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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICaB Program Overview</td>
<td>4</td>
</tr>
<tr>
<td>MICaB Program Administration</td>
<td>4</td>
</tr>
<tr>
<td>MICaB Governance</td>
<td>4</td>
</tr>
<tr>
<td>MICaB Faculty Appointments and Responsibilities</td>
<td>6</td>
</tr>
<tr>
<td>MICaB Student Responsibilities</td>
<td>8</td>
</tr>
<tr>
<td>Student Academic Conduct</td>
<td>9</td>
</tr>
<tr>
<td>Rotations/Laboratory Requirements</td>
<td>9</td>
</tr>
<tr>
<td>MICaB Credit Requirements</td>
<td>10</td>
</tr>
<tr>
<td>Registration</td>
<td>12</td>
</tr>
<tr>
<td>Seminars</td>
<td>13</td>
</tr>
<tr>
<td>Journal Clubs and Data Clubs</td>
<td>14</td>
</tr>
<tr>
<td>Teaching Requirements</td>
<td>14</td>
</tr>
<tr>
<td>MICaB Examinations</td>
<td>15</td>
</tr>
<tr>
<td>Written Proposition (preliminary examination)</td>
<td>17</td>
</tr>
<tr>
<td>Oral Preliminary Examination</td>
<td>22</td>
</tr>
<tr>
<td>Thesis Defense/Final Oral Examination</td>
<td>24</td>
</tr>
<tr>
<td>Checklist for Scheduling the Thesis Defense</td>
<td>25</td>
</tr>
<tr>
<td>Annual Review of MICaB Student Progress</td>
<td>27</td>
</tr>
<tr>
<td>Employment Terms and Conditions</td>
<td>29</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>31</td>
</tr>
<tr>
<td>International Students</td>
<td>32</td>
</tr>
<tr>
<td>Awards</td>
<td>33</td>
</tr>
<tr>
<td>Fellowships</td>
<td>33</td>
</tr>
<tr>
<td>MICaB Kickoff</td>
<td>34</td>
</tr>
<tr>
<td>Other Useful Information</td>
<td>34</td>
</tr>
<tr>
<td>MICaB Program Timetable for Ph.D. Students</td>
<td>36</td>
</tr>
<tr>
<td>MICaB Course Requirements for M.D./Ph.D. Students</td>
<td>38</td>
</tr>
<tr>
<td>MICaB Program Timetable for M.D./Ph.D. Students</td>
<td>38</td>
</tr>
<tr>
<td>MICaB Committees</td>
<td>41</td>
</tr>
</tbody>
</table>

The handbook was updated on 07/25/2017. It is subject to change without notice, as is the information accessible via the handbook’s embedded hyperlinks.

MICaB STUDENT HANDBOOK
Page 3 of 42
MICaB PROGRAM OVERVIEW

The Microbiology, Immunology and Cancer Biology (MICaB) Ph.D. Graduate Program provides students with the intellectual background and technical training necessary to pursue successful research careers in the biological and biomedical sciences. The program emphasizes the interdisciplinary nature of research in the biological sciences, while providing opportunities for each student to specialize in a specific research area of interest. The foundation of the MICaB program lies in dedicated faculty mentors, state-of-the-art research facilities, rigorous coursework, career guidance and development, and motivated student peers and colleagues.

MICaB PROGRAM ADMINISTRATION

Administrative support for the MICaB program is housed in the Department of Microbiology and Immunology (1-109 Microbiology Research Facility). The MICaB Program Coordinator works directly with the MICaB Director of Graduate Studies to coordinate all aspects of the program.

While a student is rotating in MICaB laboratories during Year 1, the accounting staff in the Department of Microbiology and Immunology provides administrative support related to student stipends, tuition and billing. Once a student has selected a thesis advisor, administrative support for student stipends, tuition and billing is transferred to the primary home department of the student’s thesis advisor.

MICaB GOVERNANCE

Director of Graduate Studies (DGS)

The Director of Graduate Studies (DGS) is a member of the MICaB graduate faculty who serves as the administrative supervisor and coordinator of graduate studies in the MICaB program. The DGS is responsible for guiding and improving graduate education within the MICaB program. The DGS is responsible for all aspects of the program, including student-related issues (student recruitment and admission, student progress, nominations for awards, grievances, etc.), faculty-related issues (appointment to the graduate faculty, review of graduate faculty, etc.), and curriculum-related issues (program changes, course changes, program reviews, etc.).

The DGS serves as the liaison among the MICaB graduate student body, the MICaB graduate faculty, and the Medical and Graduate School administration. The DGS also serves as the MICaB representative on the Graduate School Biological Sciences Policy and Review (P&R) Council and on the Medical School Biomedical Sciences Graduate Programs Council.

The position of DGS rotates among the three tracks every three years in the following order: Immunology/Microbiology/Cancer Biology. Faculty in the track from whom the DGS will be selected decide who among them will serve as DGS for the upcoming three year term. This decision is made during the second year of the current DGS’s term (to allow the DGS-elect to overlap with current DGS on the Committee on Graduate Studies one year prior to starting her/his term). If more than one faculty member expresses an interest in serving as DGS, then the members of that track vote to choose their nominee. The representatives of that track administer the vote. The nominee receiving the majority of votes cast is named the next DGS.

The Assistant Dean for Graduate Education in the Medical School ultimately appoints the DGS. However, the graduate program's choice for DGS is presumptive, and the Assistant Dean for Graduate Education must provide written explanation for rejection of the program's nomination.

After the track selects a DGS, the MICaB Program submits to the Assistant Dean for Graduate Education the following information:
• Name of the DGS nominee
• The process used to select the nominee
• Proposed length of the appointment
• Signature of the chair or head of the graduate program’s departmental administrative home
• Description of any support that the DGS will receive during the term of the appointment.

In the absence of a DGS for less than one semester, program faculty shall designate an Acting DGS and so notify the Assistant Dean for Graduate Education. For an absence longer than one semester, program faculty should follow the above procedures for nominating a DGS. In special cases where program faculty have no nominee names to submit, the Assistant Dean for Graduate Education may appoint a DGS to serve until such time as a nomination is forthcoming.

The DGS may be removed by a two-thirds majority vote of the faculty of the graduate program or by the Assistant Dean for Graduate Education of the Medical School, after appropriate consultation.

The University maintains a website for Directors of Graduate Studies.

Committee on Graduate Studies
The faculty establishes the general policies of the MICaB program. The Committee on Graduate Studies (CGS) administers these policies, evaluates applications, interviews prospective graduate students, and facilitates the selection process. The CGS serves both faculty and graduate students in the maintenance of academic standards, without impinging on the advisor/advisee relationship, through periodic reviews of the progress of all graduate students, assignment of examining committees, and the evaluation of graduate examinations. The CGS meets on a regular basis throughout the year and is chaired by the DGS.

The CGS consists of nine MICaB faculty members (including the DGS), three representing each track (Microbiology, Immunology, and Cancer Biology), as well as two MICaB student representatives. As recommended by the Graduate School, participation of the student representatives in CGS meetings is confined to matters of general administrative and educational policy and does not extend to matters that relate to the progress of individual graduate students or to the applications of individual prospective graduate students.

CGS members serve three-year terms. One member from each track rotates off in July. The outgoing CGS member seeks nominations for CGS candidates from faculty within the CGS member’s track. Nominated candidates are asked if they are willing to serve. If more than one faculty member is nominated and is willing to serve, then an election is held within that track to select the new CGS member.

One of the three CGS members within each track serves as the track representative on the CGS. This individual can be chosen by the DGS, volunteer for the position, or can be chosen based on consensus with other CGS members within the track. This individual advises the DGS on discipline-specific issues and serves as a liaison between the CGS and members of his/her track.

Faculty Admissions Committee
The Faculty Admissions Committee evaluates applications from faculty members who have applied to become graduate faculty in the MICaB program. The committee consists of 6 MICaB faculty members (two from each track) and 3 MICaB students (one from each track). The CGS selects the MICaB faculty committee members while the MICaB students select MICaB student committee members.
Student Travel Award Committee

The Student Travel Award Committee evaluates applications from students for MICaB Travel Awards to support attendance at national and international research conferences. The committee consists of three MICaB faculty members (one from each track) who are selected by the CGS.

Career Development Committee

The mission of the MICaB Career Development Committee is to promote education, opportunity, inclusion and excellence surrounding the exploration of available career paths. Key elements include promoting open and candid discussions of career path options, providing a realistic modern-day rationale for choosing a given path that considers both the professional and personal needs of each student, and providing mentorship, resources, and guidance that will equip MICaB students with the best tools and mechanisms to success within a given career path choice.

The MICaB Career Development Committee coordinates career development activities within the MICaB program. The committee consists of one to three MICaB faculty members, two to three MICaB students and often a Postdoctoral Associate. The MICaB faculty members are selected by the CGS. The Chair of the Career Development Committee selects the MICaB students (and Postdoctoral Associate) serving on the committee.

Student Representatives

Two 4th year MICaB students in good standing in the program serve as student representatives on the CGS. Student representatives are nominated and elected by MICaB students and serve for one year. In addition to serving on the CGS, MICaB student representatives coordinate the MICaB Student Seminar series, organize monthly student meetings and social activities, and coordinate recruitment activities during recruiting weekends.

MICaB FACULTY APPOINTMENTS AND RESPONSIBILITIES

MICaB Faculty Appointments

The MICaB Faculty Admissions Committee reviews faculty members wishing to join the MICaB Graduate Program. Faculty members interested in joining the MICaB program are considered for appointment to the program only during the academic year. At the outset, each applicant is required to identify an advocate from the current MICaB faculty in his/her track of interest. Applicants are required to submit a curriculum vitae or NIH-style biosketch, a statement of graduate education philosophy, along with a nomination letter from the MICaB faculty advocate. The MICaB Program Coordinator distributes this information to the entire MICaB faculty.

Faculty interested in joining the MICaB Program are encouraged to contact the Chair of the MICaB Faculty Admissions Committee. The Chair will provide advice on how best to prepare the requisite seminar.

The applicant presents a seminar in either the MICaB Invited Speaker Seminar Series, the MICaB Student Seminar Series or other appropriate venue, as approved by the Faculty Admissions Committee. Following the seminar, the MICaB Faculty Admissions Committee Chair will convene a meeting to solicit discussion of the applicant. Alternatively, the Chair may solicit comments via email from the Committee members. The Chair then conducts a vote on admission to the program. For admission to the MICaB Graduate Faculty, a minimum of two thirds of the ballots cast must be in favor of admission. The committee informs the DGS of the committee’s decision and the DGS then notifies the faculty applicant of the outcome.
The faculty applicant must be of the highest quality to mentor and teach students and interact with other MICaB faculty colleagues. The committee considers the following issues when evaluating faculty applicants:

- Does the applicant perform top-quality research and does their research fit within the scope of the three MICaB disciplines?
- Does the applicant have an independent and interesting research program that will attract students?
- Does the applicant have the ability to financially support a student for the duration of their training (i.e., external funding, preferably from federal sources such as NIH, NSF)?
- If the applicant is a new faculty member and does not yet have external funding (and thus would support a student from start-up funds), does the applicant appear qualified to train students and capable of obtaining external funding in the future?
- Is there sufficient evidence of commitment of the applicant to graduate education and service to the program?
- Does the applicant have the necessary communication skills and ability to teach in MICaB courses?

