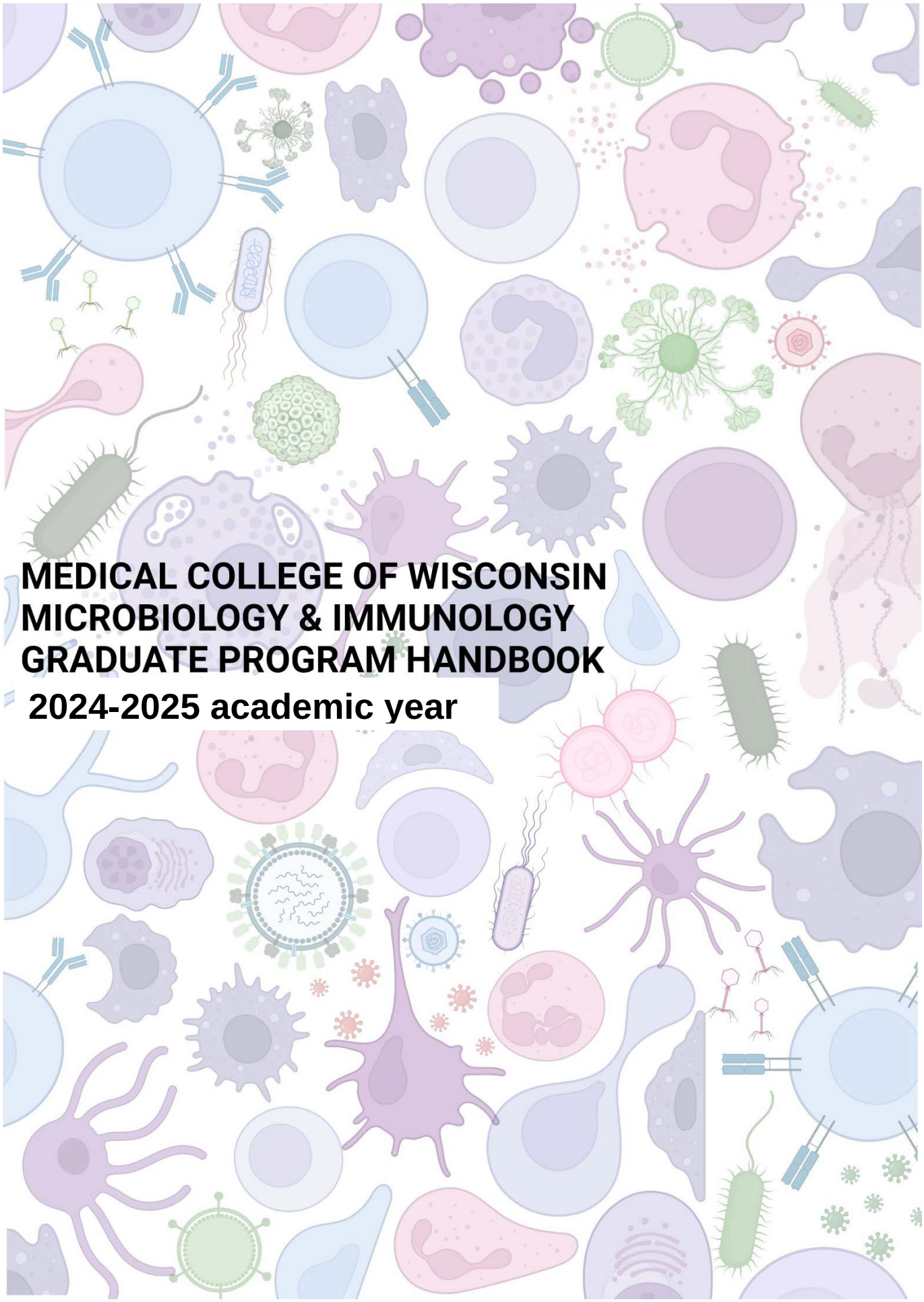

MEDICAL COLLEGE OF WISCONSIN MICROBIOLOGY & IMMUNOLOGY GRADUATE PROGRAM HANDBOOK

2024-2025 academic year

Contents

Welcome

Welcome to the Department of Microbiology and Immunology. Whether you matriculated thorough IDP, NDP, MSTP or the M&I Department Admission program, you are M&I students at the start of your dissertation research (MSTP), from the first day of graduate studies (Department Admission), or upon entry into the M&I laboratory for dissertation research (IDP students will maintain "dual citizenship until early November of your second year of graduate studies when the IDP citizenship ends). This handbook outlines expectations of yourself, your PhD mentor, M&I faculty, and the graduate program directors. It also outlines resources available to graduate students and important milestones throughout your graduate career. The timing of milestones is the same for all M&I students, but the exact dates for expected milestone completion will depend on the first date that you enter your laboratory for your dissertation research.

First and foremost, it is the sole responsibility of predoctoral students in the Microbiology & Immunology Graduate Program to be familiar with and meet deadlines listed in this handbook, and to obtain and submit completed forms to the Graduate School and the Microbiology & Immunology Graduate Program, as applicable. Students are also responsible for keeping a copy of the completed forms for their own records and providing a copy to their mentor for their respective records if requested. Scheduling biannual committee meetings is the sole responsibility of the student as is making sure all forms associated with committee meetings are completed, signed by all committee members and given to the respective administrative staff for record keeping. If the committee meeting is not documented by the Microbiology & Immunology Graduate Program with the appropriate paperwork, the committee meeting never happened.

Section 1. Student Resources

Maintaining personal wellness including mental and physical health are important aspects of life, including graduate school. This includes occupational, intellectual, financial, mental/emotional, physical, spiritual, environmental, and social wellness.

A. Student Health and Wellness

General resources available regarding student health and wellness can be found here.

B. Mental Health Resources

Mental health support is available free of charge and additional information can be found here.

C. Parental/family leave

Parental leave policies are outlined in the MCW All Student Handbook which can be found here. Clear, timely communication with graduate school personnel (as outlined in the All Student Handbook) as well as with your PhD mentor and graduate program directors will help to maximize your wellbeing while maintaining expectations for degree completion.

D. MicroMoms- this is a departmental group of faculty, staff and students who gather once a month over the lunch hour to connect over their shared experiences of balancing work/school and motherhood. All moms (expectant through empty nesters) are more than welcome. This is a casual group and attendance is entirely voluntary. If you wish to

be added to the e-mail list for meeting invites, please connect with Michelle Riehle, mriehle@mcw.edu

E. Student Connection Groups: MCW Graduate School Connection Groups: These are student-led spaces focused on specific groups of learners (e.g., Student Parent Group, LGBTQ+ Group, International Student Group). Students may email Allison Schneider at allischneider@mcw.edu for more information.

F. MCW Graduate School Career Center MCW Graduate School Career Services offers a diverse array of services to help MCW graduate students and postdoctoral fellows explore and achieve their career goals. More information is available here.

