. Prior to transferring, MSTP trainees are required to complete an MSTP-specific preliminary exam.

Comprehensive Exam

- **IMMU comprehensive committee formation**
  - The exam committee for each student will be established by the Comprehensive Exam Chair of the Immunology Graduate Program. This committee will include the Comprehensive Exam Chair (or a designated faculty member who will serve as committee chair) and four additional Immunology Graduate Program faculty that hold current appointments in the CU AMC Graduate School. Committees will be derived from a limited pool of faculty, such that any given exam committee will share at least three members with at least two other exam committees. In addition, at least one member of the student's thesis advisory committee will be a member of their examining committee with the intent that this faculty can relay the outcome, strengths and weaknesses of the student to the thesis advisory committee.
- **App Candidacy form**
- **Exam request form**
  - Once a date has been set with your Advisory Committee, you must contact your Program Administrator to initiate forms. You will also discuss room bookings at this time. All forms must be submitted to the Administrator at least a month prior to the exam date.
- As you prepare for your Comprehensive Exam, please ensure that all your committee members have a faculty appointment listed in the Graduate School Faculty Directory.
- All forms are found in the Graduate School website under the "Forms" section.
  - Graduate School - Resources & Forms - CU Anschutz

- Use of generative artificial intelligence (AI) in writing the Comprehensive Exam proposal.

  1. Learning how to write an effective grant is critical for a developing scientist. The rapid rise of generative AI tools (e.g. ChatGPT) has provided new opportunities and challenges for the writing process. Use of generative AI tools to facilitate writing of the Comprehensive Exam proposal is at the discretion of the student and will not be considered positively or negatively by the examining committee. This policy only applies to Comprehensive Exam written proposal and is NOT intended to apply to other aspects of the Immunology program.

  2. If a student chooses to use generative AI tools, please note that the only University of Colorado-approved generative AI algorithm is Microsoft Copilot. Adobe Firefly is also University-

approved. Note that many other generative AI platforms are not sanctioned, given concerns about data privacy and security (e.g. ChatGPT, Claude.ai, etc). When using Microsoft Copilot, it should be accessed using University-approved methods, to ensure that data are private (as detailed at https://www.cuanschutz.edu/offices/information-security-and-it-compliance/resources/security-and-compliance-controls/microsoft-copilot).

3. All students must disclose whether they used generative AI or not on the title page of their submitted written comps proposal.
a. If a student does not use generative AI, they should explicitly state this.
b. If a student chooses to use generative AI tools to facilitate writing of their Comprehensive Exam written proposal, the student should: i) declare its use to their assigned, Comprehensive Exam Chair, ii) carefully review and edit any proposed text to ensure scientific accuracy, including appropriate references and iii) acknowledge use of generative AI when they submit their completed proposal to their Examination committee.
c. ***Acknowledgment of the use of generative AI should be stated as follows*** (based on, and modified from, Author guidelines developed by the publisher Elsevier, https://www.cell.com/cell/authors).

Acknowledgement Example…*During the preparation of this proposal, I used [NAME TOOL / SERVICE OF GENERATIVE AI (e.g. Microsoft CoPilot)] to [REASON]. After using this tool/service, I reviewed and edited the content as needed and take full responsibility for the content of this proposal.*

Thesis Defense

IMMU Thesis committee formation

The thesis advisory committee is composed minimally of a committee chair and four other faculty members, all holding current appointments as faculty in the Graduate School. Furthermore, the majority of this committee (i.e., at least 3) must be comprised of the Immunology Program faculty. If the committee has 6 members, then 4 must be Immunology Program faculty.

All committee members must have Graduate Faculty status. If a faculty member does not have a Graduate Faculty status, please ask him/her to contact the Program Director for approval. It takes several months for the Graduate School to approve a faculty member for Graduate Faculty status. Should a member not be approved at the time of the defense, the defense could be voided.

The student's thesis advisor may not be a voting member of the thesis committee.

- IMMU students are required to have at least 1 first author primary research (not review) publication accepted before thesis defense.
- Final defense of the thesis/dissertation must be completed by Graduate School deadlines.
  - **Biosketch Form**
    - This is a graduate school form, not the NIH form
  - **Exam Request**
  - **Thesis Approval form**

- Refer to Program Specific Guidelines in Appendix 4
- Thesis and Dissertation Guidelines
- ProQuest **General Information for Submitting Dissertation & Thesis** page 13 on Graduate School website
- **Watch** how to prepare the correct forms and upload your dissertation.
- AI Policies Guidelines for writing the Thesis.
- If defending after the semester ends you must register for 5 credits of 8990 in the proceeding semester. (Thesis defenses must be tied to the end of the semester deadlines dates please see the links below)

You can find all forms for the comprehensive exam and thesis defense on the Graduate School website under the "Forms" section.

- **Graduate School - Resources & Forms - CU Anschutz**

Thesis Defense Resources and Dissertation Guidelines

- **Thesis & Dissertation/ProQuest Format & Guidelines**
- **Graduate School Deadlines, Forms, Policies**
- See Appendix 5 for program specific guidelines

Policies and Procedures

Immunology Program

The Immunology Program has specific policies and procedures which may go beyond those of ORE, the Graduate School, and the School of Medicine. These policies must be adhered to at all times. **Failure to adhere to any of these policies is grounds for dismissal from the Immunology Program.**

- **Satisfactory Progress & Good Standing:** Students in the Immunology Program must make satisfactory progress each academic year in order to remain in good standing with the program. Students who are not in good standing may be recommended for dismissal from the program by the Program Directors and the graduate student's thesis committee. The list below provides a baseline for what is considered to be satisfactory academic progress but should not be considered a comprehensive definition of good standing.

  - **Requirements Applicable to All Program Years:**

  - Students must receive a grade of **B or better** in all Immunology courses. Immunology courses are identified by the course code IMMU. A B- or below is considered a failing grade.

- A failing grade between a **C and a B-** in an IMMU course may be remediated at the discretion of the course director and the program directors. Remediation will not change the course grade; however, it will remove the requirement to retake the course. Remediation usually includes independent study & a make-up exam. However, this is a one-time courtesy. Students will not be allowed to remediate multiple courses or remediate the same course more than once.

- A failing grade **below a C** or **lack of remediation options** (i.e. student already used their one-time remediation courtesy or the coursework is not suitable to a remediation plan) in a IMMU course require retaking the course. The student must pass the course retake with a B or better.

