

Graduate Student Handbook

2018–2019



Plant and Microbial Biology Graduate Program
University of Minnesota • Twin Cities

<https://cbs.umn.edu/academics/departments/pmb/graduate-education>

Plant and Microbial Biology Graduate Program

GRADUATE STUDENT HANDBOOK

This handbook is meant to provide students with a primary resource of the requirements, expectations, and opportunities of the PMB Graduate Program. Use it as a reference as you progress through the program. To stay informed of expectations and opportunities, you also should read all emails you receive from the Director of Graduate Studies, the Program Coordinator, and the Graduate School.

Table of contents

Suggestions for success	1
Key people and program resources	2
Calendars and notifications	2
Academic process: Doctor of Philosophy	3
Credit and course requirements.....	4
Research experience.....	6
Professional development	7
Teaching experience	7
Registration	8
Advisor and advisory committee	11
Advisory committee meetings/evaluations	13
Preliminary written examination.....	15
Preliminary oral examination	17
Dissertation	19
Degree completion	20
Final oral examination.....	21
Academic process: Master of Science	22
Academic standards	25
Duration and time limits.....	26
Forms and signatures	27
Funding.....	28
Professional development.....	31
Summary: Key steps and milestones	32
Student and program activities	33
Key resources.....	34
Student rights and responsibilities	37
Respectful and responsible conduct in the PMB Graduate Program	40
Best advising practices	42

Revised July 2018 by Peter Tiffin and Sara Eliason.

Plant and Microbial Biology Graduate Program

The Plant and Microbial Biology (PMB) Graduate Program strives to provide outstanding interdisciplinary education for careers in academia, industry, government, and public service. The program is committed to diversity in both scientific pursuits and in the community of people conducting that science.

The graduate program works to recruit students from diverse backgrounds and to provide those students with:

- excellent interdisciplinary educational, research, and professional development experiences;
- possibilities to work on a broad range of cutting-edge research topics in plant, fungal, and microbial biology;
- opportunities to conduct independent research and develop as innovative educators; and
- opportunities to participate in the international plant science research community through seminars, colloquia, and conferences.

The PMB program expects students to develop the conceptual understanding, analytical skills, and technical knowledge that allow those students to make important contributions to our understanding of biology and that lay the foundation for professional success.

Suggestions for success

- You are here to learn. Take advantage of the many opportunities that the program and University provide for your intellectual and professional development.
- Take responsibility for your degree.
- Develop a strong professional relationship with your major professor.
- Develop strong professional relationships with other professors, post-docs, and with your fellow graduate students.
- Use your office or your desk space in your lab. This creates opportunities for departmental interactions. Science is not a solitary pursuit; students who work from home seldom succeed.
- Become a member of a professional society, attend their annual meetings and give talks or posters based on your research. This will help you develop a professional network.
- Keep up with the literature in your field(s)—through readings, journal clubs, and seminars. Science changes rapidly, and you need to be at the forefront of knowledge.
- Make your degree program your top priority.
- Make it a goal to become a leader in your field.
- Publish regularly. Make a plan with your major advisor and keep communication open.
- Write proposals and get feedback. Take advantage of fellowship and grant opportunities.
- Plan ahead. It is your responsibility to know the deadlines for key steps in your degree program and give yourself enough time to complete things well in advance of those dates.
- Respect professors' and staff members' time. Professors and staff are here to work with and assist you, but remember they have other commitments. Whenever possible, give them enough lead time to help you with questions or issues.

Key people and program resources

ACADEMIC PROCESS, RESOURCES, SUPPORT, FUNDING, ETC.

Dr. Bob Stupar
Director of Graduate Studies (DGS)
stup0004@umn.edu | 612.625.5769

Dr. Peter Kennedy
Associate Director of Graduate Studies (ADGS)
kennedyp@umn.edu | 612.624.8519

Sara Eliason
Graduate Program Coordinator (GPC)
140 Gortner
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PHYTOGRADS – PMB GRADUATE STUDENT ORGANIZATION

Jaclyn Noshay
Ph.D. student and Phytograds president
nosha003@umn.edu

HUMAN RESOURCES OFFICE—IN SNYDER HALL

Kelsey Cook
Graduate assistant appointments
cookx632@umn.edu

OFFICES, KEYS, AND MAIL

- > Office / bench space is generally provided by your advisor. For students who have not yet identified an advisor, the program will identify office space.
- > To obtain access to the building, office, and lab you should talk with your advisor or the GPC.
- > Your mailbox location depends on the building in which your office is located, ask your advisor.

COMPUTERS AND PRINTING

- > Computer and general IT help: contact help@umn.edu and check <https://it.umn.edu/>.
- > You may be eligible for a graduate assistant computer subsidy. For details, check: <https://cbs.umn.edu/info/internal-resources/faculty-staff/rlt/computer-subsidy>.
- > Poster printing is available through the University Imaging Center: <http://uic.umn.edu/>.
- > General printing: Check with your advisor and the building where your office is...

Calendars and notifications

- The **general academic calendar with dates of registration, add/drop deadlines, finals, and holidays** for each semester is posted online at <https://onestop.umn.edu/dates-and-deadlines>.
- The **graduate student planning** timeline and information is posted online at <https://onestop.umn.edu/academics/graduate-student-services-and-progress-gssp>.