G. Graduate Student Association

GSA provides a voice and fosters communication among the ~300 MCW graduate students. More information including involvement in GSA student committees is available here

H. MyIDP (Individualized Development Plan), Student Portfolio, and Biosketch

An individualized development plan is a tool often used in industry and adopted by academia to help individuals define and pursue their career goals. MyIDP is a web-based career-planning tool designed for PhD students and postdocs in the sciences. MyIDP can be found here.

The student portfolio is a version of Curriculum Vitae (CV) that documents scholarly accomplishments and professional activities throughout Ph.D. training. While the student portfolio is optional, M&I students are highly encouraged to create and periodically update this document. In addition to promoting the sense of accomplishment, a CV is typically required by a majority of Ph.D. employers including potential post-doctoral advisors. Timely and detailed updates of all the educational and professional activities in the student portfolio will go a long way during the transition to a post Ph.D. career step. Student Portfolio form is provided within this handbook (see appendix).

Biosketch is another widely used tool and represents an abbreviated version of the CV with a specific focus on scholarly activities and honors. It is the biosketch and not the CV that is required for any predoctoral fellowship and other grant applications, particularly from NIH. M&I students are expected to have an up-to-date NIH style biosketch. Please contact the M&I research program coordinator (Maddie O'Malley,momalley@mcw.edu) or your dissertation mentor for the most recent NIH Biosketch form.

I. Grant and Budget Support

Writing graduate fellowships and other grant proposals is an important part of your graduate training. In addition to developing your writing and grantsmanship skills, a successful predoctoral fellowship application offers an unbiased evaluation of your standing as compared to your peers nationwide and is a critical milestone to support your competition for the next career step.

Departmental administrative support is crucial for both grant submission and the spending and documenting of spending grant awards. The M&I research program coordinator (Maddie O'Malley, momalley@mcw.edu) leads all processes associated with fellowship applications and award administration in Microbiology & Immunology (M&I) department. The M&I office has

developed a number of tools, including checklists, that facilitate fellowship application submission. To ensure the application will be successfully submitted **please contact the M&I research program coordinator at least 45 days before the fellowship deadline** . Most of the fellowships (and all NIH applications) require a "graduate program statement" that is individually crafted for each predoctoral applicant by the M&I directors. **Please contact both program directors at least 45 days before the fellowship deadline with your intent to apply to a specific funding agency.** If this timeline is not met, the directors and department grant specialist may not be able to complete the required steps and paperwork prior to the application deadline.

Pre-award support

Despite all the resources and administrative support provided by the research program coordinator, you are the Principal Investigator on the fellowship application and it is ultimately your responsibility to assure the accuracy of each grant component, the timely submission for the internal MCW review (Grants and Contract Office), and ensuring that the application is received by the funding agency (e.g. NIH) by the specified deadline. The research program coordinator will conduct an annual workshop for those submitting F31 applications. As a M&I PhD student, you will also participate in the fellowship writing course.

Post-award Support

After a grant has been awarded you will receive administrative support from the department to assure accurate allowable spending within the budget allocated. Just as with any extramural award, you are ultimately responsible for all expenditures on the funded grant. Departmental administrative support will be provided and you will receive updates on the available grant balance and any costs incurred.

J. Professional Development

Throughout your graduate career you will have many opportunities to engage in activities aimed at your professional development.

- learning to give presentations to a diversity of audiences including the layperson.
- engaging with bacteriologists, virologists and immunologists who visit campus to give seminars—each seminar speaker attends a trainee lunch.
- participating in journal clubs
- hosting a seminar speaker
- honing skills in professional communication
- networking with M&I Graduate Program alumni
- presenting to a broad audience through GSA and other institutionally sponsored forums.

While participation is not required, investment in your professional development will be helpful throughout your career.

Section 2. Training Expectations

A. Expectations of the student

Prior to and as a requirement for PhD degree conferral you are expected to reach competitive skill levels in the following areas:

- Scientific presentation

- Scientific writing (manuscripts and grant proposals at a minimum)
- Critical and analytical thinking
- Evaluation and synthesis of relevant published research findings
- Leadership and ownership of your thesis research project
- Collegiality and teamwork
- Participation and contribution to the professional activities of your scientific community, both local, regional, national and international

You are expected to engage and demonstrate intellectual curiosity within departmental courses, seminars, and scientific interactions within and outside the Microbiology & Immunology community. You are expected to be aware of course and exam requirements and to complete all necessary milestones and associated paperwork by specified deadlines for your entry program. Regardless of the entry track, once you are officially a Microbiology & Immunology student, you are expected to facilitate scheduling of bi-annual committee meetings and providing the necessary paperwork and updates before and after the meeting.

B. Expectations of the mentor and the dissertation committee

By accepting the Ph.D. student into one's group, the mentor is expected to be fully committed to creating and upholding the training environment that will meet the individual student's specific career needs and facilitate a competitive transition to the next training/career step of student's choice. As a part of this process, mentors will provide clear expectations and frequent feedback to student regarding progress towards degree and training completion. As specified in the skill set outlined in the student's expectations above, conferring of a PhD degree requires an individual PhD student maturing to the point of project ownership including idea generation, experimental design and troubleshooting, data collection, analysis, and data presentation.

By agreeing to become a part of the student's dissertation committee, the faculty are expected to support the student in all general and unique aspects of their training and transition to the next step of their training/career. In addition to providing their scientific expertise the faculty are expected to be strong student advocates.

Meetings: The dissertation committee members, mentor, and student are expected to participate in thesis committee meetings every 6 months as scheduled by the PhD student. Dissertation committee meetings will include a written report authored by the student, signed by all committee members and submitted to Microbiology & Immunology program directors and responsible administrative staff. The committee member selected as the Wellness Advocate is expected to lead and moderate the mentor-free confidential discussion at the end of each committee meeting to address any items the student elects to bring to the committee and advocate for student's needs outside of the confidential discussion, if authorized by the student.

C. Expectations of the program directors

The primary function of the program directors is to oversee activities and processes that support successful training of Ph.D. students in the Microbiology and Immunology program. In addition to those administrative duties the program directors also serve as student advocates to ensure each trainee in the program achieves their individual goals. The program directors will also serve as liaisons between the trainees, Microbiology & Immunology faculty, and the Department Chair and facilitate involvement of all parties in major decisions regarding the Microbiology & Immunology training program.

Section 3. Training Milestones

A. Identification of a PhD Mentor (route of entry specific)

IDP/NDP/MSTP -- After completion of individual lab rotations, students who enter M&I via the IDP, the NDP, or the MSTP will have identified a dissertation mentor who has either a primary or secondary appointment in the Department of Microbiology & Immunology and is an approved member of the MCW Graduate School faculty .

M&I Department Admission program- After completion of lab rotations in Microbiology & Immunology primary faculty laboratories, students who enter through the M&I Department Admission program will have identified a mentor who has a primary appointment in the M&I Department.

A list of primary M&I faculty can be found here. A list of secondary M&I faculty can be found here.