Faculty who are not in tenure-track appointments at the level of Assistant Professor may apply to become primary advisors in the MICaB program, but will need to identify a tenured MICaB faculty member willing to serve as co-advisor for mentored students. The appointment process (including application through the Faculty Admissions Committee and a seminar presentation by the candidate) is the same as for other faculty. The primary advisor and co-advisor need to reach a mutually agreeable policy on financial support of the student and direction of their research: this agreement must be reached and approved by the MICaB CGS before a student is offered a position in the non-tenure-track advisor’s lab. The tenured co-advisor should work on a related field to the non-tenure-track advisor, and ideally they will be in the same department (although this is not a requirement). Both the primary and co-advisor need to sign the Memorandum of Agreement, indicating they both accept responsibility for support of a student in good standing. The expectation is that the student will conduct his or her research and be supported (in full or in part) by the non-tenure-track advisor, but that the co-advisor would take full responsibility for the MICaB student should the non-tenure-track faculty member become unable to continue supporting the student. (A similar arrangement for designated primary and co-advisors can exist between any tenured or tenure track faculty members, if all parties agree.) If faculty appointed under this policy subsequently join tenure track, or are promoted to the rank of Associate Professor or Professor, they should notify the CGS and to request that the requirement for an appointed co-advisor will be suspended.

MICaB Faculty Reappointments
Faculty in the MICaB program are reappointed every three years provided they have carried out their responsibilities in a satisfactory manner, as determined by an evaluation carried out by the CGS. This evaluation occurs during the last semester in the third year of the DGS’s term. Faculty admitted within the past 3 years do NOT have to apply for reappointment as they are automatically reappointed.

To be reappointed, faculty must show that they have an active research program as demonstrated by the publication of a primary authorship (first or last author) OR a collaborative (co-author) paper in a peer-reviewed journal in the three year period preceding the evaluation; AND they must have had a Ph.D. or Master’s Degree student receive a degree under their tutelage within the 5 year period preceding the evaluation, OR be in the process of training a
Ph.D. or Master’s degree student at the time of the evaluation, OR be able to demonstrate significant involvement in the MICaB program by teaching or serving on committees.

Responsibilities of MICaB Faculty
The general responsibilities of the MICaB graduate faculty include:

- Advising Ph.D. students.
- Participating in the recruitment of applicants.
- Serving on the CGS if elected.
- Serving on preliminary exam and thesis committees.
- Teaching MICaB courses.
- Attending the MICaB Invited Speaker Seminar Series and MICaB Student Seminar Series.

Specific responsibilities of MICaB faculty advisors of MICaB students include:

- Helping the student identify a novel and testable hypothesis and providing an experimental system with which to test the hypothesis.
- Ensuring that adequate funds are available to support the student's stipend and fringe benefits.
  - The MICaB Program requires a memorandum of agreement with an advisor, detailing his/her responsibilities and obligations to the student and the graduate program. The memorandum also stipulates that the advisor has discussed the responsibilities and obligations with his/her Department Head. A copy of the signed memorandum will be provided to the Department Head.
- Providing funds for the purchase of supplies required for the student's thesis research project.
- Being available to consult with the student on course work, and design and interpretation of experiments.
- Attending the student's presentations at the MICaB Student Seminar Series and national meetings and providing constructive criticism on these presentations.
- Critically reviewing the student's thesis.
- Helping the student make professional connections outside of the University of Minnesota.
- Helping the student obtain a quality postdoctoral position.

MICaB STUDENT RESPONSIBILITIES

The mutual roles and responsibilities for MICaB Faculty and Graduate Students are based on guidelines provided by the Graduate School at the University of Minnesota.

Every Year

- You must maintain active student status by registering every fall and spring semester until your degree is awarded.
- Attend MICaB Kickoff Luncheon and present a poster
- Attend MICaB Faculty and Student Seminar Series
- Attend a journal club in a relevant research area and present one paper for discussion
- Participate in MICaB recruiting activities
- Complete annual MICaB student progress report (June)

Credit Requirements
A doctoral degree conferred by the University of Minnesota requires a minimum of 24 course and 24 thesis credits.

- Of these total credits, at least 24 must be COURSE credits and at least 24 must be THESIS credits.
  - Of the minimal 24 COURSE credits, 9-10 come from MICaB Program required courses, 2 come from rotations (1 credit/semester in year 1), and the remaining 12-13 credits come from elective courses.

To receive your doctoral degree, you must initiate and follow procedures defined by the Graduate School. All forms must be submitted to the Graduate Student Services and Progress (GSSP) office (One Stop Student Services Center, Bruininks Hall) unless otherwise noted. Detailed timelines containing Graduate School- and MICaB-specific requirements and deadlines for Ph.D. and M.D./Ph.D. students are provided on p35 and p37 of this handbook, respectively.

Expectations of the MICaB Program
A high quality Ph.D. thesis in the MICaB program should involve hypothesis-driven research that is novel and nontrivial. First authored peer-reviewed publications arising from a student's thesis research are expected in the MICaB program. Success requires that students:

- Work hard
- Work with passion and integrity
- Be inquisitive and intellectually aggressive
- Be a positive ambassador for the lab, program and university
- Publish

STUDENT ACADEMIC CONDUCT

Every student is expected to act responsibly and honestly in all aspects of his/her graduate education. These responsibilities extend to both course work and laboratory research. Misconduct, such as failing to work independently in examinations, failing to give adequate credit and reference to others for their published work or ideas, or falsifying research data, is not acceptable in any academic community.

Egregious misconduct is considered sufficient grounds for the assignment of a failing grade in a course or dismissal from the MICaB program. Several examples of academic misconduct are given below:

- Copying answers from another student’s examination paper during a closed book examination.
- Consulting lecture notes, textbook, or a summary of important notes to oneself (a crib sheet) while writing a closed-book examination
- Copying answers from another student’s examination paper for a take-home examination
- Collaborating with other students in the course of developing answers to take-home examinations through discussion of the exam question and their answers.
- Submitting a paper written wholly or in part by someone else to meet course requirements for a term paper or other technical writing.
- Signing someone else’s name on an attendance sheet for a course, seminar, etc.
- Failing to adequately reference sources of information used in the preparation of a term paper or other technical writing.
- Submitting fabricated data in place of experimentally determined results in a laboratory experiment.
- Selectively modifying data points so that experimental results more closely approximate the expected result.
• Selectively reporting only one set of data from a collection of equally valid sets of data in order to support a favored hypothesis.

For more information on academic integrity, please visit the website for The Office for Student Conduct and Academic Integrity (OSCAI) at the University of Minnesota.

**ROTATIONS/LABORATORY REQUIREMENTS**

**Rotations**
All students must do laboratory work each semester. First year Ph.D. students are strongly encouraged to do three consecutive 10-week rotations. Students who wish to commit to a laboratory prior to completing all three rotations are required to meet with the DGS to discuss the reasons for an early commitment to a laboratory.

The first rotation must be scheduled before the start of the program and subsequent rotations should be scheduled one month before the current rotation ends. The first rotation begins at the start of the fall semester. The MICaB Program Coordinator must be notified when laboratory rotations have been established. Both students and faculty will be required to submit a written report of their rotation experience to the CGS. This report will be due at the conclusion of each rotation.

At the end of the 30th week of the rotation period, students are required to choose an advisor for dissertation research. If a student cannot identify an advisor by the end of the 30-week rotation period, they will be excused from the program.

**The choice of a permanent thesis advisor is the most important decision a student will make in the MICaB program.** Therefore, it is important for students to work hard and spend as much time as possible in the laboratory during their rotations. Students should keep in mind the following when completing their rotations:

- Are you excited about the research in the lab?
- Do you like the laboratory environment?
- Does the faculty member have funding to support a new graduate student?
- Do you think you will have a productive working relationship with the faculty member?

Students must complete the MICaB Student and Advisor Contract for Permanent Lab Assignment form after a permanent advisor has been selected.

**MICaB CREDIT REQUIREMENTS**

**Rationale**
A student must earn between 48 and 72 credits to obtain a doctoral degree at the University of Minnesota. At least 24 must be course credits and at least 24 must be thesis credits. A description of the MICaB course credit requirements follows. A description of the thesis credits (given for thesis-related research), plus when to register for course and thesis credits, is in the next section.

**Course Credits**
The course credits consist of required and elective credits. Both Ph.D. and M.D./Ph.D. MICaB students are required to take: 1) one core course (in the student’s track), 2) one focus area course (see below), and 3) MICA 8012 (to prepare for the preliminary examinations). Ph.D. students in their first year are also required to register 1 credit each semester for MICA 8094 (Research in MICaB; lab rotations).
**REQUIRED COURSE CREDITS FOR MICaB PH.D. AND M.D./PH.D. STUDENTS**

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits/Sem</th>
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<tr>
<td><strong>One core course:</strong></td>
<td></td>
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<tr>
<td>MICA 8002</td>
<td>Structure, Funct/Bacteria &amp; Viruses (Year 1)</td>
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<tr>
<td>OR</td>
<td></td>
<td></td>
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<tr>
<td>MICA 8003</td>
<td>Immunity and Immunopathobiology (Year 1)</td>
<td>4 F</td>
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<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICA 8004</td>
<td>The Biology of Cancer (Year 1)</td>
<td>4 S</td>
</tr>
<tr>
<td><strong>plus:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICA 8012</td>
<td>Integrated Topics in MICaB (Yr 1 [MD/PhD] or 2 [PhD])</td>
<td>2 F</td>
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*MICA 8012 must be taken in the fall of Year 1 (M.D./Ph.D. students) or Year 2 (Ph.D. students).*

**plus:**

**One Focus Area science course** *(5000-level or higher, minimum 3 credits).* The course can be any university graduate-level science course related to the student’s area of interest.

*Students may apply a second core MICaB course (MICA 8002, 8003, 8004) towards their focus area requirement.*

PhD and MD/PhD students in the immunology track are expected to take the MICa 8011 course. This course would satisfy the focus area science course requirements for these students.

**Focus Area:** Defined as a specific area of emphasis according to the diagram and list below. Students are advised to take core courses that reflect their focus area. Two examples follow:

- If the student’s focus area is the intersection of immunology and microbiology (e.g. infectious disease), then it would be prudent for the student to take BOTH MICA 8002 and 8003, and apply one towards the core course requirement and the other towards the “focus area” requirement.
- If the student’s focus area is in environmental microbiology, then a “focus area” requirement would be something other than MICA 8003 or 8004 – any University graduate-level science course (5000-level or higher) related to the student’s area of interest - while the core course requirement would be MICA 8002.

![Venn diagram](image)

1. Microbiology 2. Immunology 3. Cancer Biology
7. Microbiology, Immunology, & Cancer Biology

**ELECTIVE COURSE CREDITS FOR MICaB PH.D. AND M.D./PH.D. STUDENTS**
Elective credits are earned by taking courses that will supplement the required courses. The minimum number of total elective credits = 24 total course credits - # required credits taken. To complete the elective credits, students should enroll in other relevant science-based graduate level courses. Students should develop this coursework in consultation with their advisor. Although 8000-level courses are preferred, 5000-level courses may also be applied to complete the elective credits. However, no more than two 5000-level courses or one 5000-level and one 4000-level courses may be applied towards the elective credits. Please review the MICaB website for a list of recommended elective courses.

Students are strongly encouraged to take a course in bioinformatics, as a working knowledge in this burgeoning field is critical for most MICaB-related research. Here are some recommendations.