  - Students must receive a grade **B– or better** in all required non-IMMU courses. Grades below a B- are considered failing grades. Only **one failing grade** is allowed across all required courses.

  - Students must maintain a GPA of **3.0 or higher.** Students whose GPA drops below a 3.0 will be placed on academic probation and must raise their GPA above a 3.0 in two semesters (Fall & Spring; Spring & Summer; Summer & Fall).

  - Students must adhere to the **ORE Honor Code** (found under ORE Policies).

  - Students must adhere to the Immunology Program **AI Policy** as detailed on pages 31 and 48.

  - Students must adhere to the Graduate School Policy for **PhD Student Vacation and Leave** which the Immunology Graduate Program adheres to.

    - Other types of leave and amounts discussed in the Graduate School Policies and Procedures:

      - Parental Leave

- Bereavement Leave
- Unpaid Leave
- Unused Leave at Termination

- To s**ubmit leave requests** to your faculty mentor, the Immunology Graduate Program uses the Predoctoral Leave Application. You will log in using your university credentials.
  - You can also run reports to view your leave activity and current balances.
- Leave balances reset each year on August 15th in alignment with the start of the new academic year. **Unused leave does not carry forward year-to-year**.

Vacation Leave Balance: 80 hours

Sick Leave Balance: 88 hours

Personal Leave Balance*: 8 hours

Parental Leave Balance: 320 hours

- *Juneteenth personal day of observance
- Guide on using this leave application

- Students who are no longer able to remain in their thesis laboratory must secure a new thesis laboratory to continue in the Immunology Program. Deadlines to do so will be clearly outlined in writing. Failure to secure a new thesis laboratory by the communicated deadlines will result in dismissal from the program.
- Students must be respectful of all other members of the CU Anschutz community, including but not limited to other students, faculty, program and ORE staff, and laboratory personnel. While interpersonal conflicts can often be solved through conflict resolution, repeated interpersonal conflicts that interfere with a student's ability to progress in the program are grounds for dismissal.
- Students are expected to attend the weekly Research in Progress (RIP) seminars for the duration of their thesis. All students' 2nd year and after are required to present at RIP once per year for the duration of their thesis.
- Students are expected to attend the Department of Immunology and Microbiology Friday seminars for the duration of their thesis.
- Students are expected to attend the weekly Immunology journal club for the duration of their thesis.

- **Program Year 1:** In addition to all requirements applicable to all program years, students in their first year of the program must meet the below requirements.

- **Students must secure a thesis laboratory** and communicate that laboratory choice to the program by June 1. Students should start in their laboratory after completion of the preliminary exam. The exception to this rule is for students who are approved by ORE and the Program Directors for a 4th rotation. **4th rotations must begin by July 1st.** Failure to secure a 4th rotation laboratory by July 1st is grounds for dismissal. If the 4th rotation laboratory does not result in the successful selection of a thesis laboratory, the student will be dismissed from the program.
- **Students must pass the preliminary exam.** Students who pass the preliminary exam with conditions must meet the conditions of the exam by the stated deadline.

- **Program Year 2:** In addition to all requirements applicable to all program years, students in year 2 are expected to work diligently in their thesis laboratory while exploring and finalizing their plans for their comprehensive exam proposal. Students should work with their thesis mentors to select faculty for a thesis committee, and students should arrange a thesis committee meeting no later than March 15th. Thesis mentors and students are encouraged to keep lines of communication open and bring forward any concerns to the Program Directors to prevent situations from escalating towards a student dismissal from the lab and/or program.

- **Students must pass the comprehensive exam** at the end of year 2, generally given mid-May. If a student passes with conditions, those conditions must be completed within the time frame given by the examining committee.

- **Program Year 3:** In addition to all requirements applicable to all program years, students in year 3 must meet the below requirements.

- Students are required to have a thesis committee meeting every 6 months. This will typically mean scheduling a second committee meeting 3-4 months after passing their comprehensive exam. Committee meetings should be held every 6 months until they defend.
- Students are responsible for initiating the planning of these meetings. If a student is unable to schedule a meeting due to faculty being unavailable or non-responsive, students should make their committee chair, mentor, and the program directors aware so that they may intervene on the student's behalf.

- **Program Year 4+:** In addition to all requirements applicable to all program years, students in year 4 and beyond must meet the below requirements.

- If the Thesis Committee deems progress towards the thesis project inadequate, the student, thesis mentor, and thesis committee chair will meet with the Program Directors to ascertain whether the student can continue in the program. A recommendation of dismissal is a possible outcome of these deliberations. If the student is allowed to proceed further, an additional unsatisfactory assessment of thesis work will be cause for a mandatory recommendation for dismissal to the Graduate School without further review, subject only to appeal by the student (see appeals).

- **Appeals:** A student will have 7 days to appeal any decision by the program directors or thesis committee that affects them, including a recommendation for dismissal from the program. Such appeals must be in writing and emailed to the Program Directors and chair of the thesis committee. The program directors will respond to appeals within 7 days of receipt. Students will be given the opportunity to meet in person with the program directors to discuss their appeal if they desire.

  Unchallenged decisions or decisions after appealing to the program directors regarding the correction of academic deficiencies are final. Decisions regarding recommendation for dismissal to the Graduate School may be appealed to the Dean of Graduate Studies.

Office of Research Education

- Office of Research Education
- Conflict of Interest (reference to Comps and Thesis committees)
  - Honor Code and Committee Procedures
- Anschutz Email address communication
- Student Badge Requirement
- Financial Aid for Graduate Students
- Residency
- Tuition, fees and stipend
  - All incoming Graduate Students are offered a financial aid package from the Graduate School that includes an annual stipend of **$41,912** (approved for 2025-2026 Academic Year), tuition costs, and payment of individual student health insurance and activity fees. The Stipend is evaluated on an annual basis for the cost of living. Please note that this support covers the period July 1, through June 30 for continuing PhD students, and August 15, through June 30 for first year PhD students. Payment of annual stipend, along with tuition costs, fees and individual health insurance is dependent upon satisfactory academic progress as defined in the Graduate School and Program policies.

Program Events and Activities

Research in Progress (RIP) Talks

- **Required** to attend in-person weekly seminars
- Wednesdays, 10a-11a, Hensel Phelps West Auditorium
- Second years and above IMMU program students will be scheduled according to cohort to present one RIP talk in the academic year calendar.