B. Engagement with your dissertation committee

In addition to your PhD mentor, your dissertation committee will provide mentoring, scientific guidance, and support throughout your graduate career. Your dissertation committee should be formed in close consultation with your PhD mentor and must be approved by the M&I graduate program directors, the M&I department Chair and the Dean of the graduate school using the Committee Approval form. A required meeting with your PhD dissertation committee twice per year is a great opportunity to gather a group of scientists (including yourself) together to think critically, share ideas, approaches, and previous experiences. The committee is also an invaluable resource as you prepare fellowship applications and/or manuscripts prior to submission. It is an opportunity to network, learn, teach, and practice presenting your science and thelogic behind it. Rather than thinking of this as an onerous, check the box requirement, consider it as a part of your professional development portfolio and capitalize on the individuals engaged in your scientific training.

All entry tracks: Your dissertation committee should be formed and approved by M&I Graduate Program directors within the first 6 months of joining the dissertation laboratory.

Your committee must consist of ***5 or more members*** each of whom has a PhD, MD or equivalent degree and is a faculty of the MCW Graduate School (research-track faculty are not eligible) or a faculty with equivalent standing at an accredited academic institution in the U.S. In addition to the criteria below, the cultural, gender, and ethnic diversity of the committee should be raised to a high priority level.

The committee should include:

Your mentor. All M&I students have a mentor who is a primary or secondary faculty member within M&I. The mentor will serve as the chair of your Dissertation Committee and will provide guidance when identifying other committee members. The Dissertation Proposal Examination is the only committee meeting that will not be chaired by your mentor, but instead by another member of your dissertation committee selected by the M&I program directors.

At least 2 members with an appointment in the Department of Microbiology and Immunology.

- One of these is your mentor who serves as the committee chairperson except as specified above
- At least one of committee members must have primary appointment in M&I. If your mentor has a secondary appointment in M&I, you must recruit at least one more M&I faculty with a primary M&I appointment to your dissertation committee.

At least 1 member who is not affiliated with M&I.

- Can be from any other MCW basic science or clinical department
- Can be from an outside institution

Any of the committee members (except the primary mentor) will agree to serve as a Wellness Advocate, as selected by the student. This individual will be responsible for documenting discussion of the mentor-mentee interactions, career choices, work/life balance, and any other items brought up by the student at each thesis committee meeting and will be the point of contact between the student and the program directors, if needed (also see below in logistics).

It is the student's responsibility to meet with, discuss and invite faculty to serve on their dissertation committee, including selection of the Wellness Advocate. It is important that students carefully consider committee members both in terms of their scientific expertise as well as their role as students advocates. Students are encouraged to include committee members they feel comfortable talking to not only about scientific plans, but about future plans, work/life integration and to address issues with should they arise.

Changes to the dissertation committee can occur for various reasons and at any time of training. These changes must be documented by submitting a Committee Change Approval Form which has been approved by the PhD mentor, graduate program director(s) or department chair. Only the name(s) of the individual(s) removed or added needs to be provided. Once all signatures are obtained, the student must submit this form to the Graduate School of Biomedical Sciences and transmit a copy of this form to the M&I Graduate Program Directors and Program Administrator.

C. Expectations of Dissertation Committee Members:

- Mentor the student in course selection
- Oversee the student's emerging dissertation research and consult in the preparation of the Dissertation Research Proposal
- Conduct the Dissertation Proposal Examination
- Aid the student in addressing deficiencies identified during the Dissertation Proposal Examination
- Attend two committee meetings per year (one associated with a RIP presentation, if possible)

It is the responsibility of the Dissertation Committee to determine when the student has completed a sufficient body of original research to write a doctoral dissertation. The committee will read and evaluate the dissertation and attend and evaluate the doctoral dissertation defense. The committee has the authority to recommend dismissal of a student who does not

qualify for a PhD based on the committee's evaluation of all components of the student's performance in the M&I graduate program.

Logistics of the committee meeting
It is the directors' strong belief that frequent interaction between the students and thesis committee faculty are key for the student's success. Live (as opposed to asynchronous) committee meetings have to occur every 6 months regardless of the training stage. A student is allowed a 4 week extension with prior approval of the M&I Directors. If the committee meeting timing consistently and repeatedly falls below the "every six months" expectation without extenuating circumstances, the Ph.D student may be assigned an "Unsatisfactory" grade andplaced on probation.

While the focus of the committee meeting will be on scientific progress and plans for the future, each committee meeting will begin by asking the student to leave the room so that the mentor can discuss the student's progress with the thesis committee. At the end of each committee meeting, the mentor will be asked to leave the room and the student will be asked to discuss the mentor/mentee relationship with the dissertation committee and raise concerns/solicit feedback, if necessary. Each committee report should include a statement that the mentor/mentee relationship was discussed and it will be dissertation committee's decision (minus the mentor) if issues raised need to be brought to the attention of the program directors by the designated Wellness Advocate.

D. Dissertation Committee Meeting Summary Document (attached at the end of this student handbook).
The student is responsible for completion of a committee report which is signed by all committee members and delivered to the M&I program within 2 weeks of the committee meeting. The meeting summary should include a statement that the confidential mentor-free discussion led by the Wellness Advocate had occurred. The Summary Document should be submitted to either M&I director for the signature and the educational program coordinator(Shonda Coyhis, tcoyhis@mcw.edu). Either paper and/or electronic version is acceptable.

Interactions with the program directors.
The directors will hold several group meetings throughout the academic year with the entire student body of the M&I program. These group meetings will be a venue for students to provide feedback about their experience, mentor their more junior colleagues in the progression through the program, and introduce new initiatives/interact with the director(s).

In addition to committee meetings, Microbiology & Immunology Graduate Program students are welcome to bring issues to the program directors and solicit an individual confidential meeting, as needed. Whether individual meetings with the directors have occurred or not, biannually, each student will be sent a confidential email solicitation asking if they would like to meet with a program director or not. These meetings are entirely optional and anything discussed would be kept confidential, with access to the information limited to the program directors, unless explicitly authorized by the student. If a student "opts in", a meeting will be scheduled at the earliest possible convenience. If a student "opts out", they will be contacted 6 months later.

E. Credit Hour Requirements and Opportunities to Earn Credits
Training within M&I involves didactic courses, laboratory research, seminars, and other to develop scientific reasoning skills. According to the MCW Graduate School, a minimum of 60

total credit hours accumulated over the Ph.D. training are required for graduation. Of these total credit hours required for graduation, at least 9 credit hours should be fulfilled by courses approved by the directors of the M&I graduate program. Selection of courses that fulfill the 9 credit hour didactic requirement (6 credit hours for MSTP track) should be done in close consultation with the PhD mentor and the Dissertation Committee. Students are encouraged to enroll in advanced courses that are GPA defining (i.e. courses that assign A-F letter grades). While there are advanced courses that are graded on the Pass/Fail basis (i.e. Immunology Journal club), a student may not apply more than 3 credit hours of advanced Pass/Fail graded courses towards the 9 credit hours (or 6 credit hours for MSTP) advanced coursework requirement.