Academic process: Doctor of Philosophy

It generally takes five years of full-time work to earn a Ph.D. A general timeline of how students spend each of the five years in the program:

- **First year:** Explore interests, develop knowledge, take courses, conduct preliminary research, and identify potential research projects that will form the basis of the dissertation.
- **Second year:** Complete courses, write research proposal, gain expertise in the research area, complete written preliminary exam, get started with dissertation research.
- **Third year:** Complete oral exam (by beginning of your fifth semester), devote an increased amount of time to collecting, data, analyzing data, interpreting results, and writing dissertation.
- **Fourth year:** Devote time to dissertation research and writing (and submitting) manuscripts, start thinking seriously about career paths following graduate school.
- **Fifth year:** Complete dissertation, make concrete plans for career path following graduation, graduate.

All students must fulfill certain educational requirements:

- core courses
- supporting courses
- thesis credits
- research experience
- professional development
- teaching experience

The sections in this handbook elaborate on these expectations, describe program and university requirements and deadlines, and provide information on resources to help you complete your degree. Most students are financially supported by a combination of fellowships, research assistantships, and teaching assistantships. These, too, are discussed in this handbook.

CREDIT AND COURSE REQUIREMENTS

Students come into the program with diverse interests, backgrounds, and career goals. As such, you are able to tailor your course plan with the help of your major advisor and advisory committee. However, as a student earning a graduate degree in PMB, you are encouraged to advance your knowledge and gain competency in the broad spectrum of disciplines covered in the program. Course work is one way to gain this competency.

Credit requirements

- 54 credit hours total required
 - > 30 course credits
 - 9.5 credits of required courses
 - 20.5 credits of supporting courses, minimum
 - > 24 thesis credits
- Grades of S, C or higher are required on all coursework.
- At least 20 credits must be from courses graded A-F.
- Two 4000-level courses are allowed. (For permission to take more than two 4000-level courses, confer with your advisor, committee, and the DGS.)

DEGREE PLAN

You will work with your advisor and committee members to develop a plan for the course work and thesis credits you will take. Once you have decided which courses you will take, you must submit the online graduate student degree planner (“GPAS planner”). Access the planner through the “Academics” tab on MyU.

Your degree planner is an official document and can be viewed as a contract of courses that you have committed to take in order to obtain your degree. At the time of submission, a copy of the plan will also be sent to the GPC and the DGS.

Please note: Do not submit the paper-based degree plan form. PMB no longer uses this form.

NOTE: The PMB program recognizes that course availability and student needs change, so your course plan may change accordingly. When this happens, you do not need to submit a new GPAS planner, but you should get approval from your advisor and advisory committee before deviating from your original course plan.

DEADLINE: As a graduate student in Plant and Microbial Biology, you must submit your GPAS planner by the end of your third semester.

COURSES

Core courses (9.5 credits)

PMB 8081. Integrative Plant Biology: Connecting Molecules to Ecosystems (3 credits)

Take this course in fall semester of your first year. The primary goals of this course are to learn to examine biological questions from multiple perspectives, explore the integration of diverse approaches to answer questions, and learn to critically evaluate primary literature.

PMB 8123. Research Ethics in the Plant and Environmental Sciences (0.5 credit)

Take this course in spring semester of your first year. This course is typically offered either prior to the start of spring semester as a half-day workshop over two days in January or as a one-hour per week course for the first half of spring semester.

PMB 8900, section 001. PMB Colloquium (1 credit)

You must register for PMB 8900 section 001, the PMB seminar series, once, typically during your first semester. In all subsequent semesters, you should attend the PMB seminars. The opportunity to hear and meet invited speakers is an important component of the graduate student experience. Seminars are on Tuesdays from 3:30 p.m. – 4:30 p.m.

PMB 8900, section 002. Itasca Orientation. (1 credit)

Incoming students register for and attend the Itasca Orientation in August, prior to the fall semester. The orientation is designed to foster interactions among students and faculty, introduce students to current research in the program, and provide guidance for a successful first year and graduate career.

PMB 8900, section 003. PMB Graduate Student Seminar. (1 credit)

Take this course in fall semester of your first year. The goal of this seminar is to foster interaction among PMB students and highlight the breadth of research in plant biology. Fifth semester students participate (but do not register) and present a seminar on their thesis proposal.

PMB 8901. Preparation of Research Proposals. (2 credits)

Take this course in the fall of your second year. The course prepares students for the preliminary written exam by providing instruction and feedback for writing an original research proposal. In this course, you will draft a research proposal, which you can then use as the basis for your preliminary written exam during spring of your second year.

PMB 8994. Directed Research. (1 credit)

Take this course in fall semester of your first year. Depending on your overall course load, you may register for from 1 to 5 credits. The work for this course is conducted as part of your rotations, or if you've already identified an advisor, under your advisors' guidance.

Supporting courses (20.5 credits)

You must take at least 20.5 credits of supporting courses. There is a broad spectrum of courses that may be used to fulfill these 20.5 credits, including all 5000- or 8000-level courses offered with the AGRO, BIOC, BIOL, EEB, FNRM, GCD, GRAD, HORT, PLPA, PMB, and STAT prefixes. Courses with the CSCI and ENT prefix and some 4000-level courses in various programs may also be relevant. Other courses may be included with the approval of the advisor and DGS. A partial list of supporting courses is available on the PMB Graduate Program website.