Annual Department Conference Retreat - CIMC

- **Expected to attend** to attend in-person the first week of the fall semester
- Program will pay for IMMU students conference registration
- Student will work with their faculty mentor to pay the remainder of the costs associated with attending the conference

Student Research-Related Program Activities

Students are **expected to attend** at least 70% of these activities

- Student Planned Program Retreat
- Student Invited Speaker Seminars
- Journal Club

Training grants & endowments

Trainees are appointed based on criteria listed below but always in consideration of being able to submit a competitive renewal for this important resource.

•Nominations are requested by email from the T32 training grant faculty as we want the PIs to nominate deserving students. The specific materials that are requested are the following:

-Brief letter of interest from candidate (including statement of interest in future scientific career; not to exceed 1 page)
-CV or NIH biosketch of candidate
-Letter of recommendation from current mentor with ~half page description of the trainee's research project.

•The following are the general criteria that the NIH/NIAID require:

-Candidates must be a US citizen or permanent resident/green card holder to be eligible.
-Underrepresented minorities, disabled and disadvantaged candidates are especially encouraged to apply.
-Candidates must be in compliance in attending every 4 years of Responsible Conduct in Research. In our Immunology Training Program this is fulfilled by attending IMMU 7607: "Science as a profession: responsible conduct of research and beyond" in the fall semester (and per NIH Grants Policy).

•The leadership of our T32 training grant further request that:

-Proposals are expected to have a focus on immunology.
-Trainees appointed to the T32 are expected to complete full fiscal years. That is, we want to avoid supporting a trainee for only a partial year.
-All predoctoral fellow trainees supported by this T32 are expected to attend the Research-in-Progress and Departmental seminars as these are considered crucial training events in our

training program. Thus, if you as a faculty member nominate a trainee that is appointed to the training grant, then it is understood that the trainee (and PI) will make every effort to attend our program activities (RIP, departmental seminars and - for graduate students - journal club).

•The selection committee is comprised of a handful (at least 4) of senior and mid-level T32 training faculty that are specifically asked to consider the following in ranking the nominations. Any faculty on this selection committee must excuse themselves from evaluating any nomination from their own lab or with any clear conflict of interest.

-Trajectory of the student – where did they start from, where are they now and where are they hoping to go with their training. Are they engaged in their research and the training program? Have they been productive (e.g. published) in their previous research experiences? Have they or will they apply for F (NRSA) award? Importantly, when we submit a competitive renewal we must account for each of our appointed T32 trainee for the previous 5 and 10 years.
Thus, T32 trainee appointees that are still actively engaged in research in some capacity 5 – 10 years later is favorably looked at by the NIH (or, minimally, using their training and PhD degree in some meaningful manner as considered by the NIH). In particular the NIH wants to avoid supporting a T32 trainee that then leaves science.
-Typically, the trainee has successfully passed the comprehensive exam. Exceptionally, deserving serious engaged pre-comp students will be appointed. In years past we restricted appointments to senior grad students (years 3-5) but learned that when a student graduated before completing a full year appointment, then the remaining stipend not paid is lost and recouped by the NIH
-The student's training program – vast majority are from the IMMU grad program but on occasion we fund students from other programs if their project is heavily immunological
-The engagement of both student and PI in training activities – RIP, dept seminars, annual conference, journal clubs; The more students and their PIs attend and participate in these events the better the training atmosphere; thus it is advantageous if faculty and students regularly contribute to the various training activities
-Meeting deadline for submission of application materials

Resources and Support

Students can access a variety of campus services through the links provided below. The Office of Student Affairs is committed to supporting CU Anschutz students by offering guidance and assistance in navigating campus resources. For detailed information about available services or to schedule an appointment, please visit the Office of Student Affairs webpages. For additional questions or support, you may contact the office via email at StudentAffairs@cuanschutz.edu.

- Office of Student Affairs
  - Campus Life
  - Student Support
  - Health & Wellness
  - Student Resources
  - Student Services
- Students Resource Directory
  - Includes all campus resources
- Academic Calendar
- Residency
- Badging Office
- Student Parking & Transportation
  - Eco Pass
  - Campus Circulator (Transportation service)
  - Medical Campus Rail Shuttle
- Office of Information Technology
- Student Health Insurance
- Office of Research Education – Concern Reporting Form (Maxient)
- CU Anschutz Student Outreach and Support Referral
- CU Anschutz Student Request for Medical Leave of Absence
- Graduation Deadlines Thesis, Anschutz
- Thesis & Dissertation/ProQuest Format & Guidelines