Further, MCW Graduate school mandates that in order to maintain the required full-time status, students must register for a total of 9 credit hours in both fall and spring semesters and 6 credit hours in the summer. These credit hours are filled by a combination of M&I approved coursework and Readings and Research up to 9 or 6 total credit hours, depending on the semester.

Information regarding logistics and deadlines for course registration can be found at the registrar's website. It is the student's responsibility to register for classes by the Graduate School specified deadlines to maintain their full-time status in the program. Failure to register for the full-time credit hour load by the MCW Graduate School deadline results in the dismissal from the program, unless an official leave of absence has been approved by the MCW Graduate School and M&I Graduate Program.

F. Course Summary

Didactic Course Requirements:

1. IDP/NDP students who enter the M&I Graduate Program are required to take:

16270	*Integrated Microbiology and Immunology* – 3cr for the entire course or two 1-credit hour blocks that are most distant to the expertise of the student's thesis laboratory, as advised by the thesis mentor (M&I approved course, counts towards 9 credits)
16-292	*Writing a Scientific Paper*– 1cr (IDP course, **does NOT count** toward 9 credits)
16-293	*Writing an Individual Fellowship* -2cr (IDP course, **does NOT count** toward 9 credits)
TBD	*Research in Progress course* 1 cr per semester (M&I required course, taken during the Fall and Spring semester of third year in graduate school, does NOT count towards 9 credits)
TBD	Scientific Communication course 1 credit (M&I required course, taken during the Spring semester of second year in graduate school, does NOT count towards 9 credits)
10-222B	*Ethics and Integrity in Science* (no credit hours)
10-444A	*Research Ethics Discussion* (no credit hours)
	Additional coursework with a total of 9 credits of advanced coursework (see below) with no more than 3 credits of

advanced coursework coming from a Pass/Fail graded advanced course

2. MSTP students who enter the M&I Graduate Program after successful completion of the first two years of the Medical School curricula are <u>required</u> to take:

16-242	*Techniques in Molecular and Cell Biology* – 2cr
16-293	*Writing an Individual Fellowship* -2cr (**does NOT count** toward 9 credits)
TBD	*Research in Progress course* 1cr per semester (M&I required course, taken during the Fall (G2) and Spring (G3) semester, does NOT count towards 9 credits)
TBD	Scientific Communication course 1 cr (M&I required course, taken during the Spring (G2) semester, does NOT count towards 9 credits)
10-222B	*Ethics and Integrity in Science (no credit hours)*
10-444A	*Research Ethics Discussion (no credit hours)*
	Additional coursework with a total of 6 credits of advanced coursework (see below), no more than 3 credits of advanced coursework l are allowed to come from a Pass/Fail graded advanced course

3. M&I Department Admission Students. Students will take a combination of courses that are best suited for their research interest and their advanced educational/research background in microbiology and immunology. The selection of particular courses is guided by the requirements below, M&I Department Faculty committee (represented by an Immunology, Virology, and Bacteriology faculty), and, ultimately, dissertation research mentor. In addition to the list of M&I Graduate Program approved courses (see below), M&I Department Admission students may take and receive elective course credit for the individual Foundations of Biomedical Science courses offered through the IDP track. Participation in select FBS courses is at the discretion of the M&I Department Faculty committee and/or thesis mentor, if such courses are deemed to be beneficial for the student's training.

<u>Required courses for the M&I Department Admission students:</u>

16-242	*Techniques in Molecular and Cell Biology* – 2cr (counts toward 9 credits)
16-293	*Writing an Individual Fellowship* -2cr (**does NOT count** toward 9 credits)
16270	*Integrated Microbiology and Immunology* – 3cr maximum, 2 credits minimum (M&I approved course, counts towards 9 credits). For this course, as determined by the curriculum advisory committee, the students will take appropriate 1-credit sections that complement their advanced prior training (i.e. students with prior bacteriology training will take Immunology and Virology sections of the course, etc).

TBD	*Research in Progress course* 1 cr per semester (M&I required course, taken during the Fall and Spring semester of third year in graduate school, does NOT count towards 9 credits)
TBD	Scientific Communication course 1 cr (M&I required course, taken during the Spring semester of second year in graduate school, does NOT count towards 9 credits)
10-222B	*Ethics and Integrity in Science* (no credit hours)
10-444A	*Research Ethics Discussion* (no credit hours)
	Additional coursework with a total of 9 credits from advanced coursework (see below), no more than 3 credits of advanced coursework are allowed to come from a Pass/Fail graded advanced course

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M&I Graduate program approved courses satisfying advanced coursework requirements :

TBD	*Innate and Adaptive Immunity* 2cr
16-270	Integrated Microbiology and Immunology 3rd
16-269	Basic Immunology 1cr
TBD	*Basic Bacteriology* 1cr
TBD	*Basic Virology* 1cr
25-273	Advanced Immunology 3cr
25-300	*Microbiology and Molecular Genetics Seminar* 1cr
25-230	*Current Topics in Microbiology and Immunology* 3cr
25-251	*Advanced Molecular Genetics* 3cr
25-259	*Mucosal Immunity* 1cr
25-260	*Mucosal Pathogenesis* 1cr
25-261	*Bacterial Toxin-Mucosal Cell Interactions* 1cr
25-262	*Tumor Immunology* 1cr
25-263	*Signaling in the Immune System* 1cr
25-264	*Developmental Immunology* 1cr
25-265	*Immunological Tolerance* 1cr
25-266	*Clinical Immunology* 1cr
25-269	*Advanced Bacterial Physiology* 1cr
25-275	*Advanced Bacterial Genetics* 1cr
25-267	*Bacterial Diversity and the Microbiome* 1cr
25-271	*Membranes and Organelles* 1cr
25-298	*Classical Papers in Microbiology and Immunology* 1cr
25-280	*Immunology Journal Club* 1cr
25-289	Career Internships in the Biomedical Sciences Syllabus 0 cr
25-285	*One Health Perspectives on Infectious Agents 2cr*

Students are also encouraged to explore advanced courses offered by other MCW departments to acquire unique knowledge base necessary for their project. In order for these courses to count towards the M&I 9 credit hour coursework requirement the student must obtain approval of the non-M&I course from the program directors and mentor prior to registering for such course. To obtain approval please e-mail the Program Director(s) providing rationale for why the course is appropriate for your training. Note, if adequate justification is provided, courses

are generally approved. All graduate students are expected to maintain a cumulative grade point average ≥ 3.0 and a Good or better evaluation in Readings and Research (25-295) (also see below).

Section 4. Evaluation of Students following successful fulfillment of required M&I specific courses and advancement to candidacy.

A. Responsible Conduct in Research (RCR)

According to NIH, "The scientific community and the community at large rightly expect adherence to exemplary standards of intellectual honesty in the formation, conduct and reporting of scientific research". To reach this goal, students are required to participate in RCR sessions that occur twice per year. These workshops provide a total of 4 hours of refresher RCR training per year to help trainees remain eligible for training grants and to gain greater appreciation of the issues surrounding responsible conduct of research. The RCR sessions are required for NIH predoctoral fellowship applications.