NOTE: Transfer courses are allowed only if the courses were not applied toward completion of another degree. Credits taken as a master's student and applied toward completion of a master's degree may not be applied towards a PMB doctoral degree.

Thesis credits

PMB 8888. Thesis Credits: Doctoral. (24 credits)

Register for thesis credits in any semester. You must take at least 24 thesis credits.

PMB 8444. FTE: Doctoral

Register for one credit of FTE: Doctoral in each semester after you have completed all other courses and thesis credits and passed your written and oral preliminary exams.

RESEARCH EXPERIENCE

Research experiences provide opportunities for you to identify a thesis project, an advisor, and committee members, as well as to develop research skills and gain exposure to a variety of research topics and techniques that will help you in advancing your research and academic goals.

During your first semester in the PMB Ph.D. program, you must complete research rotations or another substantive activity that provides connections beyond your home lab. Both rotations and other activities for making connections outside of your advisor's lab must be approved by the DGS.

The process:

- Register for one credit of PMB 8994 Directed Research under the A-F grading option.
- Get a permission number from the graduate program coordinator before registering.
- The DGS is listed as the official instructor, but you will work with the lab(s) that fit your interests.
- By the fifth day of the semester, complete the PMB 8994 Directed Research plan form and submit to the GPC.
- By the last day of regular classes for fall semester, the DGS will consult with the faculty member(s) who are your mentor(s) for the semester in order to determine your grade.

Rotations

If you opt for rotations, plan to spend time in two labs. Along with your rotation mentors, you will define the nature and scope of the rotation activity at the outset. Rotation activities can be quite variable, some rotations focus on reading the scientific literature or learning techniques, while others aim to accomplish particular experiments or analyses. Regardless of the nature of the rotation, you are expected to engage in regularly scheduled activities, to discuss progress and problems with your mentors, and to evaluate results of the rotation.

Other activities

If you opt for another substantive opportunity outside of your home lab, plan the activity and get approval from the DGS before commencing. This option is particularly geared for you if you enter the PMB program having already identified your advisor, or identify an advisor soon after joining the program, and decide that formal rotation is not a valuable use of your or faculty members' time. Because the per-week time commitment is likely less than that involved with a rotation, the expectation may be that this other activity spans your entire first year.

Ideas for other research skill activities include: • actively participate in one or more faculty members' lab/group meetings; • participate in a formal journal club; • attend other regular seminar series; • conduct a core literature review and produce a first-year paper; • take old/existing data from any of your prior work and finish it: analyze and present it/produce a paper for submission.

PROFESSIONAL DEVELOPMENT

Professional development is central to graduate success. You develop professionally through courses, research, and interaction with others at the University. However, it also is valuable to engage in activities that are specifically aimed at professional development, and the PMB program requires that you do so. There are several ways to fulfill this requirement: courses (e.g., GRAD 8101 Preparing Future Faculty, APSC 8124 Professional Skills for Plant Scientists, BIOL 8100 Improvisation for Scientists), workshops (e.g., career development, research group management, teaching skills, writing skills, leadership development), or internships in industry.

Reporting: *Professional development is an official milestone that the GPC will record on your student record and that must be met before you will be eligible for the final exam. Report all professional development activities on your advisory committee evaluation form (see page 14).*

TEACHING EXPERIENCE

As a doctoral student in the PMB graduate program, you are required to serve as a teaching assistant for at least one semester. This is a 50% effort, or 20 hours per week, appointment. If you have equivalent prior teaching experience, you may petition the DGS to modify or waive the teaching experience requirement.

All new teaching assistants should complete TA training before being eligible to serve as a TA:

- > New TA orientation through the Center for Educational Innovation
- > TA training through the College.

English language requirement for international student teaching assistants

All international students at the University of Minnesota must meet English language proficiency requirements, before serving as teaching assistants. Proficiency is assessed in one of three ways:

- Internet-based TOEFL speaking sub-score;
- Spoken English Test for Teaching Assistants (SETTA); or
- Final exam taken after coursework in the international TA program.

For details, see: <https://cei.umn.edu/courses-programs/international-teaching-assistant-program/testing-eligibility>.

REGISTRATION

- Register for classes using the registration shopping cart in MyU, under the Registration tab. You also can check course offerings through the Schedule Builder on the One Stop website, <https://schedulebuilder.umn.edu/>.
- Registration dates: check <https://onestop.umn.edu/academics/registration-times>.
 - For spring semester, registration typically starts in mid-November. For summer and fall semester, registration typically starts in mid-April.
 - View your specific registration time on the Registration tab in MyU: Academics.
- Registration runs up to midnight on the last night prior to the first day of class.
- The terms “credits,” “hours,” and “units” are used interchangeably.
- If you fail to register by the published registration deadline, you will be deactivated as a student. (See <https://onestop.umn.edu/dates-and-deadlines>.)
 - To be reactivated in the program, you must apply for readmission, using the “Express Readmission” form online at <https://www.grad.umn.edu/admissions/readmission>.
- If you register after the published registration deadline, you will incur a late fee. You, not the program, will be responsible for paying this late fee.
- Registration for summer is not allowed, unless approved and paid for by your advisor.