Recommended for students in the Microbiology track.
BioC 5361 - Microbial Genomics and Bioinformatics. Fall semester (St. Paul campus)

Recommended for students in the Immunology or Cancer Biology track.
Phcl 5111 - Pharmacogenomics. Spring semester (Minneapolis campus)

Recommended for students with some background in Biostatistics.
PubH 7445 - Statistics for Human Genetics and Molecular Biology, Fall semester (Minneapolis)

Preparing Future Faculty
Preparing Future Faculty (PFF) is a program co-sponsored by the Graduate School and the Office of Human Resources to provide graduate students and postdoctoral fellows with special teaching and learning opportunities in higher education. More information about the program, PFF courses, and mentoring and teaching opportunities is available on the PFF web site. Although MICaB students may take both PFF courses (GRAD 8101 and GRAD 8102), ONLY GRAD 8101 may be applied to the student’s elective credit requirement.

ENG 5051 and ENGC 5052 MICaB students who are non-native speakers of English may take ENGC 5051 (Graduate Research Writing Practice for Non-native Speakers of English) and ENGC 5052 (Graduate Research Presentations and Conference Writing for Non-native Speakers of English) to improve written and oral communication skills. However, these courses may NOT be applied to the student’s elective credit requirement.

Academic Performance Expectations
The MICaB program requires that all course work taken by MICaB students for credit be graded using the A-F system. Students are expected to receive a grade of B or better in each of these courses. Any grade lower than a C is unacceptable and is cause for dismissal.

Students must maintain a grade point average of 3.0. Students who do not maintain a grade point average of 3.0 have one semester to raise their grade point average to 3.0 or above. Failure to do so will result in dismissal from the MICaB Program. If a student's grade point average drops below 3.0 in the last semester of regularly scheduled coursework (e.g. in the spring semester of the second year), then the CGS will meet to discuss remedial measures. These measures could include additional coursework.

Class Schedule
The class schedule is online.

Thesis Credits
The Graduate School requires students earn at least 24 doctoral thesis (research-related) credits. MICaB permits students to register for these credits (MICA 8888) beginning their first semester. The rationale is to decrease the time it takes to accumulate at least 24 course plus 24 thesis credits. The course and thesis credits total 48, which is the minimal requirement to earn a doctoral degree at the University of Minnesota. Once these 48 credits are earned, tuition fees drop dramatically.

**ADDITIONAL REQUIREMENTS (NOT FOR CREDIT) FOR MICaB PH.D. AND M.D./PH.D. STUDENTS**

In the fall semester of their first year, students must complete RC4100 Responsible Conduct of Research RCR Core-Biomedical Sciences. This workshop is online and takes approximately 6 hours.

In the spring semester of their first year, students must attend a MICaB-sponsored ethics seminar. The date, time, and location of this seminar is announced at the start of the spring semester.

Students in years 1 and 2 must attend the weekly MICaB Student Seminar series. Students must also attend at least one of these two weekly seminar series: the MICaB Invited Speaker Seminar and the Cancer Center Seminar. Students in years 3 and beyond are strongly encouraged to continue attending these seminar series.

**ADDITIONAL REQUIREMENTS (NOT FOR CREDIT) FOR MICaB PH.D STUDENTS ONLY**

Students are required to be teaching assistants for two semesters, typically in their second and third years.

**REGISTRATION**

Registration is completed online. All Graduate School students are required to register in the Graduate School every fall and spring term in order to maintain active status.

In years 1 and 2, all students should register for a total of 14 course and thesis (MICA 8888) credits per semester. Do not register for more than 14 credits per semester. Graduate Assistant appointments pay for up to 14 tuition credits per semester. The number of thesis credits to register for each semester equals 14 minus the number of course credits taken that semester.

Students should contact the departmental office where their payroll is processed after completion of the 48 course and thesis credits so that tuition reduction paperwork can be completed.

Students who have completed the 48 course and thesis credit requirements, and have passed their written and oral qualifying examinations, should register for MICa 8444 1 FTE only and complete the one-credit registration request. The one-credit registration request must be completed every semester of enrollment.

**Summer Registration**

Students should not register for summer session unless the student is a NSF fellow. Students who register for summer session must complete the “Summer Request for Tuition Benefits” form and submit it to the Graduate Assistant Office (200 Donhowe) and a copy to the student’s departmental payroll office.

**SEMINARS**

MICaB Invited Speaker Seminar Series
The MICaB Invited Speaker Seminar Series features research presentations from scientists from other institutions who have been invited to the University of Minnesota by MICaB faculty. The seminar is held on Mondays from 12:00-1:00 during the academic year. Students and postdocs have lunch with the seminar speaker after the seminar. Students are also encouraged to attend a “Beer and Science” session on Monday afternoons for an in-depth discussion with the seminar speaker, if speaker’s faculty host schedules this session. The student who chooses to attend is opening the network to future success and development.

Cancer Center Seminar Series
The Cancer Center Seminar Series features cancer-related research presentations from local and external scientists. The seminar is held on Tuesdays at noon during the academic year in Room 450 MCRB.

MICaB Student Seminar Series
The MICaB Student Seminar Series features research presentations by current MICaB students. The seminar is held on Thursdays from 12:00-1:00 during the academic year. Pizza and soft drinks are provided.

MICaB Ph.D. students are required to give a presentation in the MICaB Student Seminar Series during their second and fourth years in the program. MICaB M.D./Ph.D. students are required to give a presentation in the MICaB Student Seminar Series during their first and third years in the program. The first seminar will be a 20-25 minute presentation, while the second seminar will be a 40-45 minute presentation. Three MICaB faculty members (one from each track) will evaluate the seminar presentation. Following the seminar, each of these faculty members will meet with the student to provide feedback to help improve the student’s seminar presentation skills.

Seminar Attendance Requirements
All students in the MICaB program are expected to attend the MICaB Student Seminar Series and either the MICaB Invited Speaker Series or the Cancer Center Seminar Series every week.

Student-Invited Seminar Speakers
Each year, students in the MICaB program invite distinguished scientists to visit and present their latest research to the MICaB program. There are three student-invited seminar speakers, one for each track. These speakers are nominated and selected by the students, and a student host coordinates the visit. The MICaB student representatives are responsible for soliciting nominations, handling the voting process, and identifying student hosts for the speakers.

JOURNAL CLUBS AND DATA CLUBS

Journal clubs and data clubs provide important opportunities for students to improve their communication skills, stay current on the latest research, and obtain feedback on their research.

Students in the MICaB program are required to regularly attend a journal club where there is active participation by scientists (faculty, postdocs, grad students) working in other laboratories. Students are required to make a minimum of one presentation per year of a peer-reviewed publication in this journal club. The student will provide in her/his annual progress report information on this presentation (journal club, date, citation of paper presented for discussion). Examples of appropriate journals include, but are not limited to, the following:

- Microbiology Journal Club
- Immunology Journal Club
- Virology Journal Club
- Cancer Biology Journal Club
• **Stem Cell Institute Journal Club**

Students should also give regular “research-in-progress” presentations at data club meetings, such as the [Immunology Supergroup meeting](#) or other combined lab meetings.

### TEACHING REQUIREMENTS

An essential aspect of advanced study in biology is the experience gained in teaching. For this reason, the MICaB program requires that each Ph.D. student assist in laboratory and classroom teaching during their tenure in the program. Typical teaching duties include assisting students in a “wet lab”, preparing reagents and equipment for student use, grading notebooks and examinations, and conducting tutorial and review sessions. MICaB students are required to assist in teaching two to three semesters; the exact number depends on the course loads and the number of available students in a given semester.

Teaching requirements are typically fulfilled beginning in the fall semester of the second year in the MICaB program. The MICaB Program Coordinator will notify students by email prior to the start of the fall semester regarding the available teaching opportunities. Students should respond promptly to this email with specific preferences and any obligations or commitments that may conflict with teaching in any given semester. The MICaB program will make every effort to accommodate specific preferences, but this is not guaranteed.

#### Information for MICaB Students who are Nonnative English Speakers

The University of Minnesota has a spoken English Language Proficiency (ELP) requirement for all nonnative English speaking graduate students appointed to teaching assistant (TA) positions. University of Minnesota policy considers a nonnative speaker to be a person who grew up in a home where the language was other than English. This applies to US citizens and to those who have degrees from institutions in the United States or countries where English is the medium of instruction.

The [University of Minnesota ELP policy](#) states: “High standards of English language proficiency are required for nonnative English speaking graduate and undergraduate students who are appointed to teaching assistant (TA) positions.”

All nonnative English speaking graduate and undergraduate Teaching Assistants (TAs) will demonstrate proficiency in spoken English appropriate to the demands of their teaching assistantship. Appendix: English Language Proficiency Requirements provides language eligibility requirements applied to different teaching assistant responsibilities. Proficiency is assessed in one of the following ways:

- English Language Proficiency (ELP) rating earned through coursework with the Center for Teaching and Learning (CTL).
- Speaking section of TOEFL iBT (internet-based Test of English as a Foreign Language).
- SETTA (Spoken English Test for Teaching Assistants) test (TC campus) or alternative test chosen by coordinate campuses.

The MICaB program recommends that all students who are nonnative English speakers fulfill one of the three proficiency assessments provided above. Students must obtain an ELP rating of 1 or 2 to be able to complete their teaching requirements in the MICaB program. Students can learn more about the ELP requirements at an [Overview of Spoken English Testing & TA Eligibility](#) and [The Spoken English Test for Teaching Assistants](#). Additional resources for Nonnative English speakers engaged in teaching are available at the [International TA Program](#).
Teaching Resources
The Center for Teaching and Learning Services provides resources for a successful teaching experience. These resources include a Teaching Enrichment Series and Online Workshops and Tutorials.

MICaB EXAMINATIONS

There are 3 examinations in the MICaB program for the Ph.D. degree:

1. Written Proposition
2. Oral Preliminary Examination
3. Thesis Defense/Final Oral Examination

WRITTEN PROPOSITION AND ORAL PRELIMINARY EXAMINATION
In the MICaB preliminary examination, MICaB students must be able to: 1) develop, write and orally defend a hypothesis-driven research proposal that outlines a series of experimental approaches that test the validity of the hypothesis; and 2) demonstrate knowledge of core information and concepts in the fields of microbiology, immunology and/or cancer biology.

For Ph.D. students, the written proposition must be submitted to the CGS no later than April 1 of the student’s second year in the MICaB program. For M.D./Ph.D. students, the written proposition must be submitted to the CGS no later than April 1 of the student's first year in the Ph.D. phase of their training.

For Ph.D. students, the oral preliminary examination must be completed BEFORE the beginning of the fall semester of the student’s third year in the MICaB program. For M.D./Ph.D. students, the oral examination must completed BEFORE the beginning of the fall semester of the student's second year in the Ph.D. phase of their training.

Guidelines for Preliminary Examination Committee
The MICaB program requires that the preliminary exam committee consist of 6 faculty members. This includes the student’s thesis advisor. The preliminary exam committee should consist primarily of faculty with relevant expertise in the student’s focus area. The committee should be constructed with the advice of the student’s advisor. Students should meet briefly with prospective committee members to discuss their availability to serve on their committee.