Appendices

Appendix 1

- **Medical Scientist Training Program**
  - 2025-2026 HANDBOOK

- **Biomedical Sciences PhD Program**
  - 2025-2026 HANDBOOK

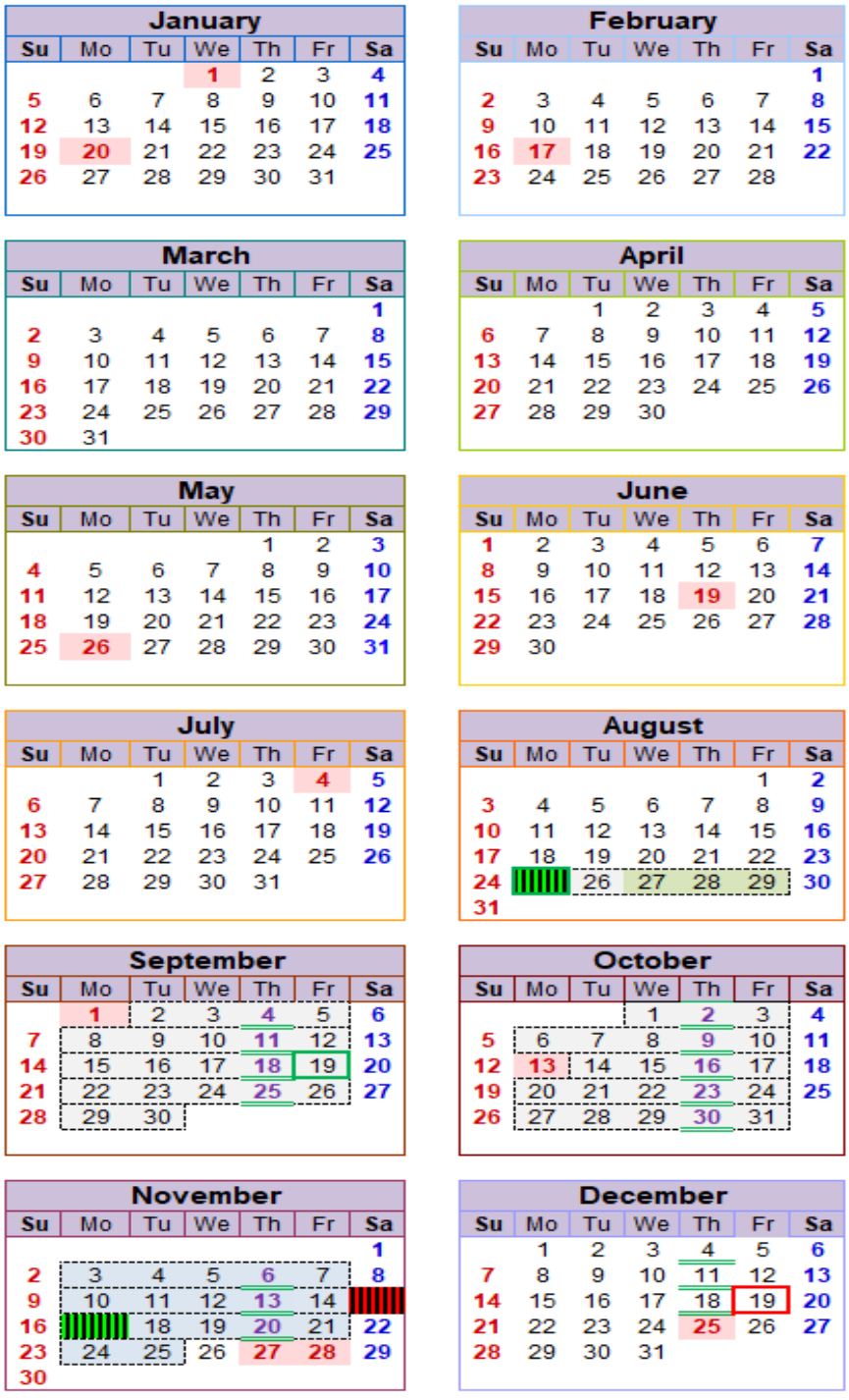
Appendix 2

- IMMU Course Calendar **- Students starting the IMMU program in Fall 2025**

Calendar Key:

#	Holidays
#	Semester starts # Semester ends Rotation starts Rotation ends
#	BMSC 7806 - Foundations in Biomedical Sciences MTWThF 8-10 AM, 9 weeks, 6 credits, required
#	CIMC "Colorado Immunology and Microbiology Conference," Steamboat Springs, WThF August 27-29, 2025, required
#	BMSC 7810 - 003 Core Topics A Inflammation, MTWThF 8-10 AM, 3 weeks, Mercedes Rincon, 2 credits, required
#	IMMU 6066, Statistics for the basic sciences, asynchounous & Th 10:30-11:30, Scott Thompson, 2 credits, required
#	IMMU 7662 - Immunology, MWF 3-5, Maki Nakayama and Scott Thompson, 5 credits, required
#	AAI 2026, Boston
#	Immunology Program Prelims, ThF, required
#	R Boot camp -- MIMS 6071 MWF 1-3, Scott Thompson, encouraged to prepare for IMMU 6110
#	CIMC, Colorado Immunology and Microbiology Conference (dates in 2026, 2027 *anticipated*)
#	IMMU 6110: Introduction of Bioinformatics, MWF 3-5, Tonya Brunetti and Laurent Gapin, 5 credits, required
#	IMMU 7607 Science as a Profession, F 9-11, Roberta Pelanda, 1 credit, required
#	IMMU 7604, Special Topics in Signaling, TTh, Andrew Getahun, 1 credit, 2/3 required
#	IMMU 7605, Workshop in Scientific Writing, 1-3 PM, Leslie Berg, 6 weeks, 1 credit, required
#	IMMU 7602, Special topics in Tumor Immunology, MF, 2 hours, 1 credit, 2/3 required
#	IMMU 7608, Special topics in Infection, MF, 2 hours, 1 credit, 2/3 required
#	Immunology Program Comprehensive exams, required
#	AAI 2027, Los Angeles