Minimum registration

- Students on an assistantship or fellowship must register full time each fall and spring semester. Full time means:
 - > Prior to reaching advanced status: 6 credits to 14 credits
 - You should register for 14 credits each semester until you have completed all required course and thesis (PMB 8888) credits. If you register for more than 14 credits there will be additional tuition charges that you will be responsible for.
 - > After reaching advanced status: 1 credit
 - This is also called “full-time equivalent (FTE)” or “one-credit” status.
 - You reach advanced status after completing all course and thesis credits and passing both your written and oral preliminary exams.
 - Register each semester for 1 credit of PMB 8444 FTE: Doctoral or PMB 8333 FTE: Master’s.
 - Once you reach advanced status, you must register for 1 credit of PMB 8444 FTE: Doctoral or PMB 8333 FTE: Master’s or you must register and pay for a minimum of 6 credits, to qualify as a full-time student. No other 1-credit courses may be substituted for PMB 8444 or PMB 8333.
- Continuous registration
 - All students must register for at least one credit every fall and spring semester until all requirements for the degree are fulfilled.
 - If you do not register in any fall or spring semester, you will be considered inactive.
 - Register by add/drop date or the following day you will be dropped for non-enrollment.
 - To register again in that semester, you may request express readmission.
 - To resume your degree program, you would be required to apply for readmission to the university and program.

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- Residency: You must take at least 12 course credits at the University of Minnesota to fulfill the residency requirement for the doctoral degree. For a master's degree, you must take at least 60% of your course credits at the U of MN.
 - Students with F-1 visas: Registration guidelines are on the International Student Services web site at <https://iss.umn.edu/fstudent/fullcourse.html>.
 - Students with J-1 visas: Registration guidelines are on the International Student Services web site at <https://iss.umn.edu/jstudent/JStFullCourse.html>.
 - Students with financial aid:
 - Most financial aid awards required that you enroll in a minimum number of credits. See <https://onestop.umn.edu/finances/minimum-graduate-credits-financial-aid>.

Maximum registration

- You may register for a maximum of:

– Prior to reaching advanced status:	14 credits (max.)
– After reaching advanced status:	1 credit
- The PMB graduate program recommends that you do not register for more than the standard full-time course load of 14 credits in fall and spring semesters.
 - Tuition support from the program, college, university, or outside funding sources, most often will cover a maximum of 14 credits per semester.
 - If you register for more than 14 credits, you are responsible for paying the additional tuition charge.
 - Some advisors or sponsors may cover more than 14 credits but you should check with your advisor or sponsor before registering for more hours than 14 credits.
 - The absolute maximum number of credits you may take in any one semester is 18.
- S/N grading option: You may register for a maximum of 30% of your course credits as S/N.

Other registration considerations

- Directed Study (PMB 8993) hours
 - When you register for directed study, sign up for the section connected to your advisor.
 - If no section is available, contact the GPC to get one established.
- A-F or S-N grade basis
 - There are two distinct grading systems: A-F and S-N (satisfactory or not satisfactory). The two may not be combined for a particular student in a particular course.
 - When both grading systems are available, you must declare a choice of system as part of the initial registration for the course. *The choice may not be changed after the end of the second week of classes. To request an exception to this deadline, submit the Graduate Registration Exception Request, under "Appeals and Petitions" on the One Stop forms page: <https://onestop.umn.edu/forms>.*

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- Auditing
 - You may audit classes, but you receive no credit and they do not count toward your required classes or the 6-credit minimum to be considered full time. In general, there is little advantage to auditing a course. Check with your advisor and the DGS before auditing a course.
 - To maintain your visa or assistantship status, you must be registered for 6 credits in addition to any audited courses.
 - You will be billed for audited courses.
 - If you audit a class, and your total course load exceeds 14 credits, you will be billed for all credits over 14.

 - GRAD 999
 - Zero-credit, no-fee placeholder course that allows you to maintain active status as a graduate student. It will NOT maintain full time status for anything else, such as a paid appointment (RA or TA), visa status, or deferred student loans.
 - International students may get a waiver from ISSS to register for GRAD 999 but must check with ISSS before registering. (See <https://iss.umn.edu/fstudent/fullcourse.html>.)
 - You may register for GRAD 999 once you have completed *all* degree requirements and have attained advanced status but need to maintain active status to graduate.
 - With GRAD 999 registration, you will lose access to certain university resources (gym, etc.), because you are not paying student fees.
 - GRAD 999 registration requests require approval from your advisor, the DGS, and the CBS Associate Dean for Graduate Education.
 - The form to request GRAD 999 registration is available on the CBS website, under the “Policies, forms and resources” section on <https://cbs.umn.edu/info/graduate-students>.
 - You may register for GRAD 999 two times (for one semester each time). After this, the PMB program will place a registration hold on your record.
 - In certain circumstances, e.g., when you are conducting research away from the university, but do not have assistantship or fellowship support and need to avoid paying tuition, you may be allowed more than two GRAD 999 registrations.
 - Do not register for GRAD 999 if you must be registered to hold a graduate assistantship, maintain legal visa status, defer loans, or receive financial aid.