- At least 5 of the 6 committee members must be on the MICaB faculty. The thesis advisor counts as one of the 5 MICaB faculty members.
  - The student should ask one MICaB faculty member (other than the thesis advisor) to serve as Chair.
  - The committee must contain one faculty member whose primary expertise is outside the student’s focus area and is a member of another graduate program(s). If possible, this committee member should have no affiliation with the MICaB program. At minimum, this committee member can be a MICaB faculty member but must also have a graduate faculty appointment in another program. This faculty person is designated the “minor/supporting program” member.
  - If the student has declared a minor, at least one member must represent the minor field.
  - Members cannot satisfy the requirement with respect to more than one field.
- The thesis advisor is NOT a voting member of the examining committee.
  - The thesis advisor does not vote on the acceptability of the written or oral examination.
• The thesis advisor **must** attend the oral preliminary examination, either in person or remotely (via telephone or video conference).
  ‣ The advisor may not vote or ask questions during the oral exam. However, the advisor may clarify issues during and after the exam if asked by committee members.

The preliminary exam committee is not the same as the thesis committee. Following successful completion of the oral preliminary exam, the student’s advisor becomes a voting member of the thesis committee. Students can change the membership of the committee as needed based on the development of the student’s thesis research.

Submission of Proposition Abstract and List of 6 Exam Committee Members to the CGS
Submit the following to the MiCaB Program Coordinator **no later than February 1 at 4:00 pm**:

• The student’s focus area.
• The list of 6 faculty members who have agreed to serve on the student’s exam committee. The rationale for providing this list is that the CGS will avoid asking these faculty members to serve on the exam committee if the CGS deems changes to the committee need to be made (see below). This list needs to include and identify:
  ‣ The student’s advisor
  ‣ The committee Chair
  ‣ The faculty member serving as the “minor/supporting” program member.
• A one page draft of the **Specific Aims** section of the proposition.

The MiCaB CGS will review the provisional exam committee and will either approve the committee or suggest one (or more) proposed member(s) be replaced by other MiCaB faculty. One example of why a replacement would be suggested is that a proposed member is currently serving on more than 3 other MiCaB preliminary exam committees. In any given year, a MiCaB faculty member may serve on no more than 2-3 MiCaB preliminary exam committees. Another example is that the committee lacks expertise in all of the focus areas identified by the student. This could occur if the student indicated her/his focus area spanned more than one of the three MiCaB tracks yet did not include at least one faculty member from each of the chosen tracks on the provisional exam committee.

Once the MiCaB CGS approves the membership of the exam committee, the Graduate School’s **Graduate Degree Plan** is completed and submitted to the MiCaB Program Coordinator **no later than March 1**. You will receive an email notice from the Graduate School after your Graduate Degree Plan is approved. Following this approval notice submit your **Preliminary Examination Committee members** online for Graduate School approval.

**The Written Proposition**
The written proposition is a NIH-style research grant proposal. *The proposition must be hypothesis-driven and can focus on an unsolved problem within the area of the student’s thesis research.* Alternatively, students may develop a proposal distinct from their thesis research. The hypothesis the proposition tests must not be trivial and must go beyond present knowledge, but not to the extent that it is indefinable, unpredictable or unfeasible by present methodology. In addition to a stated hypothesis with alternatives, the proposition must contain a brief review of the literature pertinent to the specific question, a detailed description of experiments designed to test the hypothesis, a discussion and interpretation of the anticipated results, and a concise statement of the significance of the project. *Refurbished class assignments are not allowed.*

**Fellowship Applications**: Fellowship applications submitted **before** the written preliminary examination deadline are encouraged. However in this case the preliminary examination
proposal must address a different central hypothesis than that submitted for the fellowship.

If the student is planning on writing and submitting an external fellowship application after their written preliminary examination, it is strongly recommended that the written preliminary examination hypothesis be different from that of the fellowship application. The rationale for this strong recommendation is to ensure the written preliminary examination is entirely the student's own work, and is not a collaborative effort between the student and advisor, as an external fellowship application would be.

However, a student may still prepare an external fellowship application that is based on the written proposition, if the student so desires. In this case, the student and advisor must inform the MICaB CGS if this is their intent, and that they are aware of the MICaB program's policy regarding external fellowship applications based on the written preliminary examination. This policy states that the student cannot seek any assistance from anyone on the external fellowship application until after the student has officially PASSED both the written and oral preliminary examinations. Therefore, it is essential for the student to plan well in advance, keeping the fellowship application deadlines in mind.

Format of the Written Proposition

General Considerations:
- Font: Arial 11 pt
- Line spacing: single (not "exactly")
- Margins: 0.5-inch top, bottom, left, right
- Text alignment: Left aligned (the right margin is "ragged")
- Page numbers: With the exception of the face page, each page is sequentially numbered in the center of the footer. The footer is spaced 0.3” from the bottom edge of the document.
- Name: Right align your name in the header (last, first, middle initial) on each page except the first page (which has no header). The header is spaced 0.3” from the top edge of the document.
- Figures/Tables: Embed each figure and table in the text and include a brief legend (figures) or descriptive title (tables). Number figures and tables.

Face page = first page
- Title < 80 characters, including the spaces between words and punctuation.
- Choose a title that is specifically descriptive, rather than general.
- Your name goes below the title
- List your committee members below your name and indicate each one’s role (i.e., Chair, Major Field, Minor Field).

Description of Planned Research:
- 10 pages or less, without references. It includes:
  - Specific Aims – 1 page or less
  - Research Strategy – 9 pages or less (including figures and tables)
    - Significance
    - Innovation
    - Approach
    " Background/review of relevant literature
    " Preliminary studies
    " Research design and methods
- The amount of space dedicated to each section is up to you, as long as you adhere to the limit of 10 total pages (excluding references).
References:

- No page limit but be judicious
- Format – include authors’ names and full title of the article.
  - If the number of authors exceeds six, list only the first author followed by et al.

Submission and Due Date

- Submit the following to the MICaB Program Coordinator **NO LATER THAN APRIL 1 at 4:00 pm.**
  - An electronic copy of the proposition in a single PDF file (by email to the MICaB Program Coordinator).
  - If April 1 falls on a weekend or holiday, the written proposition is due on the next workday by 4:00 pm.
  - Propositions may be submitted prior to the due date.
  - Late submissions will not be reviewed and the student will be excused from the program.

General Considerations about the Written Proposition

Students must develop and write the written proposition independently. Students may consult broadly and generally with other students, members of the student’s laboratory, and other faculty (including the student’s advisor and members of the exam committee) when developing background materials and the general concepts for the written proposition. **The student's advisor or other faculty members may not read or edit the written proposition prior to submission.** Anyone else may read the proposal to provide constructive criticism.

- The adverbs “broadly” and “generally” refer to directions in which the proposition will head, and exclude detailed discussions of specific hypotheses and experimental aims and approaches.
- Other than these initial broad and general discussions, a student CANNOT discuss her/his proposition with her/his advisor until AFTER it has been accepted.
  - This means that if a proposition requires revisions, the student CANNOT discuss the original or revised version with her/his advisor until AFTER the revision is ultimately accepted by the thesis examining committee.
  - After the proposition is found acceptable by the thesis examining committee, the student may discuss it with her/his advisor and solicit her/his help in preparing for the student’s oral defense of it.
- The student’s thesis advisor may read the written proposition (original and revised) after it is submitted but may not discuss it with the student until after it is found acceptable by the thesis examining committee.
  - If the advisor wishes to read the written proposition, he/she should request a copy of it from the MICaB Program Coordinator.

An R01 typically describes five year’s worth of work and is a maximum of 12 pages. A student’s written proposition should encompass about three year’s worth of work, or roughly the amount of research typically required to obtain a doctoral degree. Because of this shorter period (3 versus 5 years), the maximum length of the written proposition is 10 pages.

The format is based on the current NIH requirements for R01 submission. The instructions below are excerpted from the NIH’s guide for **grant submissions.**

**SPECIFIC AIMS**
On one page provide all of the following: 1) no more than three paragraphs (two is preferable) that establish the relevance of your project to the field (i.e. importance), current knowledge, the gap in the knowledge base, your long-term goal, the objective of this application, and your central hypothesis, 2) no more than three specific aims to test your central hypothesis, and 3) a payoff paragraph that presents the expected outcomes and anticipated positive impact.

RESEARCH STRATEGY
If an applicant has multiple Specific Aims, then the applicant may address Significance, Innovation and Approach for each Specific Aim individually, or may address Significance, Innovation and Approach for all of the Specific Aims collectively.

(a) Significance
• 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.

(b) Innovation
• 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 concepts, approaches or methodologies, instrumentation or interventions.

(c) Approach
• Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted.
• Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
• If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high risk aspects of the proposed work.
• Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised.
• Conclude with a concise statement of the significance of the project. Insight and creativity in solving the problem will be an important basis for evaluation, as well as the ability to present a focused plan. Arguably, the most common criticism of these propositions is a lack of focus.

Evaluation of the Written Proposition
The proposition is distributed to all members of the exam committee. The thesis advisor DOES NOT prepare a written critique. The minor field examiner IS NOT REQUIRED to prepare a written critique but may do so if he/she chooses. The other 4 committee members are required to prepare a written critique. Critiques should comment specifically on the creativity, originality and validity of the proposition and of the experimental approaches proposed to test the postulated hypothesis as well as on the quality of the presentation. Both positive and negative points will be highlighted. Each of the 5 voting members (including the minor field examiner not required to provide a written critique) will indicate whether the proposition is acceptable, needs revision or is unacceptable.
The flow chart summarizes the possible outcomes of the written examination. Details follow.

- **ACCEPTABLE**: If all five voting examiners rate the proposition as acceptable, the student may schedule the oral preliminary examination (see below).

- **NEEDS REVISION**: It is the policy of the MICaB program to return the written proposition if any voting member of the exam committee votes for revision. This includes the minor field examiner.
  - The conditions to be met must be given in writing to the student within ten working days.
  - After receiving the comments from the exam committee, the student should meet individually with each committee member who requests changes so that there is a clear understanding of the concerns and how to adequately address them.
  - The student’s thesis advisor is NOT allowed to comment or help with the revision.
  - The revised proposal should be prepared as follows:
    - Include no more than a 3-page introduction to the revised proposal that presents a point-by-point response to the criticisms, and a summary of the changes that have been made. These introductory pages do not count towards the 10-page limit (i.e., revision plus rebuttal may be up to 13 pages long).
    - Clearly mark the changes in the proposal by appropriate bracketing, indenting, or changing of typography, unless the changes are so extensive as to include most of the text. This exception should be explained in the Introduction.
    - Students have only ONE opportunity to revise their proposition (see evaluation below).
  - The revised proposition is due by 4:00 pm 4 weeks after the initial evaluation is returned to the student.

- **UNACCEPTABLE**: If any voting member of the exam committee judges a proposition to be unacceptable, then the student must develop a secondary proposition.
  - Students should follow the same guidelines that were used to prepare the initial proposition (see above).
    - As before, the proposition should state a hypothesis about an unsolved
problem within the area of the student's thesis research. This hypothesis must not be trivial and must go beyond present knowledge, but not to the extent that it is indefinable, unpredictable or unfeasible using present methodology. In addition to a stated hypothesis with alternatives, the proposition must contain a brief review of the literature pertinent to the specific question, a detailed description of experiments designed to test the hypothesis, a discussion and interpretation of the anticipated results, and a concise statement of the significance of the project. Insight and creativity in solving the problem will be an important basis of evaluation.

- Students are urged to consult with exam committee members as the new proposition is developed.
  - This consultation may include having the exam committee members review the specific aims page of the new proposition.
- Students have only ONE opportunity to develop a new proposition (see evaluation below).
- The new proposition is due 4 weeks after the evaluation of the initial proposition is returned.