B. Dissertation Committee Summary Document

As specified above, following a committee meeting a "Dissertation Committee Meeting Summary Form" should be completed, signed by all committee members, including the statement from the Wellness Advocate, and given to the director(s) and the department educational coordinator (Shonda Coyhis, tcoyhis@mcw.edu) within 2 weeks of the committee meeting. The signed form can be submitted in paper and/or electronic format.

C. Readings and Research

To quality as a full-time student, graduate students should register for Readings and Research (25-295) each semester until they successfully defend their dissertation research. Performance in *Readings and Research* is evaluated by the primary mentor and is assigned a grade of E (excellent), G (good), S (substandard) and U (unsatisfactory). Note S means substandard not satisfactory. Due to the varying nature of the research experience across the different labs in the department, fixed criteria for grading students in Readings and Research cannot be established. Mentors will consider the following skill development areas when assigning grades:

- Independence and continuing progress in research projects
- Tractable progression towards graduation
- Scientific writing (manuscripts and grant proposals)
- Scientific presentation
- Evaluation and synthesis of published research findings
- Collegiality and teamwork

A grade of S (substandard) in Readings and Research requires immediate committee meeting evaluating the deficiencies that led to the substandard grade and a written plan of action to remedy these deficiencies developed by the student, mentor, and the dissertation committee. The grade of S along with the remediation plan is communicated to the program directors.

(U)nsatisfactory evaluation in Readings and Research is associated with placement of the student on probation. Two "U" grades in any two semesters trigger recommendation for student's dismissal from the M&I Graduate Program and MCW Graduate School. Prior to assigning the Unsatisfactory grade, the mentor will call a committee meeting

where they will consult with members of the dissertation committee and the M&I program directors if an evaluation of Unsatisfactory in Readings and Research is contemplated. If there is consensus that the student performance is evaluated as Unsatisfactory, a letter explaining the basis for the grade and detailed corrective measures and strategies shall be submitted to the program directors and to the Dean of the Graduate School in Biomedical Sciences.

D. Research in Progress (RIP).

Research in Progress is an annual activity that is a requirement of the M&I program. During RIP students will be given 30 minutes (first and second year presentations) or 60 minutes (third year and on) to present the progress made within their thesis project(s). Ideally, RIPs should be temporally coupled to one of the two semiannual committee meetings, although this is not a strict requirement.

Attending and moderating RIPs and engaging with the speaker's presentation is a required professional activity of the M&I program. All M&I students are highly encouraged to attend at least 75% of the RIPs in person. Zoom links will be reserved for committee members that are not physically on campus at the time of presentation and will not be available publicly.

Dates of RIP presentations will be assigned by the program directors. Students who have gotten their mentor's and committee's permission to defend Ph.D. thesis in the next 12 months are not required to deliver RIP, as long as the student's mentor communicates the upcoming Ph.D. defense to the M&I program directors. In the absence of direct communication from the mentor to the directors, the student will be added to the RIP schedule at the beginning of the academic year.

Section 5. Dissertation Proposal/Checkpoint Exam

According to the timeline (see appendix), every student entering the M&I Graduate program is expected to:

a) Form the dissertation committee within the first six (6) months of joining the dissertation laboratory; at this time program directors will identify the committee member (other than the mentor) to chair the Dissertation Proposal Exam.

b) Conduct the first committee meeting within the first eleven (11) months of joining the dissertation laboratory

c) Schedule the Dissertation Proposal Defense within the first fifteen (15) months of joining the dissertation laboratory

d) Final decision regarding the advancement to candidacy rendered by eighteen (18) months of joining the dissertation laboratory

Under extenuating circumstances, the extension to the deadlines above can be granted with at least 2 weeks prior notice and with the approval of thesis advisor, members of the thesis committee, and the program directors.

Thesis committee. All students in the M&I Graduate Program will form and approve their thesis committee within the first 6 months of starting dissertation research in the dissertation lab and following the guidelines outlined in section 3B above. The program directors will select and

communicate to the selected committee member that they will chair the Dissertation Proposal exam.

Initial committee meeting must occur within the first 11 months following start of research in the dissertation laboratory. The purpose of this meeting is to evaluate the draft of the Dissertation proposal prepared by the student as a final product of the Writing an Individual Fellowship course, including hypothesis, working model, and proposed experimental approaches to test the former. The goal of this meeting is to critically assess the proposal draft, identify "lethal" flaws in the working model/proposed experiments, and provide additional feedback to improve the outcome of the written portion of the dissertation proposal exam. This meeting also serves as an initial interaction of the student with the dissertation committee under the conditions that are not formally assessed as an exam yet provide critical guidance for the student's dissertation proposal defense.

A. Dissertation proposal defense

The dissertation proposal defense is a Ph.D. candidacy exam that aims to determine whether the student has developed sufficient skills as a scientist to successfully complete requirements for a Ph.D. degree within the next 2-3 years. The most important skills to be evaluated include critical thinking, literature analysis and synthesis, ability to identify a biologically significant knowledge gap, ability to design and execute hypothesis-driven research (i.e. generation of working models, hypotheses, and experiments to directly test the above), ability to critically evaluate own data, ability to discuss expected and biologically alternative results, and scientific presentation skills, both written and oral. Thus, the exam consists of a written (dissertation proposal) and an oral (proposal defense) portions which are evaluated individually.

It is the student's responsibility to schedule the dissertation proposal defense prior to 15 months tenure in their dissertation laboratory. Any extension to the deadline has to be approved by the M&I Directors at least two weeks prior to the deadline. Students who fail to meet the dissertation proposal defense deadline without approved extenuating circumstances will receive an Unsatisfactory (U) for Readings in Research for that semester. Please be aware that a "U" in Readings and Research automatically places a student on probation, and two "U" grades are grounds for dismissal from the program.

a. Written disssertation proposal (See the **required** title page in the Appendix below)**.** The Dissertation Research Proposal should strictly follow NIH guidelines for F30/31 proposal applications, with the development aided by the *Writing an Individual Fellowship* course (16-293). It is of critical importance that the written document undergoes four levels of reviews PRIOR to the submission to the dissertation committee (two weeks before the thesis proposal defense):
Level 1: It is the program expectation that the proposal is developed with the guidance from the dissertation committee (see initial dissertation committee meeting) and the continuous guidance of the mentor
Level 2: It is the program expectation that the dissertation proposal incorporates feedback from the member of the "executioner" team prior to its submission, with the "executioner's" name documented on the title page
Level 3: It is the program expectation that the dissertation proposal incorporates feedback from a senior student in the M&I program (ideally a senior student colleague in the

dissertation laboratory or a lab with scientific overlap), with the reviewer's name documented on the title page

Level 4: It is the program expectation that the dissertation proposal is approved for submission by the Chair of the Dissertation Proposal Exam (non-mentor committee member designated by the directors). The Chair's signature is required on the title page.