 - Leave of absence (LOA)
 - Under extenuating circumstances, you may petition for up to a two-year LOA. You are not required to register during a LOA. After two years, you must register again or you will be considered withdrawn from the program and would have to reapply to be considered for readmission. Find the LOA request form online at (<https://cbs.umn.edu/info/graduate-students/policies-forms-academic-resources/forms-graduate-students>).

ADVISOR AND ADVISORY COMMITTEE

Advisor

- You are expected to approach PMB faculty members to identify a thesis research advisor. Inquire about research opportunities and discuss potential thesis projects.
- Identify a thesis research advisor no later than the end of your second semester.
- You may know who your advisor will be before you matriculate. If so, please notify the GPC.
- If you have not identified an advisor by the time you enroll, the DGS or ADGS may serve as a temporary advisor until you have identified an advisor.
- If you are having difficulty finding an advisor, meet with the DGS to seek assistance.
- Notify the GPC of your advisor, once determined. The program coordinator will record your advisor with Graduate Student Services and Progress.
- If you switch advisors during your program, you must notify the GPC.

Advisory committee

You will work with your advisor to form an advisory committee. Your committee will help you develop your research, choose courses, provide instructive feedback, evaluate your performance, and ensure progress towards the degree.

- You must have at least four committee members.
- Three committee members, of whom one is your advisor, must represent PMB.
- One committee member must represent a supporting program.
- The member representing a supporting field could be a member of the PMB graduate program faculty, so long as this person also holds an appointment in another graduate program (e.g., APS, EEB, GCD).
- Committee members from outside the university are allowed. (See page 12 for details.)
- The composition of your committee can be changed, but you should not make changes before discussing this with your advisor.

Committee activities:

- First-semester committee
 - > In your first semester, you are expected to have one committee meeting with a temporary committee composed of your advisor (or potential advisor) and two other PMB program faculty members. This meeting should be used to get advice on courses, research directions, and other activities.
- Regular advisory committee meetings
 - > After your first semester, you are expected to meet regularly with your advisory committee—you should want to, they can provide valuable guidance (See page 13 for details).
- Preliminary written examination committee
 - > In your fourth semester, your committee will review your research proposal, which serves as your preliminary written examination. (See page 15 for details.)
 - > One committee member (not your advisor) will serve as chair (the administrator) of this exam. Your committee members will decide among themselves who will serve as chair.

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- > Your advisor may serve only as a non-voting member.
 - > Your advisor reads and comments on the exam and assists the committee and you, if revisions are required.
 - > You do not need to formally declare this committee with the graduate school; however, you must report the committee membership to the PMB program office.

 - Preliminary oral examination committee
 - > Before the drop/add deadline of your fifth semester, you should hold your oral preliminary examination. (See page 17 for details.)
 - > One committee member (not your advisor) will serve as chair (the administrator) of this exam. Your committee members will decide among themselves who will serve as chair.
 - > You must formally declare this committee with the graduate school. You do this online at <https://onestop.umn.edu/academics/examination-committees#accord-8>.

 - Final exam committee
 - > One committee member (not your advisor) will serve as chair (the administrator) of the exam. Your committee members will decide among themselves who will serve as chair.
 - > You must formally declare this committee with the graduate school, before you schedule your final exam. You do this online at <https://onestop.umn.edu/academics/examination-committees#accord-8>.

External committee member

Committee members from outside the university may participate on your advisory and examination committees. The outside members must bring scientific expertise to your committee that cannot be found among the faculty at the University of Minnesota. To request an external committee member:

- Your advisor must send to the DGS a letter of request and the proposed committee member's curriculum vitae.
- The DGS will review the request and recommend to approve or deny the appointment.
- If approved by PMB, the DGS sends a memo to the CBS Associate Dean for Graduate Studies, requesting approval of the appointment.

Remote participation in graduate examinations

Committee members may participate in your exams remotely, if absolutely necessary. Required conditions and best practices for this circumstance are outlined online at <https://policy.umn.edu/education/doctoralperformance-appa>.

ADVISORY COMMITTEE MEETINGS /EVALUATIONS

Your advisory committee supports you and evaluates progress toward your degree. Progress is evaluated against PMB program expectations: coursework, assistantships, thesis research, productivity, timeliness in fulfilling requirements, and professional development.

DEADLINES: You are expected to meet with your advisory committee regularly:

- > First year students: in fall semester by mid-November and in spring by March 31.
- > Second and third year students: in spring semester by March 31.
- > Fourth year and onward: in the fall by mid-November and in the spring by March 31.

Plan additional meetings as necessary.

You are responsible for scheduling committee meetings. Given complex schedules and numerous responsibilities of faculty members, this can be challenging. You should schedule meetings several weeks in advance, using Google calendars, Doodle, When2Meet, WhenIsGood, or other tools to find a time when everyone is available.

If you are unable to convene your full committee, a majority of the committee may suffice. Consult individually with committee members who are unable to attend.

You get the greatest benefit from committee meetings by having ample time for discussion. Lengthy presentations are seldom helpful. You should plan to cover:

- scientific questions, research challenges, and interpretation of results;
- past, current and planned coursework;
- rotations and professional development;
- progress made on your goals since your last committee meeting and your goals for the next meeting; and
- your future career goals and the path you are/should be on to attain those.