2025



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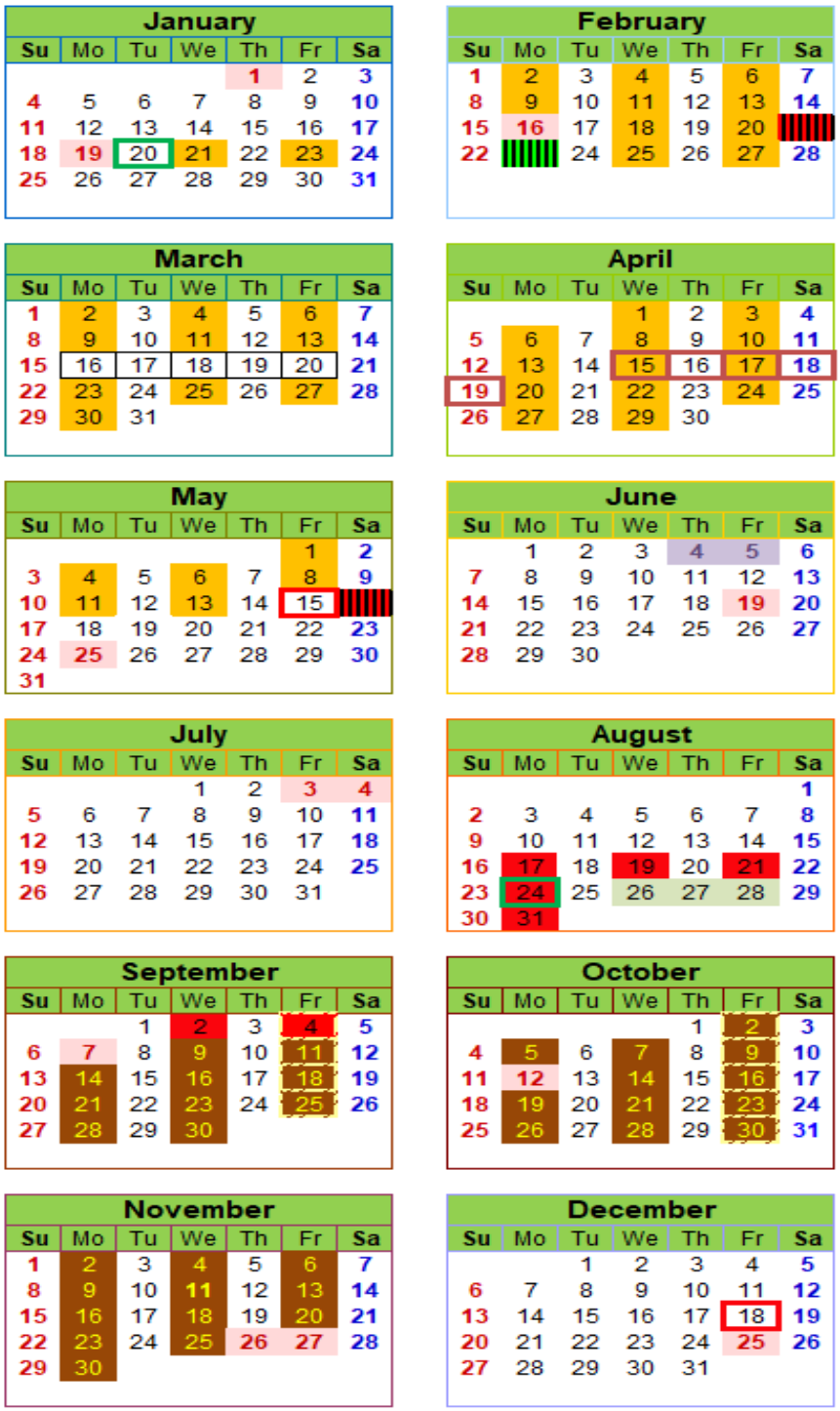
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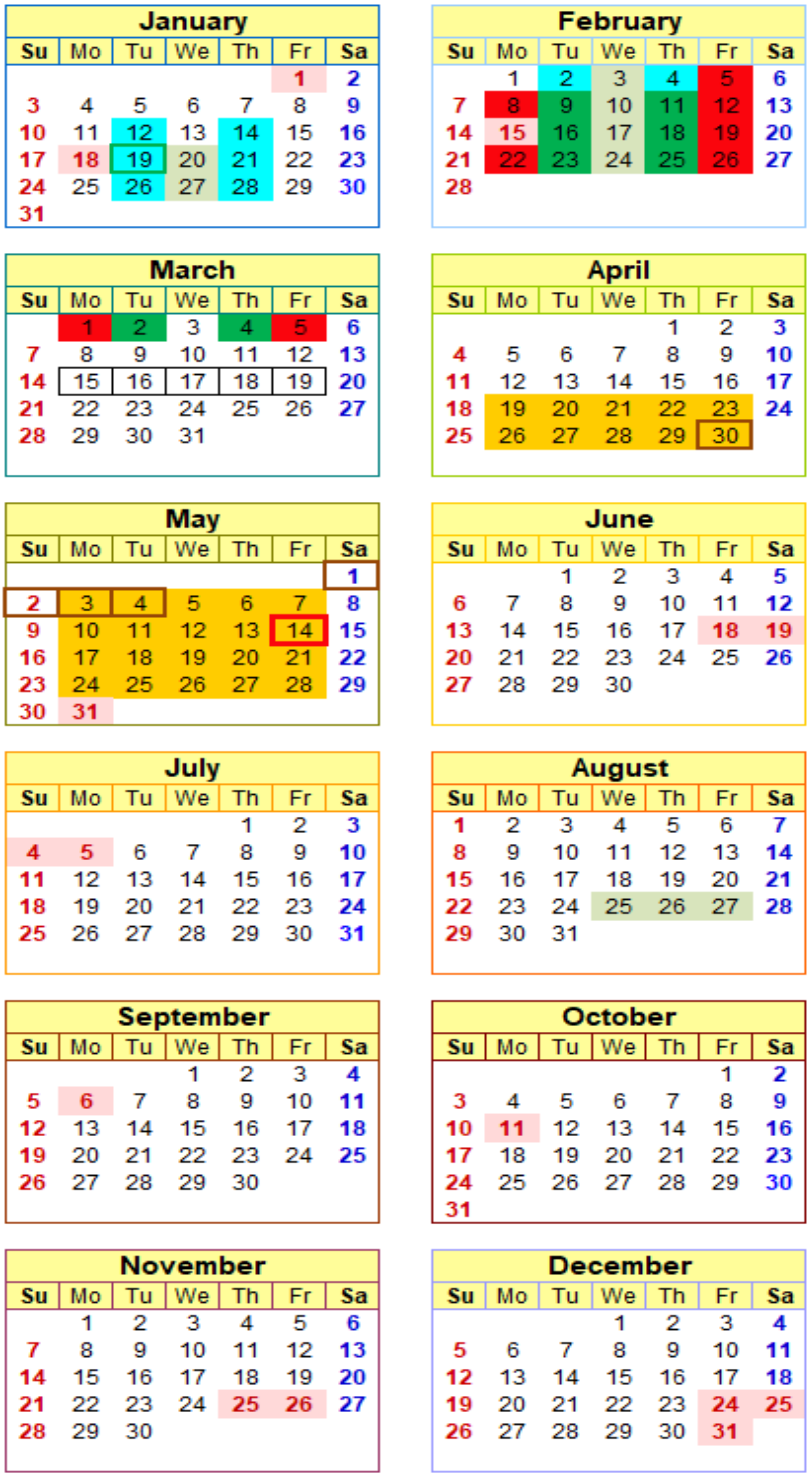

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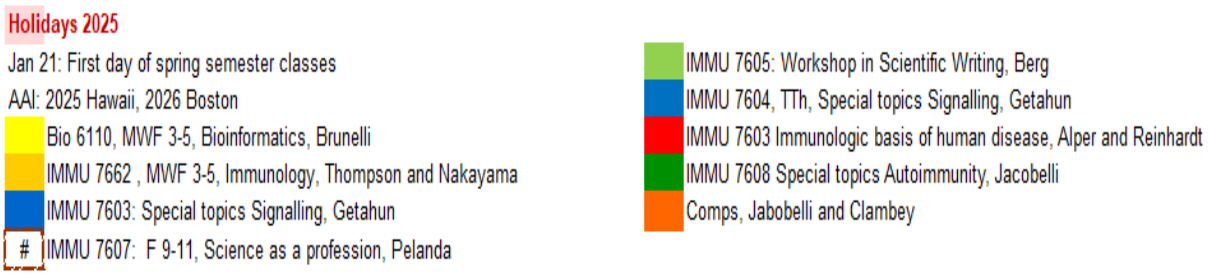
Appendix 3