The scope of the proposed studies must be realistic and feasible and take into consideration the amount of experimental work that can be reasonably performed by a single individual over the span of 2-3 years. **It is critical to follow the formatting requirements below, including the page limits, as these are a part of scoring criteria for the examination. The dissertation proposal written document must be distributed to the thesis committee at least two weeks prior to the exam.**

The entire proposal document should be formatted according to the NIH F31/F30 guidelines: 0.5-inch margins, all text 11-point Arial, single-spaced, no more than 6 lines per inch and no more than 15 characters per inch. Figure legends may utilize 9-point Arial. Figures and tables must be included within the body of Research Strategy and all presented data and models count towards the page limit established below. Literature cited has no page limitations.

1. Specific Aims (1 page). In this section you will define your field of study, identify the knowledge gap that your studies will address and present your working model and hypothesis. A *concise* set of specific aims (not more than 3) will define sub-hypotheses and the key components of the experimental strategy that test the working model. A cartoon of the working model may be included here. The section should conclude with a short paragraph describing deliverables of your proposed research, i.e. how the completion of the proposed studies will advance the research field and address the existing knowledge gap.

2. Research Strategy (6 pages total including all figures and tables; any "spill over" will be a negative score driver during the exam, with the possibility of failing the written portion)

i. Background and Significance. This section should succinctly present the background information that is *directly relevant* to the tested working model and proposed studies. The knowledge gap addressed by the proposal and significance and innovation of the proposed studies, both conceptual and technical, will be defined here.

ii. Preliminary studies, working model, and research plan overview. This section should focus on the preliminary data that support the proposed studies, expanded description of the working model, the rationale for the questions addressed in this proposal, and a big picture overview of the proposed research studies. Preliminary data are expected to be a combination of that generated by the student and current/previous lab members (data must be clearly credited in the figure legends if not generated by the student)

iii. Approach/Specific Aims. Here the student will remind their reviewers about the rationale for performing the proposed experiments and provide experimental design for the proposed studies, including controls. Rigor and reproducibility of the proposed experimental design should be addressed along with the proposed statistical analyses. Importantly, the approach section should include thorough and detailed discussion of the following aspects: a) expected results, including how these accommodate the proposed working model and immediate follow-up studies that may be performed; b) alternative biological outcomes (as opposed to technical outcomes described subsequently) and how the unexpected results will be used to reevaluate the working model and design relevant follow-up experiments; c)

alternative technical approaches, in case the feasibility of the proposed experimental system becomes inadequate.

b. Literature Cited (no page limit). This section is not included in the six-page limit and should list all published information referred to in the preceding sections.

c. Preparation of the dissertation proposal. The Dissertation Research Proposal should be an original document that is written by the student and that represents the original thoughts and ideas of the student. Advice from the mentor, Chair of the Dissertation Proposal Exam, "executioner" team member, and a senior student colleague is required and has to be documented on the title page. Advice from other faculty and student colleagues is highly encouraged and should be sought by the student to assist in preparation of the proposal. The student should not copy components from the mentor's grant proposal, the use of any artificial intelligence-generated writing is prohibited for the purposes of this exam. If citation or art from published journal articles, reviews, textbooks, or Internet sources is used, this must be acknowledged, and the published content clearly marked. Primary mentor and other reviewers of the initial drafts may suggest changes that would improve the content of the proposal but should not edit or write any section of the proposal. The document should be prepared with the intent of submission to NIH for predoctoral funding.

d. Evaluation and defense of the dissertation proposal. During the oral part of the exam the student will present an overview of the dissertation proposal in a format that will take at most 20 minutes of uninterrupted presentation time (whether the presentation is interrupted or not will be at the discretion of the committee in consultation with the student). **Use of fabricated data that was not derived from the actual experiment or publication as an expected outcome constitutes an automatic fail of the thesis proposal exam**. The oral exam will be spent in a study section-like environment, where the student will be expected to demonstrate ownership of their project along with extensive knowledge and synthesis of relevant published literature. The written portion of the Dissertation Proposal Exam will be evaluated by the committee in parallel with the evaluation of the Oral Defense.

e. Advancement to Candidacy. Acceptance of the dissertation research proposal is an MCW Graduate School requirement for advancement to Candidacy for the Ph.D. degree. The dissertation committee will identify any potential problems or weaknesses with the written dissertation proposal or the oral portion of the exam. It is the responsibility of the committee to determine whether the student has the required skills to complete the dissertation research required for Ph.D. degree conferral. Following are the outcomes of the dissertation proposal defense:

1. Approve the Dissertation Research Proposal. If both the oral and the written portion of the dissertation proposal exam are deemed acceptable, committee members and the mentor will indicate their acceptance of the final research proposal outline by completing and signing the Dissertation Proposal Approval Form. It is the responsibility of the student to provide a complete set of forms to the committee at the initiation of the exam. These forms, and a copy of the research proposal will be submitted to the directors of the M&I Graduate program and the M&I Chair for approval and forwarded to the Dean of the Graduate School of Biomedical Sciences for final approval. Copies of the completed and signed documents should be forwarded to education coordinator (Shonda Coyhis, tcoyhis@mcw.edu). Upon approval by the

Graduate School of Biomedical Sciences, a student shall be admitted to Candidacy for the PhD degree.

2. Call for revision of the proposal. If revisions to the written portion of the thesis proposal are deemed necessary by the committee, the student will have 4-12 weeks (exact timing at the committee's discretion) to address the deficiencies in the written document. If oral defense is deemed unsatisfactory, the student will have 4-12 weeks (exact timing at the committee's discretion) to remedy the deficiencies AND schedule a follow-up oral defense. The final decision of the committee regarding the admission to candidacy must be rendered before the first 18 months of dissertation research are completed. Any extensions to the deadline must be approved by the program directors prior to the deadline.

3. Recommend for a MS degree. This occurs if the Directors of the M&I Graduate Program, the Department Chair, and Dean of the Graduate School decide that, based on combination of concerns related to the preparation and presentation of the dissertation proposal, the qualifying examination, academic record, and research performance, the student lacks the expected skills required for completion of the dissertation research and therefore is not qualified to be admitted to candidacy for the PhD degree. However, the student's skillset may be deemed acceptable to complete the requirements for a MS degree. Students advised to pursue the MS degree must meet the requirements for that degree, which includes completion of a research project and preparation of a thesis that is approved by the committee. Committee members will indicate that the student's performance on the Qualifying Examination was "Unsatisfactory" on the Qualifying-Examination-Report---PhD Form . The student's mentor will also complete the Unsatisfactory-Examination-Evaluation-Form and indicate that it was consensus of the Dissertation Committee that the student's performance was "Failed". These forms, and a copy of the completed research proposal / outline, will be submitted to the Directors of the M&I Graduate program and the Department Chair for approval and forwarded to the Dean of the Graduate School of Biomedical Sciences for final approval. Copies of the completed and signed documents should be forwarded to the Directors and Administrator of the MI Graduate Program for their records.