Organizing advisory committee meetings

- > Identify a meeting time that works for the majority of the committee.
- > Reserve a room. (Check with the GPC to find a room.)
- > Email committee members as soon as possible with the date, time, and location of the meeting.
- > Request access to your online evaluation form from the GPC.
- > Inform the GPC of your committee meeting date.
- > Update the first page of the online evaluation form and fill out the “Accomplishments and Goals” section for the current meeting.
- > Send a reminder to your committee members one day prior to the meeting.
- > Prepare an agenda (no more than one page).
- > Relax! Remember that the role of the committee is to help you with your research and education. Make the most of your meeting by asking questions.

Evaluation form

The PMB graduate student evaluation form documents your progress through the PMB degree program. You should complete the form within one week after your committee meeting.

***DEADLINE:* You should submit your evaluation form within one week of having your meeting. Timely submission of this form is required to maintain your student status in the PMB graduate program.**

- > Request access to your evaluation form from the GPC.
- > Update and fill out the required sections of the form.
- > Upload your current CV along with the evaluation form, following the PMB guidelines for sections to include in your CV.
- > After your committee meeting, your advisor will complete the advisor section in consultation with your committee.
- > The GPC and DGS will review and sign the online form. The DGS will notify you, in writing, if you are not making satisfactory progress in your degree program and will outline actions required and the timeline allowed to address deficiencies. Failure to address deficiencies may result in blocking registration or termination from the program.
- > Submit your form within one week of having your meeting. Timely submission saves the GPC and DGS from spending their time trying to determine the status of the meeting. Meetings that are not reported are the same as not having had a meeting, and having these meetings are necessary for maintaining good standing in the program.

PRELIMINARY WRITTEN EXAMINATION

- Your preliminary written examination takes the form of a formal dissertation research proposal.
- You are expected to conduct independent research that makes a significant contribution to a particular field of study.
- Your research should be designed to produce publications in refereed journals.

DEADLINE: You are expected to complete your preliminary written examination by the end of spring semester of your second year.

If you are going to miss this deadline, you are required to provide a written explanation and a new timeline to the DGS. Failure to provide this explanation, failure to provide an adequate explanation, or failure to complete your preliminary written exam by the end of your fifth semester will mean you are not in good standing. (See page 25 for details.)

Proposal preparation

During fall semester of your second year, you are required to register for PMB 8901 Preparation of Research Proposals. This two-credit course focuses on the preparation of a dissertation research proposal. You will learn the process of developing ideas, writing effective proposals, and facilitate peer evaluation. By the end of the semester, you will have a research proposal that can serve as the basis of your preliminary written examination.

The proposal should:

- set forth hypotheses, state questions, aims, or goals of the proposed research;
- state the significance of the problem or the need for the research;
- provide a critical review of the relevant literature underlying your hypotheses, questions, and analyses;
- provide an effective experimental design to test hypotheses; and
- describe analyses and the interpretation of the possible results of the analyses.

Most preliminary written examination proposals are organized like an NSF research proposal. The proposal is limited to 15 pages of double-spaced 12-point type, including figure legends and tables, but excluding figures and references.

You are expected to meet regularly with your advisor to discuss your proposal while you are working on it. You also should consult with your advisory committee members, other faculty mentors, and fellow students when developing your proposal for the preliminary written examination. However, the writing and ideas in the proposal should be yours. You may not use material from research grant proposals written by your advisor or anyone else.

The proposed research must be of sufficient depth and breadth for a Ph.D. dissertation, but does not need to be your actual research plan. You, your advisor, and your committee will settle on the ultimate direction of your dissertation research after the written exam.

Preliminary written examination process

- > After completing PMB 8901, you should discuss your research proposal with your advisor and advisory committee members. (See page 11 for information on forming your committee.)
- > Make revisions to your proposal based on these discussions.
- > Arrange timing with your committee, so that they will be able to review your proposal and you will have time to make revisions, if necessary, by the end of your fourth semester.
- > Submit your proposal to your committee members and the GPC.
- > Each committee member reviews the proposal and communicates their evaluation and written comments to the committee chair.
- > The chair collates the individual reviews into a written summary that should be communicated to the student within two weeks.
- > The chair communicates the outcome of the exam to you and the GPC, who reports the result to Graduate Student Services and Progress.

Evaluation and results

Preliminary written examinations are evaluated as acceptable, acceptable in principle but needing revision, or unacceptable.

1. **Acceptable:** If the majority of voting committee members find the proposal acceptable, you pass the written examination.
 2. **Acceptable in principle, revision required:** If the majority of voting committee members find the proposal acceptable in principle but deficient in some respect(s), then revision and reevaluation of your proposal is required. Your examining committee chair will provide you with written comments from your committee members and guidelines for revising your proposal. You should plan to meet with your committee, including your advisor, to discuss this outcome and expectations for revision. At the discretion of the committee, you may exceed the 15-page limit in the revised proposal. You must submit your revised proposal within one month from the date when you receive the original evaluation. For an extension of this timeline, the committee chair must request it, and the DGS must approve it. If the majority of committee members find the revised proposal acceptable, then you pass the examination. If the majority finds the revised proposal unacceptable, then you fail the exam. If you fail the exam you do not continue in the Ph.D. program although at the discretion of your advisor and committee you may pursue a MS degree.
 3. **Unacceptable:** If the majority of voting committee members find that the proposal unacceptable—that is, it contains fundamental flaws that cannot be remedied by revision—then you fail the exam and do not continue in the Ph.D. program. However, if you, your advisor, your committee, and the DGS agree, you may pursue an M.S. degree.
- You may appeal your committee’s decision. An appeal must explain why the proposal is deserving of a ranking that differs from that reached by the committee. Appeals must be in writing and submitted to the DGS within 7 calendar days of you getting the exam results.
 - If your committee needs an extension on your preliminary written examination, they should ask the DGS for the extension. To ensure timely completion of the written examination, extensions should not be longer than one week, although longer extensions may be granted if the exam is occurring during the summer.