- IMMU Course Calendar - **Students starting the IMMU program in Fall 2024**

Calendar Key:



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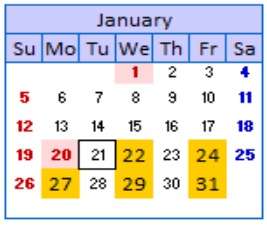
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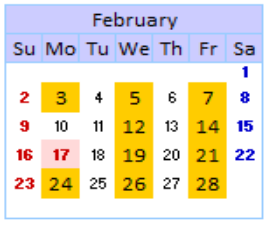
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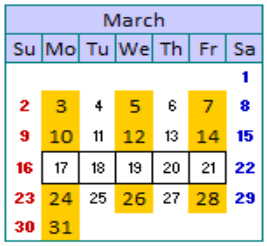
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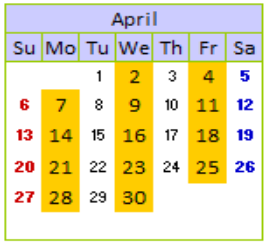
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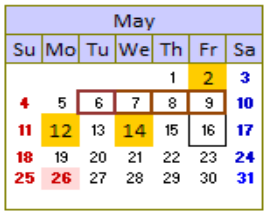
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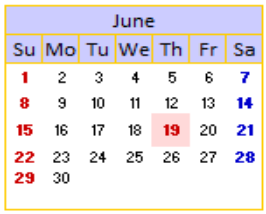
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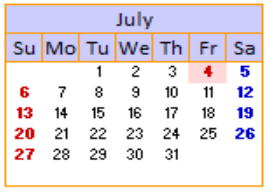
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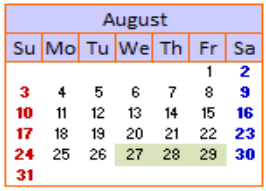
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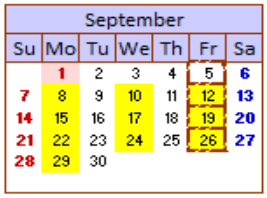
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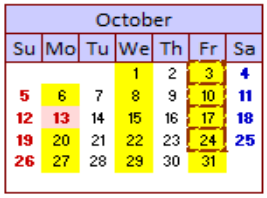
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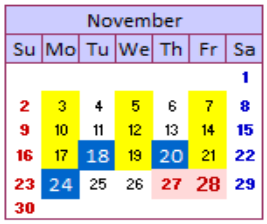
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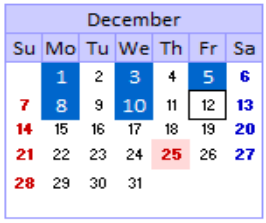
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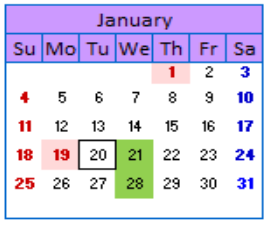
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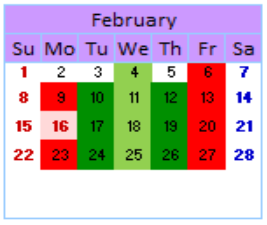
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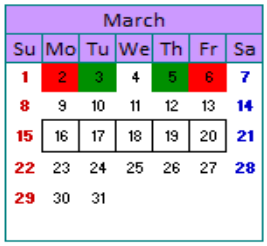
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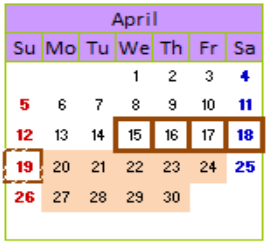
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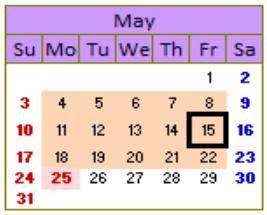
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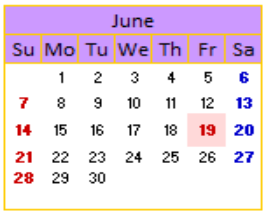
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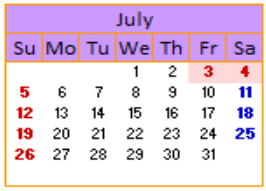
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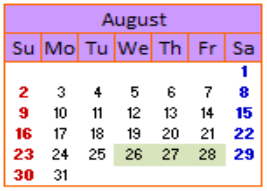
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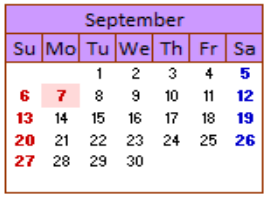
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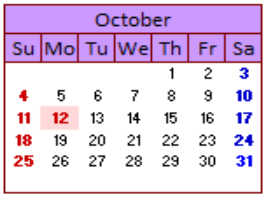
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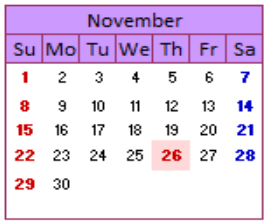
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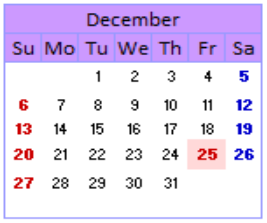
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Appendix 4

- Thesis Committee Report Template (provided by Immunology PhD Student)

A one-page thesis committee report should be submitted to the thesis committee one week before each meeting, starting at the second thesis committee meeting and every meeting thereafter. The report should address the following:

1) State your overall thesis research goals and hypotheses. Incorporate any changes to those goals resulting from previous committee meetings.

2) What were previous concerns/recommendations of previous thesis committee meeting?

3) What have you accomplished since then? Discuss how you have addressed previous recommendations, if you did not then why not (i.e., not time, took different direction, etc.). Include any new methods/techniques you may have learned, any literature sources or collaborators that were significant.