4. Recommend dismissal from the program. This occurs if the Director of the M&I Program, the Department Chair, and Dean of the Graduate School that, based on concerns with the preparation and presentation of the Dissertation Proposal, coupled with problems on the qualifying examination, academic record, and/or concerns of the mentor, the student lacks one or more skills required for completion of a graduate degree from the Department of Microbiology and Immunology. Under these circumstances, the committee will recommend that the student be dismissed from the graduate program. Students recommended for dismissal have the right to appeal the decision as described in the Graduate School Handbook.

B. Dissertation Defense

Ph.D. Dissertation of the Microbiology & Immunology Graduate Program must present evidence of distinctive achievement in a scientific field of interest. First author publication(s) based on the student's research work, while not required, are highly encouraged, as such publications ensure a greater competitiveness of the student in their pursuit of the next step of their career/training. **Dissertation organization and formatting must follow all specific requirements dictated by the MCW Graduate School and the student must follow a dissertation defense checklist provided by the M&I Graduate Program (see Appendix).** A degree completion checklist from the Graduate School can be found here. The Graduate School offers several approved thesis outlines, the choice of the particular one is dictated by the student and mentor. If first author publications have been generated during the student's Ph.D. training or are in the

process of being submitted/revised, the student is may choose a Graduate School-approved dissertation formatting option that would facilitate direct transfer of published work into dissertation chapters with minimal formatting necessary. Any collaborative components of the research (data from studies not performed by the student) must be identified and the contribution of others clearly delineated. Upon completion, the written Dissertation will be distributed to the members of the Dissertation Committee two weeks prior to the Dissertation Defense.

The Dissertation defense consists of a public defense in the form of a seminar, at the end of which the candidate entertains questions from the entire audience, including virtual attendees, if applicable. The student has an option to include virtual attendees in their public defense. The choice to accommodate both physical and virtual attendees has to be communicated to the Graduate School and M&I education coordinator as soon as possible to ensure that the properly equipped room is reserved for the public defense. Following the public defense, the candidate will undergo private defense with the Dissertation Committee that will constitute the final checkpoint to ensure that the expected skills have been appropriately developed by the candidate. Upon a satisfactory defense and in accordance with the Graduate School, final copies of the dissertation, including any changes required by the Committee, must be submitted to the Dean of the Graduate School within two (2) weeks following the defense. The degree application will then be signed. Information on Application for Graduation and Degree Completion Deadlines can be found here. The Application-for-Graduation-Program-Approval.pdf (mcw.edu) form should be completed after a student applies for graduation and is submitted with Program Director approval to gradcompletion@mcw.edu prior to the beginning of the anticipated graduation term. **Please see appendix for the mandatory M&I checklist for graduation.**

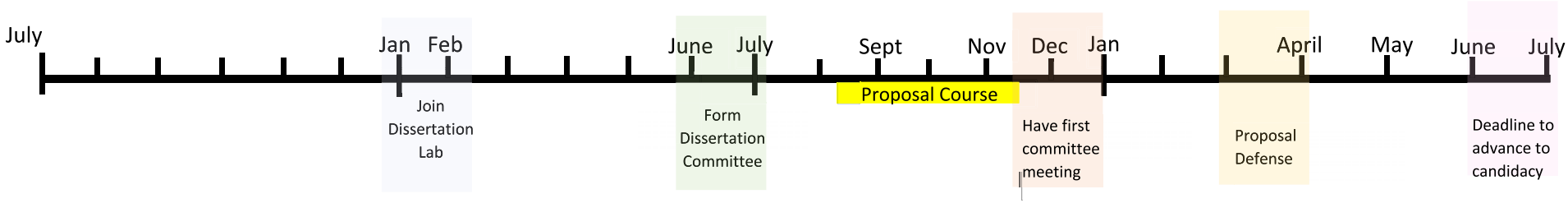
The Appendix

a.1 Master's option other than an outcome of dissertation proposal defense. Admission to the M&I Graduate Program demonstrates a student's commitment to complete the requirements for the Ph.D. degree. In some circumstances, unforeseen personal and professional issues may trigger a change from the Ph.D. degree program to the M.S. degree program, a change that should be discussed with the student's mentor, thesis committee, and M&I program directors prior to any change in degree program. If a change in degree program is deemed appropriate by all parties, the student will complete a Request for Program Reassignment form. The form is available by request by e-mailing gradschool@mcw.edu. As the Master's degree has a committee requirement of 3 members, Committee-Approval form or a Committee-Change-Approval should also be completed. This 3 member committee should include the M.S. mentor, a primary faculty member in Microbiology and Immunology and a 3rd committee member who can be from within M&I, from another MCW department or from an outside institution. All committee members must hold a terminal degree in their field.

a.2 Signing of forms by Program Directors.
Forms that call for the program director's signature only need to be signed by one of the directors. At least one of the directors will be available prior and/or after each RIP to sign the forms. Unless there are extenuating circumstances, the directors will not sign electronically and outside of RIP hours during the academic semesters. The only exceptions will be made during the summers, where the directors will review emails/physical forms left for signature by the M&I business office.

a.3 Rotation outcome for M&I Department Admission students.
M&I graduate program students that are admitted via the Department Admission track are expected to collaborate with the M&I faculty advisor to select 3 laboratories of primary M&I faculty for 6-week research rotations, with decision to join one of these laboratories for thesis research made in December of the first semester. This decision should be communicated to the program directors with the selected thesis mentor cc'd on the communication. In rare instances, a fourth rotation with a primary M&I faculty may be necessary. The need for the fourth rotation should be communicated to the program director, in consultation with the M&I faculty advisor, no later than December 15th of the first semester in the program. Failure to match to a dissertaton laboratory after 4 rotations may result in dismissal from the program.

Proposal Defense Timeline
Microbiology and Immunology



Join Microbiology & Immunology Dept	January -February
Form Dissertation Committee	By June-July (6 months after joining lab)
First Committee Meeting	By November January (11 months after joining lab)
Proposal Due	Two weeks prior to the exam;
Thesis Proposal Defense	March-May of year 2; 15 months after joining lab
Deadline to Advance to PhD candidacy	By June-July (18 months after joining lab)
Submit F30/F31 (heavily encouraged)	Deadlines in April, August and December

Timeline.

1 Committee assembled (no later than six months after starting research in the dissertation laboratory) Committee-Approval Form

2 First committee meeting (no later than eleven months after starting research in the dissertation laboratory)

3. Dissertation Proposal Exam (no later than fifteen months after starting research in the thesis laboratory)Dissertation (PhD)-or-Thesis (MS)-Proposal-Approval Form for the advancement to candidacy

4. Final decision regarding advancement to candidacy rendered by the dissertation committee no later than eighteen months after starting research in the mentor's laboratory

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5. Committee meetings have to occur every 6 months following the dissertation proposal exam regardless of the training stage. A student is allowed a 4 week extension and only with approval of the M&I Directors. If the meeting does not occur within any six months without extenuating circumstances, the Ph.D student will be assigned a "Substandard" grade by the M&I directors. The signed committee meeting summary form serves as evidence of holding a committee meeting. Repeated failure to turn in forms may also result in a "Substandard" grade. In the event that some signatures are difficult to obtain, please submit a partially signed form and an explanation for missing signatures.