PRELIMINARY ORAL EXAMINATION

The preliminary oral examination is designed to evaluate competency in areas of specialization, as well as broader themes that are part of plant and microbial sciences. The oral exam is typically composed of a short presentation (10 to 15 minutes), followed by committee members asking you questions. However, your committee may decide upon a different format, as long as that format is consistent with graduate school policies. You should schedule your preliminary oral examination soon after passing the preliminary written examination.

DEADLINE: You are expected to complete your preliminary oral examination before the drop/add deadline of your fifth semester.

If you are going to miss this deadline, you are required to provide a written explanation and a new timeline to the DGS. Failure to provide this explanation, failure to provide an adequate explanation, or failure to complete your preliminary oral exam by the add/drop deadline of your sixth semester will mean you are not in good standing. (See page 25 for details.)

Preliminary oral examination process

- Formalize your preliminary oral examination committee (See page 11 for guidelines).
- Wait for approval of your preliminary oral examination committee.
- Schedule your preliminary oral examination time and location.
- Report your preliminary oral examination time with Graduate Student Services and Progress, online at <https://onestop.umn.edu/academics/doctoral-oral-exam-scheduling>.
- Pick up your oral examination evaluation form in person from the GSSP office.
- Return the evaluation form (with committee members' signatures and exam results) in person to the GSSP office.

Evaluation and results

Preliminary oral examinations are evaluated as:

1. Pass without reservations
2. Pass with reservations
 - > Within one week of the exam, the committee chair must send a letter to Graduate Student Services and Progress (gssp@umn.edu), the GPC, and you that clearly stipulates the reservations and steps required to remove them. Include your student ID in this letter.
 - > Once you meet the required steps, the committee chair must email GSSP, the GPC, and you, indicating that you have fulfilled the requirements and the reservations should be removed.
3. Fail
 - > Each committee member must indicate whether a retake is approved.
 - > With the unanimous consent of the examining committee, one retake is permitted.
 - > If a retake is not approved, you are no longer allowed to continue in the Ph.D. program. If you, your advisor, your committee, and the DGS agree, you may pursue an M.S. degree.

ADMISSION TO CANDIDACY

To be admitted to candidacy for the doctoral degree, you must have:

- completed all formal coursework and thesis credits on your degree planner;
- earned a 3.0 graduate GPA, with no grade lower than C in any course on your degree plan;
- passed your preliminary written and oral examinations; and
- met the residence requirements.

NOTE: *The final exam will not be authorized for any doctoral student who has not been admitted to candidacy.*

DISSERTATION

The culminating product of your graduate research is a dissertation. A typical dissertation consists of a short introductory chapter followed by three chapters, each of which is written in the form of a manuscript. However, the form of your dissertation might vary and what is considered acceptable is something that is decided upon by your advisor and committee members.

You should work closely with your advisor to determine when chapters are ready for your committee to review. Some committee members prefer you provide all chapters to them at the same time, others prefer that you send each chapter as soon as it is complete. Dissertation chapters that also are manuscripts that you will submit for peer-reviewed publication should be provided to your committee members for review prior to submission to the publication. Be mindful of busy schedules and allow at least two weeks for reviews of your drafts.

You are expected to present a polished, grammatically correct, properly formatted draft of your dissertation to your advisory committee after you and your advisor have agreed on the content. Your advisor and committee members have the right to reject documents with grammatical or formatting errors or that fail to meet high standards of scientific style.

Program dissertation review

- You must have three faculty members review your dissertation, it is expected that these three reviewers will also be members of your committee.
- You must have a minimum of two major-field reviewers and one minor/outside reviewer.
- Your advisor must be one of the reviewers.
- You must allow at least 14 days for your reviewers to read through your full dissertation.
- Your reviewers must sign off on the reviewers' report form before you can hold your final exam. (This form is in the graduation packet you receive when you apply to graduate.)

University dissertation review

- Once your dissertation reviewers have deemed your dissertation acceptable and you pass your final oral examination, you must submit your dissertation or thesis via ProQuest (<https://onestop.umn.edu/academics/thesisdissertation-submission-and-formatting>).
- You must also submit the dissertation signature page (at <https://onestop.umn.edu/academics/thesisdissertation-submission-and-formatting>) and the University digital conservancy deposit agreement that is in the graduation packet you receive when you apply to graduate.
- The Graduate Student Records reviews each dissertation for adherence to University guidelines for quality and consistency. Graduate Student Records will inform you of any revisions or formatting changes needed. Graduate Student Records must approve your manuscript before you will be cleared to graduate.