**Evaluation of Revised and Secondary Propositions**

All revised and secondary propositions are evaluated as either acceptable or unacceptable. If all 5 voting examiners judge the revised or secondary proposition to be acceptable, then the oral preliminary examination may be scheduled.

If there is disagreement among the committee regarding the revised or secondary proposition (i.e., one or more “unacceptable”), then the committee and the DGS will meet to discuss the proposition.

- If the overall decision on the proposition is “acceptable”, then the student will be allowed to proceed to the oral preliminary examination.
- The role of the DGS is to facilitate communication between the committee and the CGS, and to answer any programmatic questions the committee may have.
- If the overall decision on the proposition is “unacceptable”, then this decision will be forwarded to the CGS for discussion. The CGS will make the final decision.
  - As outlined in the MICaB Policies and Practices, students will be excused from the program if the overall decision on the secondary proposition is “unacceptable”.

**Oral Preliminary Examination**

The oral examination can only take place after examiners have certified that the candidate received a passing grade on the preliminary written examination and that any reservations have been removed.

For Ph.D. students, the oral preliminary examination must be completed BEFORE the beginning of the fall semester of the student’s third year in the MICaB program. For M.D./Ph.D. students, the oral examination must completed BEFORE the beginning of the fall semester of the student’s second year in the Ph.D. phase of their training.

Students should reserve a room for 3 hours. Oral examinations typically last 2-2.5 hours so 3 hours should be more than sufficient. Notify the MICaB Program Coordinator by email of the date, time and location of the oral examination. Once the exam has been scheduled, complete and submit the online Prelim Oral Exam Scheduling form to the Graduate School.
The purpose of the oral preliminary examination is: 1) to test the student’s ability to present and defend the written proposition; and 2) to test the breadth and depth of the student’s knowledge of fundamental key concepts in their focus area and in the courses they took.

All 6 members of the examining committee (including the thesis advisor) and the candidate must participate in the preliminary oral examination. Committee members and/or the student may participate remotely as long as all conditions for remote participation in the examination are met. In addition to the written proposition, the exam committee will have a copy of the student’s unofficial transcript (which lists the courses taken by the student), and course syllabi and reading lists for the MIcAB required courses (8002, 8003 and/or 8004, 8012).

The oral preliminary exam will have the following format:
- The student will be asked to leave the room before the exam begins. At this time, the chair of the exam committee will review the ground rules of the exam with other committee members.
- At the beginning of the exam, the student will give a short oral presentation introducing the written proposal to the committee. Students may wish to state the hypothesis and aims and provide a model. Preliminary data are not required. This presentation can be up to 10 minutes in length. No computer (i.e., PowerPoint, Keynote, etc.) presentations will be permitted, but an overhead projector or whiteboard may be used. Committee members will NOT be allowed to ask questions during the student’s presentation.
- Following the presentation, the 5 voting committee members will ask questions about the written proposition or topics related to the written proposition. The committee will have from 1 hour and 50 minutes to 2 hours and 20 minutes to question the student, for a total of 2 to 2.5 hours. In general, the first portion of the examination will be used for questioning the student about their proposal and the latter portion of the exam used for questioning general knowledge in their focus area and in the courses they took, with the timing of these portions left to the discretion of the committee. The chair of the committee is responsible for adhering to the oral preliminary examination format.

Preparing for the Oral Preliminary Examination
- Students are strongly encouraged to have mock oral examinations using classmates, lab mates or other qualified individuals as surrogate committee members. This includes the student’s mentor.
- Practice giving the 10 minute white board introduction.
- Know the written proposition thoroughly. Know it at multiple levels. For example, know why you are proposing to use a particular endothelial cell line. Know its origin. Know what characterizes endothelial cells and distinguishes them from other cell types. You are responsible for every word in your proposition so be prepared to defend each one.
- Know the information covered in the courses you took.

Evaluation of the Oral Preliminary Examination
The flow chart summarizes the possible outcomes of the oral examination. Details follow.
Immediately after the examination, the candidate is excused from the room and a written secret ballot is taken by the 5 voting committee members before discussing the examination. Following the discussion, a second and final vote is taken, and the participants sign (in the appropriate place on) the Oral Examination Report Form.

The final outcome of the examination is recorded in one of three ways: pass, pass with reservations, or fail. The voting proportions necessary to pass are a unanimous passing vote (with or without reservations) or 4 passing votes (with or without reservations) and 1 failing vote. Candidates who do not earn committee votes in these proportions (5-0 or 4-1) fail the examination.

- **Pass**
  - Five pass votes or votes of 4 pass and 1 fail are needed.
  - The student should make a copy of the signed Preliminary Oral Examination Report form for his/her records. The student should then hand deliver the original signed Preliminary Oral Examination Report to the Graduate School (GSSP Office, One Stop Center, Bruininks Hall) within one working day of completion of the oral preliminary exam. Or the signed form can be emailed to GSSP (gssp@umn.edu) as a pdf.
  - If, to achieve the minimum number of votes to reach a verdict of pass, any vote of pass with reservations is included, then the outcome is pass with reservations.

- **Pass With Reservations**
  - At least one vote of pass with reservations is included among the minimum number of 4 pass/pass with reservations votes.
  - If the student passes the examination with reservations, the student is informed immediately, but the committee is permitted one week in which to convey its reservations to the student in writing, informing the student of the steps that must be taken to remove them.
  - Ideally, the student should be able to address the reservations within 3 months of the exam. However, some reservations (e.g. taking a courses taught in the Spring semester; attend a journal club for a year) may take longer to complete – **however, the maximum timeframe for lifting reservations for the MICaB program is 1 year after the exam**, and it is the student’s responsibility to contact the exam committee chair with quarterly reports to show progress toward lifting the reservations. This needs to be explicitly stated when the committee informs the students of the way in which their reservations can be lifted.
  - A copy of this letter must be sent to the Graduate School (GSSP, One Stop Center, Bruininks Hall) and should accompany the signed Oral Examination Report Form.
When the student has satisfied the committee’s reservations, a second letter informing the student and the Graduate School that the reservations have been removed and that the student may proceed toward the degree is also required. Both letters should be written by the committee chair.

- The final oral examination may not be scheduled until the Graduate School has received a copy of the letter indicating that the reservations have been removed.

If the committee members disagree as to whether the reservations have been satisfactorily removed, the committee chair asks for another vote, the results of which are subject to the same voting proportions as the initial vote (i.e. at least 4 votes to remove the reservations are required).

- If the student is unable to satisfy the committee’s reservations, he or she fails the examination and cannot proceed toward a doctoral degree in the MICaB Graduate Program.

Fail

- At least two fail votes are cast.

- If a student fails the exam, he or she may be allowed, on unanimous recommendation of the 5 voting committee members, to retake the examination.
  - The reexamination must be conducted by the original preliminary oral examining committee.
  - In no case may the reexamination take place before 10 weeks have passed.
  - No more than one reexamination is allowed.

- If the committee does not approve a retake, or if the student fails the second attempt, the student cannot proceed toward a doctoral degree in the MICaB Graduate Program.

Recess of a Preliminary Oral Examination
If the preliminary oral examining committee recesses without having determined whether a student has passed the examination, the chair of the committee must send a letter to the vice provost and dean of graduate education explaining the reasons for the recess and noting the date on which the examining committee will reconvene. If the recess will be longer than one week, the Preliminary Oral Examination Report Form must be returned to the Graduate School, and the student must reschedule the examination with the Graduate School one week in advance. A new Preliminary Oral Examination Report Form will be mailed to the chair of the committee one week before the date on which the committee will reconvene. The reconvened committee must be composed of the same members as the original preliminary oral examining committee.

Cancellation of a Preliminary Oral Examination
If the preliminary oral examination cannot be held on the scheduled date, the Graduate School must be notified of the cancellation. The Preliminary Oral Examination Report Form must be returned to the Graduate School (GSSP, One Stop Center, Bruininks Hall). The student must reschedule the examination with the Graduate School at least one week in advance of the new exam date. A new Preliminary Oral Examination Report Form will be issued.

THESIS DEFENSE/FINAL ORAL EXAMINATION
The Thesis Committee consists of 4-6 Graduate Faculty who have agreed to provide advice to the student on her/his thesis research and to serve as examiners for the final Oral Examination. The Thesis Committee includes the student’s advisor. Students do not need to retain all members of their Preliminary Exam Committee on their Thesis Committee and are encouraged at this stage to select Thesis Committee members with relevant expertise that will facilitate the completion of the student’s thesis research. A MICaB faculty member other than the student’s advisor is asked by the student to chair the Thesis Committee.
After the Thesis Committee is established, the student must complete and submit the online Final Oral Examining Committee form no later than 1 semester after passing the Oral Preliminary Examination.

Anytime after the Thesis Committee has been approved by the Graduate School, the student can request a graduate packet online. Graduate students will be responsible for downloading their own graduation packet materials from the Graduate School website. After a student has requested their packet and the system has verified they have completed their eligibility milestones (e.g. active status, approved degree plan, approved final committee), they will be prompted to download their materials. The graduation packet materials will include: Exam forms and Reviewers Report forms, graduation checklists, graduate application for degree, formatting and submission guidelines.

The student is required to meet with her/his Thesis Committee approximately 9 months before the desired thesis defense date. The purpose of this meeting is to ensure the student, advisor and committee are all in agreement as to what work remains to be done prior to the thesis defense.

Before proceeding, read the Graduate School's Doctoral Degree: Completion policy statement.

Thesis Reviewers for Final Oral Examination
- A minimum of 2 major field reviewers and 1 minor/outside reviewer are required.
  - In the case of multiple minors, there must be a reviewer for each minor.
- Advisor(s) and the committee chairperson must serve as reviewers.
- Students must provide reviewers with a copy of the dissertation at least 14 days before the scheduled date of the doctoral final oral examination.
- Every designated reviewer on the doctoral dissertation reviewer’s report must certify that the dissertation is ready for defense before the doctoral final oral examination may take place.

Scheduling the Thesis Defense
Review the Doctoral Dissertation Submission requirements. Carefully read the Graduate School student graduation checklist and the related embedded links for complete instructions regarding graduation requirements and deadlines.

We strongly urge students to plan in advance by reading all instructions and making a checklist with what needs to be done when. This will minimize stress and chaos. The checklist and descriptions of possible scenarios below may help.