4) How did your results affect your original hypothesis or goals? (confirm, deny, modify).

5) Based on the data/results described in (3), state briefly your next steps in elucidating the hypotheses.

Appendix 5

- IMMU Specific Thesis Defense Requirements and Guidelines

Publication Requirement

Publications are the final step of research done in the lab. Public funds support the research endeavor and all scientific research builds on the work and results of others. For these reasons, all scientists are obligated to share their findings with their peers and the public.

Students in the Immunology program are expected to, at a minimum, have published one first author research publication upon graduation. A co-first authorship may be considered to satisfy this requirement in specific, approved, situations. To meet this goal, a qualifying paper (as judged by the thesis committee) must be **accepted** for publication prior to the student setting a thesis defense. To ensure this requirement can be met, each student, thesis committee member, and mentor are expected to begin working towards achieving this minimum requirement as soon as the student enters the thesis lab.

Exceptions to this requirement can be made on a case-by-case basis. This will be approved only in rare cases where there are extenuating circumstances. Approval of any exceptions shall be recommended by the thesis committee chair for approval by the Program Directors. If one of the Program Directors is in conflict (e.g. due to membership on the thesis committee or as the mentor), the other Program Director will evaluate and approve or decline the exception. If both Program Directors are in conflict, the Program Steering committee will evaluate and approve or decline the exception.

Writing and Defending the Dissertation

The Graduate School requires a specific format to be followed when writing the dissertation and that is provided in a style and policy manual for writing theses and dissertations. Information regarding the graduate school requirements, forms, and policies and procedures be found on the Anschutz Graduate School webpage: https://graduateschool.cuanschutz.edu/forms-resources/resources

These documents should be consulted carefully by every student prior to embarking on the writing and submission of their dissertation. A brief summary of the most salient aspects of the dissertations writing and submission process is provided below.

Dissertation format:

The overall format of the thesis should generally follow the outline below :

Chapter 1: Introduction/background/hypothesis

-this should be the background for your whole thesis project and end with your overall hypothesis

Chapter 2: Materials and Methods

-this should be the materials and methods for all experiments with detail sufficient for the reproduction of the data

Chapter 3-?: Results

-this should include an introduction, results and interpretation/discussion for the topic of the chapter

-any publications should be adapted as separate chapters.

Final Chapter: Discussion of how your thesis work fits into the broader immunologic landscape

-include future directions

Dissertation submission

Prior to submitting your dissertation to the entire thesis committee, your dissertation must be approved by your thesis mentor and Committee Chair. All members of the committee must receive a final version of your dissertation two weeks before the scheduled thesis defense date. In order to meet this deadline, you should provide your completed dissertation to your thesis mentor and committee chair at least one month in advance of the two-week deadline for the remaining committee members. The thesis should be publication-quality, i.e., words spelled correctly, figures and tables labeled correctly, Table of Contents must be completed, Bibliography included and appropriately annotated, etc. Please see the IMMU 2025 thesis format guidelines in this appendix.

The Graduate School also has a Format Guide for Theses & Dissertations carefully. The ProQuest link and instructions for submitting your thesis to ProQuest are also included in the Format Guide.

The student is responsible for coordinating and scheduling the defense with the thesis committee. The student is also responsible for contacting the program administrator to assist in establishing a room reservation and the preparation and posting of seminar notices.

Arrangements for the thesis defense must be made in the Graduate School Office at least two weeks prior to the scheduled defense. The defense must be given no later than three weeks prior to the date on which the degree is to be conferred. You must be registered for 5 credits of IMMU 8990 at the time of the defense.

Final Dissertation Defense

The oral defense consists of two parts: 1) a public presentation of the thesis research and its conclusions, and 2) a private exam with only the student, the thesis committee and the thesis mentor present. All 5 thesis committee members are expected to be in attendance. In the event that all committee members cannot be present a minimum of 4 committee members are needed to meet graduate school requirements. A stand in committee member can be chosen for the final defense if 4 of the thesis committee members cannot be present. All committee members are expected to be present in person. If this is not possible, the student must discuss other options with the thesis committee chair and the program directors. The thesis advisor should be present at the thesis defense but will not participate in either questions or answers asked by the thesis committee. After the committee chair has determined that no further questioning of the student is needed, the student and mentor will leave the room of the committee to deliberate the outcome of the exam. As in the comprehensive exam, possible outcomes are pass, pass with conditions, or fail. Conditions for the pass and time frame for resolution are established by the committee and must fall within graduate school guidelines. Students are allowed

one retake of the exam if the initial outcome is a fail. If the exam retake is not successful, this will be grounds for dismissal from the program.

Use of generative artificial intelligence (AI) in writing the Thesis Dissertation.

1. CU Anschutz Graduate Student guidance: Primary guidance on the use of generative AI for graduate students can be found under "Guidelines for Graduate Students" at https://graduateschool.cuanschutz.edu/forms-resources/generative-ai-guidance

2. Writing a scholarly dissertation is a cornerstone of the PhD process. The rapid rise of generative AI tools (e.g. ChatGPT) has provided new opportunities and challenges for the writing process. Use of generative AI tools to facilitate writing of the dissertation is at the discretion of the student but should abide by the following principles.

    a) Students should err on the side of caution when using generative AI and writing their dissertation. If a student chooses to use generative AI, its use should focus on editing or revising the student's original written text but should not be used to generate text itself. Use of generative AI to generate (i.e. "write") text could be problematic, potentially running afoul of concerns about plagiarism, a serious academic concern.

    b) If a student chooses to use generative AI tools, please note that the only University of Colorado-approved generative AI algorithm is Microsoft Copilot. Adobe Firefly is also University-approved. Note that many other generative AI platforms are not sanctioned, given concerns about data privacy and security (e.g. ChatGPT, Claud, etc). This is particularly relevant for the dissertation. When using Microsoft Copilot, it should be accessed using University-approved methods, to ensure that data are private (as detailed at https://www.cuanschutz.edu/offices/information-security-and-it-compliance/resources/security-and-compliance-controls/microsoft-copilot).

    c) If a student chooses to use generative AI tools to facilitate writing of their dissertation or creating images, the student should: i) declare its use to their Thesis Chair, ii) carefully review and edit any proposed text to ensure scientific accuracy, including appropriate references and iii) acknowledge use of generative AI when they submit their completed proposal to their Thesis committee. Acknowledgment of the use of generative AI should be explicitly stated within the dissertation (e.g. on the Acknowledgments page) as follows (based on, and modified from, Author guidelines developed by the publisher Elsevier, https://www.cell.com/cell/authors).