Graduation prep: Follow the Graduate Checklist in the Appendix

6. For the last semester of your Ph.D. register for the Dissertation Research. Registration for this course has to be approved by the mentor and the committee, as this course can only be taken once and only during the semester when the actual defense takes place. Per MCW Graduate School rules, Ph.D. defense cannot occur earlier than 18 months after successful defense of the thesis proposal.

7. Obtain the graduation checklist from the MCW graduate school and ensure all the checkpoints are addressed or will be addressed prior to the defense. Follow the M&I Graduate Program Thesis defense checklist in the appendix. **Failure to follow the Graduate School and M&I program requirements will lead to cancellation of the defense**.

8. A complete draft of your thesis must be submitted to the thesis committee two weeks before the scheduled defense.

9. Ensure that you deliver the Oral-Defense-Completion--Degree-Recommendation Form and the PhD Signature Page available here to your committee for the private part of the thesis defense.

10. Follow the MCW Graduate school deadlines for submission of the final thesis version and signed forms.

Microbiology and Immunology Graduate Program
Medical College of Wisconsin

Dissertation Committee Meeting Summary
Link to this form is on the M&I website/Graduate Program

Instructions: The **student** should complete the **Pre-Meeting Information Section** and provide to his/her thesis committee members prior to the meeting. Following the meeting, the **student** should complete the **Post-Meeting Information Section**. The completed document should then be circulated to committee members for comment/approval, and the final copy of the report should be signed by the student, the advisor, and the Program Director.

Graduate Program:

Student: _____
Name Signature date

Dissertation Advisor:_____
Name Signature date

Graduate Program Director:_____
Name Signature date

Dissertation Committee Members (Name and Department)

Member 1: Signature:

Member 2: Signature:

Member 3: Signature:

Member 4: Signature:

Member 5: Signature:

_____ is my student wellness advocate.

My mentor/mentee relationship was discussed ☐ (please check box to indicate)

Overall evaluation of student's effort - To be determined by committee members (Has student: (i) provided information in a timely manner, and (ii) completed or made progress towards indicated goals).

☐ Exceeded expectations ☐ Met expectations ☐ Below expectations

Pre-Meeting Information

1. Goals set at last committee meeting, Continued:

2. Research progress since last committee meeting:
(Can attach a document or use this space)

Post-Meeting Information:

3. Summary of Thesis Committee Meeting:

4. Goals established for next committee meeting:

5. Please list—(this information will be used to both recognize effort and to keep metrics for use in T32 type applications)

Fellowship and grant applications (submitted and awarded),

Meetings attended and presented at (for the latter please also provide information on your poster or talk title).

Papers published

Signed committee meeting reports are due within 2 weeks of the committee meeting.

Microbiology and Immunology Graduate Program
Medical College of Wisconsin

Student Portfolio (SP)

Instructions: The **student** is encouraged to start populating the SP following entrance into the Microbiology and Immunology Graduate Program. The document should be updated at least every 3 months for the student's benefit. It is helpful (but not necessary) for the thesis committee to view this document at least once per year.

1. Contact Information (Name, Address, Telephone, Email)

2. Education:
Institution attended (Name of institution, Department or Program, Location, Degree, Date of attendance)

3. Research Experience
Research Projects (Institution, Position, Dates, Description of Project)

Research Grants Awarded/Pending/Submitted (Title, Source, Role, Dates, Status, Funds Awarded)

4. Peer-Reviewed Workshops/Presentations/Committee Meetings
Meetings and Conferences Attended (Name of conference, Title of abstract, Date, Indicate if poster or talk)

Institution or Department Presentations (Location, Title of talk or abstract, Date, Format of presentation)

MCW Graduate School Annual Poster Session (Title of poster, Date)

Thesis Committee Meetings (Date)

5. Bibliography
Papers (Authors, Title, Journal, Volume, Pages, Year, PMID#)

Review Articles (Authors, Title, Journal, Volume, Pages, Year, PMID#)

Papers/Review Articles in Preparation (Authors, Title, Journal, Year)

6. Academic Activities
Courses (Year, Semester, Course #, Course Name)

Coursework complete? Y____ N_____

Individual Development Plan [MyIDP or equivalent] (Date completed, Date discussed with mentor)

Spotlight in Science Sessions Attended (Date, Topic of Session)

Student Portfolio (SP) – Page 2

6. Academic Activities, continued

Responsible Conduct in Research Sessions Attended (Date, Topic of Session)

Career choice Presentations Attended (Date, Topic of Session)

Other Professional Development Activities (Date, List activity)

7. Teaching

Guest Lectures Delivered (Date, Course)

Community/Lay Public Presentations (Date, Event)

8. Mentoring

Mentoring activity (Name of student, Title, Date, Capacity)

9. Memberships in Professional Societies

Organization (Name of society, Role, Dates of membership)

10. Leadership and Service

Committee service (Name of committee, Role, Dates of service)

Community Service Activities (Name of event, Role, Dates of service)

11. Honors and Awards

Honors or awards (Name of Award or Honor, Date received)

Ver November 2024

Dissertation proposal cover page:

Microbiology and Immunology Graduate Program
Dissertation Proposal

Dissertation Proposal Title:

Date

Name:

Dissertation committee at the time of exam:

Executioner reviewer: Name

Senior Colleague reviewer: Name

This submission was reviewed by the Dissertation Proposal Exam Chair: Chair signature:

I certify that the format of this document adheres to the NIH formatting guidelines for F30/F31: student's signature

Courses completed:

- [ ] Get approval from your mentor and committee to defend your thesis
- [ ] If approval is granted, register for dissertation research An application for graduation must be submitted with the graduate school and should be submitted at least 60 days prior to your planned defense. Please see graduate student resources for dates PhD-Degree-Completion-Checklist-2024-April.pdf (mcw.edu) Application-for-Graduation-Program-Approval-22024.pdf (mcw.edu)

- [ ] With a timeframe in mind, check with Shonda to avoid conflicts with the departmental calendar.
- [ ] Engage your mentor and committee to identify a day and time for graduation
- [ ] Communicate the day and time for your PhD defense to department office (tcoyhis@mcw.edu) and make sure it gets on the departmental calendar right away
- [ ] If you intend to offer a Zoom option, ask Shonda to create a Zoom link and assure that media services will be there for IT support on the day of your defense.
- [ ] Make sure rooms of appropriate sizes are booked for your public defense and private defense. Shonda in the department office can help with this as needed.
- [ ] Create a advertisement poster for your PhD defense and ask Shonda to advertise on the media boards.
- [ ] Bring necessary paperwork to your thesis defense