1. Schedule the thesis defense (final oral examination) date as soon as realistically possible.
   1.1. Coordinating the schedules of several busy individuals is challenging. The sooner the date is locked in, the better it is for everyone.
   1.2. Reserve a room for two hours for the final oral examination.
   1.3. Notify the MICaB Program Coordinator by email of the date, time and location of the final oral examination.
   1.4. Students must schedule the final oral examination at least one week in advance with the Graduate School. The student must be the one to initiate the online scheduling process.
2. Write the thesis with your advisor’s help. Refer to previous theses as examples.
   2.1. Click on the following link for specific formatting guidelines for the doctoral dissertation.
3. Submit your Graduate Application for Degree form (included in your Graduation Packet) and submit to (GSSP, One Stop Center, Bruininks Hall).
   3.1. Complete and submit the Application for Degree form to the Graduate School office at least 30 calendar days in advance of your thesis defense day.
   3.1.1. If this submission day falls on a weekend or holiday, then the form must be submitted no later than the last working day preceding the submission day.
   3.2. Other information will be in the degree application package.
4. To permit faculty to allocate sufficient time to read the thesis and decide whether it is ready for defense, students must notify their advisor and other members of the Thesis Committee at least two weeks in advance that the thesis will be delivered on a particular date.
   4.1. All members of the student's Thesis Committee must then have at least two weeks to read the thesis after it has been delivered.
   4.1.1. This includes the reviewers and the other committee members.
5. After reading the draft of the student's thesis, the reviewers have three options when presented with the Thesis Reviewers Report Form to sign by the student.
   5.1. Acceptable for defense as presented
   5.2. Acceptable for defense with minor revisions
   5.3. Not acceptable for defense as presented/requires major revisions.
   5.4. The student must inform all committee members of all reviewers' decisions.
6. Reviewers must be unanimous in certifying that the dissertation is ready for defense, whether as presented (i.e. all reviewers choose option 5.1) or with minor revisions (i.e. a mixture of options 5.1 and 5.2).
   6.1. If this is the case, and all other requirements have been met, the Graduate School authorizes the final oral examination.
   6.2. In any instance where revisions are required, the committee must inform the student in writing of the revisions required, and all questions concerning such revisions must be resolved before the final copies of the dissertation are submitted and the degree is conferred. It is the advisor's responsibility to ensure that revisions required by the reviewers are satisfactorily made.
7. If the reviewers are NOT unanimous in certifying that the dissertation is ready for defense, whether as presented or with minor revisions (i.e. one or more reviewer chooses outcome 5.3), then the Chair must convene a meeting with all Thesis Committee members to discuss the concerns and options. This meeting should occur as soon as possible (within days). To facilitate this, the meeting can occur in person, by phone or video conference or a discussion can occur via email.
   7.1. If the meeting concludes with a unanimous decision that the thesis is now ready for defense (i.e. a reviewer(s) reversed the original decision of NOT acceptable for defense as presented/requires major revisions), then the final oral examination may proceed as originally planned.
   7.2. If at least one reviewer chooses option 5.3 (not acceptable for defense as presented/requires major revisions) at the meeting's conclusion, then the Chair must inform the student that the final oral examination must be postponed.
   7.3. The committee must inform the student in writing of the revisions required, and all questions concerning such revisions must be resolved before the final oral examination is rescheduled and final copies of the dissertation are submitted and the degree is conferred.
8. It is the MiCaB Program's policy that the signed Thesis Reviewer's Report must be submitted to the Graduate School at least one week prior to the scheduled date of the final oral examination.
   8.1. This means students need to give the thesis to the reviewers at least three weeks prior to the final oral examination.
8.1.1. Three weeks = two weeks (for them to read it) + one week (to submit the signed Thesis Reviewer’s Report prior to the defense date).

9. To be eligible for the final oral examination, a student must have:
   9.1. Completed all work on the official doctoral degree program form, including the language requirement, if any.
   9.2. Passed both the written and oral preliminary examinations.
   9.3. An approved thesis proposal on file with the Graduate School.
   9.4. Maintained active status.
   9.5. Satisfied the thesis credit requirement.
   9.6. The thesis certified as ready for defense by the readers.

Remote Participation in Graduate Examinations
If one committee member cannot physically attend your thesis defense, you must meet the conditions provided in the Graduate School’s “Required Conditions and Best Practices for Remote Participation in Graduate Examinations.” The absent committee member participates remotely in the final thesis defense (e.g. via videoconferencing) and must electronically scan or fax her/his signature on a copy of the final oral examination report form to the committee chair.

Final Oral Examination
There are two parts to the final oral examination. The first part is a public seminar given by the student covering the thesis research. All interested faculty and students are invited to attend. The second part of the final oral examination consists of a closed meeting with the student’s Thesis Committee. During this meeting, the student will answer additional questions from members of the Thesis Committee.

Immediately after the examination, the candidate is excused from the room and a written, secret ballot is taken before discussing the examination. Following the discussion, a second and final vote is taken. To be recommended for the award of the Ph.D. degree, candidates must receive a vote with no more than one dissenting member of the total examining committee. If the student has clearly passed or clearly failed the examination and all members have signed the final examination report form, the report form must be returned to the Graduate School within a week following the examination.

The student’s advisor should be responsible for ensuring the inclusion of appropriate modifications and required revisions, if any, in the final thesis. Once the final report form has been returned to the Graduate School indicating that the student has either passed or failed the final oral examination, a hold is placed on the student’s records to prevent further registration in the Graduate School. If the advisor indicates that the student needs additional time to make minor revisions to the thesis before it is submitted to the Graduate School, the student is permitted to register for one additional semester. Once the thesis has been submitted, no further registration in the Graduate School is permitted unless the student has been admitted to professional development status or to another major field.

Students should submit one bound copy of the final thesis to the MICaB Program Coordinator.

ANNUAL REVIEW OF MICaB STUDENT PROGRESS

All students in the MICaB program are evaluated in June of each year that they are in the MICaB program. Yearly re-appointment in the MICaB program is contingent on satisfactory student progress, as assessed during the annual review by the student’s advisor, thesis committee and CGS. Students will be provided with a written copy of the results of the review.
Students in Year 1 and Year 2 (probationary period)
First and second year MICaB students submit a Student Progress Report (provided by the MICaB Program Coordinator) to the MICaB Program Coordinator. In Year 2, the student’s thesis advisor also submits an independent evaluation of the student’s progress. The student then meets with three members of the CGS to discuss the reports and his/her progress in the program. A summary letter is provided to the student by the CGS following this meeting. If the CGS identifies any student who is not making satisfactory progress, the student will have up to one year to remedy the situation.

The student will be excused from the MICaB program if satisfactory progress is not made during the probationary period.

Students in Year 3 and Beyond
The student’s advisor and thesis committee are responsible for ensuring adequate progress towards completion of the Ph.D. degree by MICaB students who have successfully passed the oral preliminary examination. Students must submit a Student Progress Report each June (provided by the MICaB Program Coordinator) outlining their progress in the program. The student’s advisor and the chair of the student’s thesis committee also submit independent evaluations of the student’s progress. These reports are reviewed by the CGS.

If these reports are not provided, a hold will be placed on the student’s record. The student cannot register for credit and cannot proceed with meeting the degree requirements until the hold is lifted (by submission of the progress reports).

Students are required to meet with their thesis committee at least once per year to discuss their thesis research and obtain feedback from the committee.

Please note that if any MICaB student wishes to meet with the CGS, this can be arranged at any time. Any confidential issue should be brought to the attention of the DGS.

Nine month committee meeting
The student should meet with her/his thesis committee approximately nine months before the anticipated defense date. The purpose of this meeting is to ensure the student and committee are in agreement regarding what is required for a defensible thesis (e.g. everyone is on “the same page” in terms thesis content and organization). A summary of this meeting is to be provided by the committee chair to the MICaB Program.

- A Ph.D. student should plan to have the nine month committee meeting during the first half of their 5th year (because the average time to degree completion is 5.3 years).
- An M.D./Ph.D. student should plan to have the nine month committee meeting during the first half of their 4th year (because the average time to degree completion is 4.0 years).
- If a student plans to have the nine month committee meeting later than these time frames, then the student and advisor need to submit a detailed progress report to the MICaB Program outlining what is still needed for a defensible thesis.
  ‣ The MICaB CGS will review this report and if necessary, meet with the student and advisor to discuss how best to reach a thesis defense date in a suitable and timely manner.

Degree Completion Time Limits
Students in the MICaB program should be able to complete the requirements for a Ph.D. within
five to six calendar years of entering graduate school (four to five calendar years for M.D./Ph.D. students). All requirements for the Ph.D. must be completed within five calendar years after passing the oral preliminary examination (no more than eight years from matriculation).

- Students who are unable to complete the degree within the time limits described above may petition the program and collegiate unit for one extension of up to 24 months. Students must obtain the approval of their advisor/s and program DGS and submit the petition for an extension at least six months prior to the end of the time limit.
  - If a petition is approved, the student is notified in writing of the expectations for progress and of the month/year of degree conferral.
  - If the petition is denied, the student is notified in writing that he or she will be terminated from doctoral candidacy and from the graduate program upon expiration of the time limit.
- Under extraordinary circumstances, students may file a second petition for an additional 24 month extension after the first 24 months have expired; however such petitions after the initial extension must be reviewed and approved by the advisor/s, program DGS, and Vice Provost and Dean of Graduate Education.
  - Students who have been terminated under such circumstances may apply for readmission to the program; however, readmission is not guaranteed.

EMPLOYMENT TERMS AND CONDITIONS

Policy and Guideline information pertaining to graduate assistantship employment is available online or by contacting the Graduate Assistants Employment Office at 624-7070 or gaoinfo@umn.edu. Students are responsible for knowing the policies and guidelines pertaining to appointment as a graduate assistant.

In addition to the terms and conditions outlined in a student’s appointment letter, graduate assistantships are contingent upon admission to the Graduate School, current registration as a graduate student and satisfactory progress towards the Ph.D. Students holding graduate assistantships during fall or spring semester are required to be registered for credit (minimum of 6 credits). Audit registration only is not acceptable. Registration must be completed by the end of the second week of classes and maintained for the entire semester or the graduate assistantship will be terminated. Withdrawal from all credits will result in termination of a student’s graduate assistantship.

Success in the MICaB graduate program requires a high level of dedication and commitment. MICaB graduate students are expected to devote their full effort to graduate work (research, study, teaching) to maintain timely progress in the program. Therefore, seeking or holding other employment either inside or outside the University is strongly discouraged. Students should consult with their advisor if outside employment is being contemplated.

Stipend Supplement
MICaB advisors MAY supplement a MICaB student’s salary up to a maximum of 10% above the current stipend level if the student competes for and receives a peer-reviewed external fellowship for their graduate research (NOT including training grant appointments). This increase would last for the duration of the fellowship only. Documentation of the award (i.e., notice of grant award) must be submitted to the MICaB office if the student’s advisor wishes to provide a supplement.

Tuition Benefits
Graduate assistants who hold at least a 25% time appointment (195 hours per semester) receive tuition benefits (tuition waivers) equal to twice the percentage of their appointment for the semester in which they hold the appointment. For example, those holding an appointment...
of 50% or more will receive a 100% tuition benefit. A 50% appointment is typical for a MiCaB student. These benefits waive tuition but do not cover the student services fee or course fees.

**Resident Tuition Rate Reduction**

Graduate assistants who hold at least a 25% time appointment and meet the registration requirements are eligible to receive a non-resident waiver during that semester. Eligibility for the resident tuition rate reduction also applies to immediate family members (spouse/registered same-sex domestic partner, children, or legal ward living in the household) upon documentation. Acceptable documentation includes a marriage license (in English or an English translation), a birth certificate, same-sex domestic partnership documentation, or a visa.

Former graduate assistants who have completed two semesters of a graduate assistantship (at least 25% time) and their immediate family members (spouse/registered same-sex domestic partner, children, or legal ward living in the household) may be eligible to receive resident tuition rate reductions for up to four semesters, based on the number of qualifying GA appointments. The resident tuition rate reduction must be used within three years of the date of the last qualifying semester.

**Withdrawal from the MiCaB Program**

Students who decide to withdraw from the MiCaB program should give written notice to the DGS as soon as the decision has been reached. The notice should indicate the effective date of withdrawal. The CGS has final authority in determining the effective date of termination. A student may be liable for substantial tuition and fees in the case of a mid-semester termination. In instances where a student has effectively withdrawn from the MiCaB program with or without notice, support will be terminated retroactive to the apparent date the student ceased to participate in the program.