During the preparation of this dissertation, I used [NAME TOOL / SERVICE OF GENERATIVE AI (e.g. Microsoft Copilot)] in order to [REASON]. After using this tool/service, I reviewed and edited the content as needed and take full responsibility for the content of this proposal.

PhD Graduation Requirements

- 30 semester hours of graded (didactic) course work including 3 credit hours of rotations (7650).
- 30 semester hours of thesis (8990) credits.
- A "pass" grade for the preliminary and comprehensive examinations.
- Completed and approved thesis, and a pass on final dissertation defense.

Required Forms for Thesis Defense Seminar, Examination, and Dissertation Submission using ProQuest

After scheduling your thesis defense date and time, you will need to reserve two rooms for that day, 1) for your thesis defense seminar and 2) for your thesis exam defense with committee. You may book these yourself and inform your Program Administrator (PA) once confirmed **or** ask your PA to book them for you.

Forms and requirements for your thesis defense:

Graduate School required forms to be submitted **BEFORE** your defense date:

- **Exam request form** – due to your PA one month before thesis defense date
- **Biosketch form** (not NIH bio sketch) – due to PA one month before thesis defense date
- *Both forms can be found at https://graduateschool.ucdenver.edu/forms-resources/resources*
- *Forms are listed under the forms tab and utilize DocuSign for signature, completion and submission.*
- *Please make sure that each of your committee members has a Graduate Faculty Appointment from the Graduate School https://gs.ucdenver.edu/graduate-faculty-directory/*

Graduate School forms to be submitted **AFTER** your defense date:

- **Thesis Defense Report** – your chair will have this form from the Graduate School and will route the form for committee's signatures through DocuSign.
- **Thesis Approval form** - **you** will initiate this form for signature routing and completion using DocuSign.
- *Both forms can be found at https://graduateschool.ucdenver.edu/forms-resources/resources*
- *Forms are listed under the forms tab and utilize DocuSign for signature, completion and submission.*

Submitting your written thesis to ProQuest:

- **You** will initiate this step when your Thesis Approval form has been submitted to the Graduate School.
- There are some helpful links re: ProQuest submission embedded in the 'Graduation Deadlines Thesis 2025-2026, Anschutz' page found under the Deadlines tab on the Graduate School resources page, https://graduateschool.cuanschutz.edu/forms-resources/resources

Tips when starting to think about a defense date:

- Start talking with your Faculty Mentor about your last day of work that will coincide with your last day to be paid

- Pay attention to the end dates associated with the student health insurance (https://www.cuanschutz.edu/student/health-wellness/student-health-insurance)
- View the date deadlines for each semester on the 'Graduation Deadlines Thesis 2025-2026, Anschutz' page found under the Deadlines tab on the Graduate School resources page, https://graduateschool.cuanschutz.edu/forms-resources/resources

Appendix 6

- Individual Development Plan (IDP)

A. Annual Progress Report

1. What were your main goals for the past year?

2. Which goals did you meet? If you did not meet a goal, why not?

3. List all major accomplishments this year in career development (e.g. presentations, publications,

teaching, committees, course work, etc.). Include mentoring of graduate or undergraduate

students in the laboratory.

4. Describe your level of satisfaction with your career development in the past year using a scale of

1-5 with 1 being highly satisfied. Provide a rationale for your choice.

1 – Highly satisfied

2 – Somewhat satisfied

3 – Neither satisfied nor dissatisfied

4 – Somewhat dissatisfied

5 – Highly dissatisfied

B. Self-assessment

Core Competencies	No basis to evaluate	Needs development	Appropriate to career stage	Strength	*Adapted from Science Careers MyIDP, which is based on the National Postdoctoral Association's Core Competencies for Postdoctoral Scholars*
Scientific Knowledge					
Broad based knowledge of science					
Deep knowledge of specific research area					
Critical evaluation of scientific literature					
Research Skills					
Technical skills related to research area					
Experimental design					
Statistical analysis					
Interpretation of data					
Creativity/innovative thinking					
Navigating the peer review process					
Communication					
Basic writing and editing					
Writing scientific publications					
Writing grant proposals					
Speaking clearly and effectively					
Formulating and asking sound questions					
Presenting research to scientists					
Training and mentoring individuals					
Seeking advice from advisors and mentors					
Negotiating difficult conversations					
Professionalism					
Demonstrating workplace etiquette					
Complying with rules and regulations					
Upholding commitments and meeting deadlines					
Maintaining positive relationships with colleagues					
Contributing to discipline (e.g. professional society member)					
Management and Leadership Skills					
Providing instruction and guidance					
Providing constructive feedback					
Dealing with conflict					
Planning and organizing projects					
Time management					
Managing research resources responsibly					
Serving as a role model					
Responsible Conduct of Research					
Careful recordkeeping practices					
Understanding of data ownership/sharing issues					
Demonstrating responsible authorship/publication practices					
Demonstrating responsible conduct in human/animal research					
Able to identify and address research misconduct					
Able to identify and manage conflict of interest					
Career Advancement					
Creating and maintaining a professional network					
Identifying career options					
Tracking professional development and accomplishments (e.g. writing and maintaining a CV or résumé)					
Interviewing					

C. Goals for the Upcoming Year

1. In the upcoming year, what:

a. Publications do you plan to submit?

b. Meetings, conferences, and workshops do you plan to attend?

c. Fellowships or other funding applications do you plan to submit?

d. Other professional training or activities do you plan to participate in (e.g. teaching, university service, courses, internships, etc.)?

2. Career goals

a. Approximately when do you hope to finish your predoctoral training?

b. If you plan to finish within 12-18 months, estimate when you will begin a job or postdoctoral search.

c. What is your “Next Step” career goal (e.g. postdoctoral training, research job, science policy)?

d. What is your long-term career goal? (Science Careers MyIDP can help you evaluate your

options in light of your interests and skills.)

e. What further training is required before it is appropriate to start a career search?

3. How can your PI help you achieve your goals for the upcoming year? What do you need from your PI?