**Informal Sick Leave**

Graduate assistants are entitled to paid informal sick leave, not to exceed two weeks consecutive pay, for absences caused by illness or injury to the student, a dependent child, or the dependent child of a registered same-sex domestic partner.

**Vacation**

University regulations specify that there is no official vacation for Graduate Assistants. However, the MiCaB program recommends that all graduate students receive 10 paid days of leave per year (the equivalent of two weeks of paid vacation per year). These vacation days may not be accumulated from year to year. Students should consult with their advisor before scheduling vacation time. Any additional vacation time must be negotiated with the student’s advisor.

**Leave of absence**

Graduate students are permitted to take a leave of absence. A leave of absence allows students to return to the University under the same rules and policies that were in place when they left, and without affecting their time to degree.

Students who receive financial aid from the University should talk with their graduate program and/or department, Graduate Assistant Employment, Student Financial Aid, International Student and Scholar Services, Graduate School Fellowship Office, and/or a One Stop counselor to learn about any effects a leave of absence might have on loan repayment. Students who receive funding from a source outside of the University should talk with that agency to learn about any effects a leave of absence might have.
During the period of an approved leave of absence, students may not use student amenities and services, laboratories, equipment, and other research facilities, nor may they use the services of faculty or administrative staff, except as needed to return to active status. For more information, please refer to the complete policy.

**Parental Leave**
The MICaB program abides by the University of Minnesota Regents Policy on Parental Leave for Academic Employees

**Training grant appointments**
Students appointed to training grants are not considered University of Minnesota employees. Training grant directors provide specific details regarding tuition payments and health insurance.

**HEALTH INSURANCE**

Students taking at least 6 credits (or 1 FTE) are required to carry hospitalization insurance. Graduate students can obtain health and dental care benefits by purchasing the University-sponsored Health Benefit Plan, or, if employed as graduate assistants with at least a 25% appointment, by enrolling in the Graduate Assistant Health Insurance Plan.

Graduate assistants eligible for coverage must enroll in the Graduate Assistant Health Insurance Plan to obtain coverage. Coverage in the Graduate Assistant Health Insurance Plan continues as long as a student’s graduate assistantship remains at 25% or more. Students with coverage in spring semester will be covered through the summer even if the student is not working as a graduate assistant. Health care coverage will end if a student leaves their graduate assistant appointment before the end of the term. Students have the option of purchasing continuing coverage at their own expense.

Students with a 50% appointment will receive a 95% subsidy of premium for their own coverage. Students will be billed their portion of the insurance premium costs once each term. The Graduate Assistant Health Insurance Plan also includes an office visit co-pay for enrollees. The University contributes part of the cost of dependent coverage.

**Boynton Health Service Dental Clinic**
This clinic provides dental care for students on the Graduate Assistant Health Plan. Please identify yourself as a Graduate Assistant Health Benefit Plan member and have your student ID number ready when making appointments for yourself or your dependents to assure that you receive appropriate discounts on services. To facilitate your dental treatment, you may be referred to another clinic within the School of Dentistry in Moos Tower (515 Delaware Street) for the few specialty services not provided at Boynton’s Dental Clinic.

**Boynton Health Service**
Most services at Boynton Health Service are provided at the East Bank Clinic at 410 Church St. SE (612-625-8400). Students may also see a physician at the St. Paul clinic in 109 Coffey Hall (612-624-7700). Both clinics are open Monday-Friday and closed weekends and holidays. The St. Paul clinic is closed during term breaks and summer sessions.

The Student Services Fee does not cover urgent Care visits outside of Boynton Health Service. Information about after hours care is available at http://www.bhs.umn.edu/after-hours-care.htm.
Students who register for at least 6 credits each semester are automatically charged the student services fee. Students who pay the fee and have health insurance receive most health care services at Boynton Health Service at no additional cost. For a full list of services covered under the student services fee, see [http://www.bhs.umn.edu/health-care-coverage.htm](http://www.bhs.umn.edu/health-care-coverage.htm).

**INTERNATIONAL STUDENTS**

*International Student and Scholar Services (ISSS)*

190 Hubert H. Humphrey Center  
301 19th Ave. South  
Minneapolis, MN 55455  
TELL: 612-626-7100  
FAX: 612-626-7361  
Email: [isss@umn.edu](mailto:isss@umn.edu)

The International Student and Scholar Services (ISSS) office assists international students and scholars at the University of Minnesota. The ISSS office provides critical information to international students regarding life at the University of Minnesota and the U.S.A. Links to relevant handbooks are available online.

**Social Security Number** All international students must acquire a social security number (SSN) in order to receive the MICaB stipend.  
[F-1 visa information](#)  
[J1 visa information](#)  

**Identification/driver’s license**  
Foreign identification cards are usually not accepted as official identification in the U.S.A. Although passports are accepted, it is recommended that international students obtain alternative identification cards for use in the U.S.A. The two options are either a Minnesota state identification card or a Minnesota driver’s license. More details are available on pp18-19 in the *Arrival Guide for New International Students* available on the ISSS website.

**Taxes**  
International students must file yearly federal and state tax forms. ISSS sponsors tax-return workshops that address specific tax rules that affect international students.

**Visas**  
International students may need to renew a visa while completing their Ph.D. in the MICaB program. Students will need to visit an American embassy or consulate outside of the U.S.A., preferably the embassy or consulate in their home country. Students should considering the following when renewing a visa:

- Meet with ISSS staff to review what is required for visa renewal.
- Schedule an interview with the American embassy or consulate well in advance of the visa renewal deadline. Interviews can be scheduled online or by phone.
- Make sure that all documents (I-20, proof-of-citizenship, financial aid, etc.) are correct and current.
- Fill out the required forms for visa renewal and review the forms with ISSS staff.
- Obtain a letter from the student’s advisor or the MICaB DGS indicating the status of the student and the expected duration of study in the program.

Additional information is available from the [U.S. Department of State](http://www.state.gov).
Travel outside of the U.S.A.
Before traveling abroad, international students should check the ISSS website for any new travel restrictions and immigration laws. Students should make sure that their passport and visas are current, and that the I-20 form has a valid signature.

AWARDS

Golden Pipetman Award
The Golden Pipetman Award is given to an outstanding MICaB student who has contributed to the excellence of the MICaB program. The contribution can be in the form of publications, outside funding, and/or service to the program. Either MICaB students or faculty may nominate current MICaB students for the Golden Pipetman Award. Recipients are selected by the CGS and past recipients of the Golden Pipetman Award who are still in the program at the time of selection.

Bacaner Research Award
The Bacaner Research Award program is sponsored by the Minnesota Medical Foundation to encourage intellectual achievement by graduate students and is underwritten by a gift to the Foundation in memory of Jack and Minnie Bacaner. The award is $1,500 annually.

MICaB Travel Award
The MICaB Travel Award provides funds for MICaB students to attend national and international research conferences and meetings. These competitive travel awards are given annually to MICaB students on the basis of merit, need, or both.

Best Dissertation Award
Each year the University of Minnesota Graduate School recognizes the University's top recent Ph.D. graduates by presenting 'best dissertation' awards in four broad disciplinary areas. The recipients receive an honorarium of $1,000 and a special certificate.

J. Jacob Kaplan Award
The J. Jacob Kaplan award is presented annually for the most meritorious student papers on either clinical or basic medical research and includes a cash prize of $4,000. It is given on a rotating basis for research in three fields of medicine: immunology in diagnosis and treatment of cancer, gastroenterology and cardiology.

Roza Steer Breast Cancer Research Award
This $1,000 award is presented for outstanding research by a graduate or medical student in the field of breast cancer. An ad hoc faculty committee chooses the recipient.

Venezia Steer Award
This $1,000 award is presented annually for outstanding research by a graduate or medical student in the field of cellular growth regulation. An ad hoc faculty committee chooses the recipient.

FELLOWSHIPS

Dennis W. Watson Fellowship
The Watson Fellowship is an annual competitive award for microbiology track students beginning their fourth year of study in the MICaB program and have as their faculty advisor a
member of the microbiology faculty or MICaB microbiology track faculty. The student receives a one-year non-renewable fellowship in addition to a $500 cash award.

**Doctoral Dissertation Fellowship**
The purpose of the Doctoral Dissertation Fellowship (DDF) program is to give outstanding final-year Ph.D. candidates who are making timely progress toward the degree—typically those entering their fifth year of graduate study—an opportunity to complete the dissertation within the upcoming academic year by devoting full-time effort to the research and writing of the dissertation. Candidates must be nominated by the DGS to an all-University competition. Instructions to nominees and application forms are available from the DGS in late fall.

**Louise T. Dosdall Fellowship**
This fellowship is open to women doctoral students in the natural or physical sciences and engineering where women are underrepresented (i.e., less than 50%) in the graduate program.

**Thomas H. Shevlin Fellowship**
This fellowship is for doctoral students in the biological and agricultural sciences, basic physical and medical sciences, and liberal arts. The MICaB program nominates one student.

**DOVE Fellowship**
The Diversity of Views & Experiences (DOVE) Fellowship is awarded to approximately 10 to 15 incoming students from underrepresented groups within a specific graduate program (U.S. citizens or permanent residents). Candidates in the MICaB program are selected by the MICaB CGS and nominated by the MICaB DGS.

**3M Science and Technology Fellowship**
The purpose of this fellowship program is to promote graduate student excellence at the University, by providing four-year 3M Science and Technology Fellowships to outstanding new Ph.D. students per year in broad areas of science and technology. The MICaB CGS selects a recipient of the MICaB 3M Fellowship from the pool of incoming students in the years the MICaB program is eligible to submit an application.

**MICaB KICKOFF**
The MICaB Kickoff is a yearly luncheon event held before the start of the fall semester in which MICaB faculty and graduate students come together to welcome the new graduate students and new faculty members. Immediately following the Kickoff lunch is a Poster Session where MICaB graduate students (second year and up) display the research projects they are working on in the laboratory.

**OTHER USEFUL INFORMATION**

**Graduate School**
The University of Minnesota Graduate School policies governing graduate education are available online. Graduate students are responsible for the information contained in this site.

**Council of Graduate Students (COGS)**
COGS is the official body representing graduate students at the University and is recognized by the Graduate School constitution. COGS promotes the academic, social, and economic goals of graduate students by initiating policies beneficial to them, by working with other campus organizations and with graduate student associations at other universities, and by informing
graduate students of proposed and enacted changes in policies that affect them at the Graduate School, University, local, state, and national levels.

**Community of Scholars Program**
The Community of Scholars Program (COSP) works towards creating the institutional environment required for the academic achievement of graduate students. The Program assists under-represented students (U.S. Citizens and permanent residents) to more fully participate in the University, develop supportive relationships with advisors and mentors; build a sense of community through academic seminars and professional development workshops; and connect students to the Twin Cities community through research and civic engagement opportunities.

**Housing**
Information about on-campus and off-campus housing is available from Housing and Residential Life. Additional online resources are available at:
- Commonwealth Terrace Cooperative
- Como Student Community Cooperative
- Off-Campus Housing

**Parking and Transportation Services**

**Child Care**

**Legal Services:**
The University Student Legal Service provides legal counsel and services to fee-paying students for little or no cost. Advice is offered on consumer matters, tenants' rights, immigration, family law, misdemeanor and DWI defense, and employment problems. For more complex legal problems, students are referred to other attorneys.

**Mental Health Resources**
Graduate school can be stressful at times. The University provides various mental health services for students.

- The Mental Health Clinic at Boynton Health Services provides phone and walk-in assessment on an urgent basis, as well as scheduled medical evaluations and management, chemical health assessment and counseling, and individual, couples, and group therapy. Additional resources for the management of personal stress are available through the Health Promotion Department at Boynton Health Service.

- University Counseling and Consulting Services provides confidential counseling programs with professional counselors who can help students address academic stresses, personal and relationship concerns, or feelings of anxiety or depression. Walk in counseling is available.

- Disability Services provides assistance with academic accommodations for students with diagnosed, severe, and persistent mental health conditions.

**Email aliases.** The following email aliases may be used by MICaB students and faculty for University-related matters only.

All MICaB students: micabstudents-l@lists.umn.edu
All MICaB faculty: micabfac-l@lists.umn.edu
Microbiology track faculty: micabmicrofac-l@lists.umn.edu
Immunology track faculty: micabimmfac-l@lists.umn.edu
Cancer biology track faculty: micabcancfac-l@lists.umn.edu
Committee on Graduate Studies: micabcgs-l@lists.umn.edu

MICaB PROGRAM TIMETABLE FOR Ph.D. STUDENTS

Summary
The MICaB Program requires Ph.D. students to attend seminars and ethics training, and to be teaching assistants. Ph.D. students are required to complete 48 total credits: 24 course credits and 24 thesis credits (MICa 8888). (see p10 for the rationale). All graduate school forms for doctoral students are available online.

Year One
- Register for a total of 14 course and thesis credits each semester
- Complete three 10-week rotations
- Choose advisor by end of third rotation
- Begin thesis research

Fall Semester
- Register for 14 course and thesis credits total
  - Course credits
    - RC4100 Responsible Conduct of Research RCR Core-Biomedical Sciences AND
    - MICA 8094 (1 cr) AND
    - MICA 8002 and/or MICA 8003 (4 cr) plus one supporting course OR
    - two supporting courses (if MICA 8002 or 8003 are not taken)
  - Thesis credits (MICA 8888)
    - The number of MICA 8888 credits for which to register equals 14 less the number of course credits taken.

Spring Semester
- Register for 14 course and thesis credits total
  - Course credits
    - MICA 8094 (1 cr) AND
    - 8004 (4 cr) OR
    - MICA 8004 plus a supporting (elective) course OR
    - Two supporting (elective) courses (if 8004 is not taken)
  - Thesis credits (MICA 8888)
    - The number of MICA 8888 credits for which to register equals 14 less number of course credits taken.
- Attend the MICaB Ethics Workshop

Year Two
- Continue thesis research
- Register for a total of 14 course and thesis credits each semester
- Be a Teaching Assistant (MICA 5000): fall or spring semester

Fall Semester
- Register for 14 course and thesis credits total
  - Course credits
    - MICA 8012 (2 cr) AND
    - Supporting credits
- Thesis credits
Register for MICA 8888. The number of MICA 8888 credits for which to register equals 14 less number of course credits.

Spring Semester
• Register for MICA 8888 and finish course credits (24 total required)
• Present in MICaB Student Seminar Series (MICA 8920)
• Identify preliminary exam committee members (by Feb. 1).
  ‣ Email names of committee members to the MICaB Program Coordinator.
  ‣ Once the final list is approved by the MICaB CGS, submit the members’ names and roles on the committee to the Graduate School
• Complete Graduate Degree Plan by March 1.
• Submit written proposition (no later than April 1 by 4:00 pm) via email to the MICaB Program Coordinator
• Results of the written proposition will be submitted to GSSP by the MICaB program coordinator.
• Schedule the preliminary oral examination with the Graduate School online as soon as a date is set, but no later than one week prior to the examination.
• Take oral preliminary examination prior to the start of fall semester of the third year.

PRELIMINARY ORAL EXAMINATION MUST BE SCHEDULED AND COMPLETED BEFORE THE START OF FALL SEMESTER OF YEAR THREE

Year Three
• Continue thesis research
• Meet with thesis committee at least once
• Teaching (MICA 5000): fall or spring semester

Fall Semester
• If 24 thesis credits (MICA 8888) are completed, register for MICA 8444, 1 FTE ONLY

Spring Semester
• Assign online Final Oral Examining Committee
• Register for MICA 8444 1 FTE and complete one-credit registration request

Year Four
• Continue thesis research
• Meet with thesis committee at least once

Fall Semester
• Register for MICA 8444 (1 FTE) and complete one-credit registration request
• Present seminar in MICaB Student Seminar Series (MICA 8920)

Spring Semester
• Register for MICA 8444 (1 FTE) and complete one-credit registration request
  • Request Graduate Packet online from Graduate School. After the system has verified eligibility milestones, you will be prompted to download the materials.

Year Five
• Continue thesis research
• Meet with thesis research committee approximately 9 months before anticipated defense date to ensure you, your advisor and your committee are in agreement as to what needs to be done to satisfy your thesis research requirements.

• Register for MICA 8444 (1 FTE)

• Review Graduate School Instructions for Doctoral Candidates

• Review Graduate School Preparation of the Dissertation requirements for thesis preparation

• Schedule the Final Oral Examination with the Graduate School online as soon as a date is set, but no later than one week prior to the examination.

• To participate in graduation ceremony, complete the Commencement Attendance Approval Form at least two months before the commencement. The form is in the Graduation Packet.

• Submit one bound copy of final thesis to MICaB Program Coordinator.

All requirements must be completed by five years from the end of the fall or spring term following the term in which the student passes the oral preliminary examination.

MICaB COURSE REQUIREMENTS FOR M.D./PH.D. STUDENTS

M.D./Ph.D students in the MICaB program are required to take the following:

**One core course:**

- **MICA 8002** Structure, Funct/Bacteria & Viruses (Year 1) 4 F
- **OR**
- **MICA 8003** Immunity and Immunopathobiology (Year 1) 4 F
- **OR**
- **MICA 8004** The Biology of Cancer (Year 1) 4 S

**plus:**

- **MICA 8012** Integrated Topics in MICaB (Yr 1) 2 F

**plus:**

**One Focus Area science course (5000-level or higher, minimum 3 credits)** in Year 1. The course can be any university graduate-level science course related to the student’s area of interest. *Students may apply a second core MICaB course (MICA 8002, 8003, 8004) towards their focus area requirement.*

MD/PhD students in the immunology track are expected to take the MICa 8011 course. This course would satisfy the focus area science course requirement.

**Ethics Training:** In the fall semester of their first year, students must complete RC4100 Responsible Conduct of Research RCR Core-Biomedical Sciences. This workshop is online and takes approximately 6 hours. In spring semester, first-year students are also required to attend a MICaB-sponsored ethics workshop.

M.D./Ph.D. students may apply medical school course credits towards the minimal 24 course credit requirement.

**Written Proposition and Oral Preliminary Examination** For M.D./Ph.D. students, the written proposition must be submitted to the CGS no later than April 1 of the student’s first year in the Ph.D. phase of their training.
All graduate school forms for doctoral students are available online.

Year One

Fall Semester
- Register for: MICA 8888, MICA 8012
- Register for MICA 8002 or MICA 8003 (if both MICA 8003 and MICA 8004 will not be taken, or if your advisor recommends you take MICA 8002 in addition to MICA 8003 and/or 8004).
- **RC4100 Responsible Conduct of Research RCR Core-Biomedical Sciences**
- Attend MICaB Faculty and Student Seminars

Spring Semester
- Register for: MICA 8888
- Register for MICA 8004 (if MICA 8002 or MICA 8003 is not taken or in addition to MICA 8002 if recommended by your advisor)
- Present in MICaB Student Seminar Series (MICA 8920)
- MICaB Ethics Workshop
- Attend MICaB Faculty and Student Seminars
- Identify **preliminary exam committee members** (by Feb. 1).
  ‣ Email names of committee members to the MICaB Program Coordinator.
  ‣ Once the final list is approved by the MICaB CGS, submit the members’ names and roles on the committee to the Graduate School
- Complete **Graduate Degree Plan** by March 1.
- Submit written proposition (no later than April 1 by 4:00 pm) via email to the MICaB Program Coordinator
- Results of the written proposition will be submitted to GSSP by the MICaB program coordinator
- Schedule the **preliminary oral examination** with the Graduate School online as soon as a date is set, but no later than one week prior to the examination.
- Take oral preliminary examination prior to the start of fall semester of the second year.

**PRELIMINARY ORAL EXAMINATION MUST BE SCHEDULED AND COMPLETED BEFORE THE START OF FALL SEMESTER OF YEAR TWO IN THE PH.D. PHASE OF TRAINING**

Year Two
- Continue thesis research
- Meet with thesis committee at least once

Fall Semester
- Register for MICA 8888
- Attend MICaB Faculty and Student Seminars

Spring Semester
- Register for MICA 8888
- **Assign Final Oral Examining Committee** online
- Attend MICaB Faculty and Student Seminars

Year Three
- Continue thesis research
- Meet with thesis committee at least once
Fall Semester
- Register for MICA 8444 (1 FTE) and complete one-credit registration request
- Present seminar in MICaB Student Seminar Series (MICA 8920)

Spring Semester
- Register for MICA 8444 (1 FTE) and complete one-credit registration request
- Request Graduate Packet from Graduate School

Year Four
- Thesis research
- Meet with thesis research committee approximately 9 months before anticipated defense date to ensure you, your advisor and your committee are in agreement as to what needs to be done to satisfy your thesis research requirements.
- Register for MICA 8444 (1 FTE) each semester
- Request Graduate Packet from Graduate School. After the system has verified eligibility milestones, you will be prompted to download the materials.
- Schedule the Final Oral Examination with the Graduate School online as soon as a date is set, but no later than one week prior to the examination.
- To participate in graduation ceremony, complete the Commencement Attendance Approval Form at least two months before the commencement. The form is in the Graduation Packet.
- Submit one bound copy of final thesis to MICaB Program Coordinator.

All requirements must be completed by five years from the end of the fall or spring term following the term in which the student passes the oral preliminary examination.
MICaB Committee on Graduate Studies

- Wade Bresnahan, Ph.D. (Chair)
- Martina Bazzaro, Ph.D.
- Brian Fife, Ph.D.
- Tom Griffith, Ph.D.
- Ryan Hunter, Ph.D.
- Kirsten Nielsen, Ph.D.
- Erik Peterson, M.D.
- Tim Starr, Ph.D.
- Vaiva Vezys, Ph.D.

Sarah Lucas (Student representative)
Dylan White (Student representative)

Email: micabcgsl@lists.umn.edu

MICaB Faculty Admission Committee

- Scott Dehm, Ph.D., Chair
- Sandy Armstrong, Ph.D.
- Kristin Hogquist, Ph.D.
- David Potter, M.D., Ph.D.
- Anna Tischler, Ph.D.
- Bruce Walcheck, Ph.D.

Upasana Arvindam
Thera Lee
Dylan White

MICaB Travel Awards Committee

- Kim Mansky, Ph.D. (Chair)
- Brian Fife, Ph.D.
- Kirsten Nielsen, Ph.D.

MICaB Career Development Committee

- Kaylee Schwertfeger, Ph.D (Chair)
- Tim Starr, Ph.D.

Tijana Martinov
Ashley Mooneyham
Sarah Namugenyi
Josh Thiede
Dylan White

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