WRITING RESOURCES & SUPPORT

- Dissertation templates and formatting: <https://onestop.umn.edu/academics/thesisdissertation-submission-and-formatting>
- UMN Center for Writing: <http://writing.umn.edu/sws/quickhelp/graduate.html>
- Dissertation writing retreats: <http://writing.umn.edu/sws/dissretreat/index.html>

DEGREE COMPLETION

- > Notify the GPC of your plans to graduate at the beginning of the semester in which you plan to finish your degree. (You may graduate in any month, but you should inform the GPC early the semester to allow time to verify completion of all degree requirements.)
- > Plan your public seminar. (See page 21 for details.)
- > Assign the members of your final oral examination committee at least one semester prior to your expected exam date. Do this using the form online at <https://onestop.umn.edu/academics/examination-committees>.
- > Download the graduation packet. (Available through your MyU account.)
- > Submit your dissertation to your reviewers. (See page 19 for details.)
- > Set your final exam date, time, and location with your final exam committee.
- > Apply to graduate. Online at <https://onestop.umn.edu/academics/apply-graduate>.
- > Formally schedule your final exam with Graduate Student Services and Progress: <https://onestop.umn.edu/academics/doctoral-oral-exam-scheduling>. You will receive a confirmation email to your UMN email account when your final exam time is recorded. (See page 21 for details on the final oral exam.)
- > Pick up your final exam report form in person from GSSP.
- > Return your final exam report form in person to GSSP no later than the last business day of the month in which you plan to graduate.
- > Your degree will be awarded on the last working day of the month in which you complete all requirements.
- > Submit your dissertation through ProQuest before the last business day of the month in which you plan to graduate.
 - If you submit your dissertation on, or after, the last business day of the month in which you plan to graduate, you may not graduate in that month. Graduate Student Records must review your dissertation and accept it as meeting university standards before they will clear you to graduate.

For reference: <https://onestop.umn.edu/academics/graduation-checklist-grad-students>

You must be registered in the semester when you will graduate. If you graduate early in the semester, you must be registered, even if that registration is just valid for a few weeks. You must register for PMB 8444 if you have funding during your final semester. You may register for GRAD 999 if you have no funding. (See page 10 regarding GRAD 999.)

COMMENCEMENT

The College of Biological Sciences holds a commencement ceremony for graduate students each year in May. The ceremony is open to graduates who have completed or nearly completed their degree. Students with pending degrees also may participate if they meet their program's criteria for commencement attendance.

NOTE: *Attending the ceremony does not imply that you have officially graduated. Commencement is a separate process from submitting the graduate school application for degree. Please inform the GPC if you will be attending the commencement ceremony.*

FINAL ORAL EXAMINATION

The final exam involves both a public seminar on your doctoral research and a closed-session dissertation defense with your advisory committee.

You may schedule the seminar as part of the PMB Colloquium series or hold the seminar immediately prior to the closed-session defense with your committee.

If you opt to present through the PMB Colloquium, contact the PMB Colloquium Committee and the GPC in the semester prior to when you plan to give the seminar to get on the Colloquium schedule.

If you opt to hold the seminar immediately prior to the defense, then it is your responsibility to advertise the date, time, and location of your defense seminar to PMB graduate program faculty members, students, post-docs, and colleagues. Contact the GPC at least two weeks prior to your defense seminar for flyer templates and announcement procedures.

The dissertation defense involves a critical evaluation of your dissertation, and discussion of final revisions to the thesis, and general discussion of future plans. It is your responsibility to schedule both the seminar and the defense meeting. Before scheduling your final oral examination, be sure to follow the steps in the degree completion section on page 20.

Final examination eligibility

Before GSSP will authorize your final examination, you must meet the following requirements:

- Complete all coursework on your doctoral degree plan (30 credits).
- Complete 24 credits of doctoral thesis credits (PMB 8444).
- Complete at least one professional development course or equivalent.
- Serve as a teaching assistant for at least one semester.
- Pass your preliminary written examination.
- Pass your preliminary oral examination. If you passed the preliminary oral examination with reservations, a letter notifying you and GSSP that your committee removed the reservations must be on file.
- Be in active student status at the time of the examination (registered for either PMB 8444 or GRAD 999).
- Have an approved doctoral final examination committee on record.
- Have filed the reviewers report form with GSSP.

Last minute changes to your final examination committee

If you need to make any last-minute changes to the membership of your final examination committee, you must immediately report and get approval for these changes prior to the final exam. Submit committee changes online at <https://onestop.umn.edu/academics/examination-committees>. The DGS and college will review the change(s) and approve as appropriate.

Academic process: Master of Science

The PMB graduate program is primarily a doctoral program. However, options for a master of science (M.S.) with a thesis (Plan A) or without a thesis (Plan B) are available.

Students are seldom admitted to the PMB program if their intent is to pursue a master's degree. The program does allow this, although such students are expected to be supported on external fellowships or by their advisor for their entire time in the program. M.S. students are not eligible for program fellowships or summer support. M.S. students are eligible for teaching assistantships, although if TA opportunities are limited, M.S. students will have lower priority than Ph.D. students. At the discretion of the DGS, M.S. students may be eligible for partial professional development funding.

If you intend to pursue a master's degree from the outset, you must identify an advisor and research topic by the end of your first semester. M.S. students should plan to graduate within two to three years from the date you enroll.

Change of status

- With the approval of the advisor, advisory committee, and DGS, students enrolled in the doctoral track may switch to the master's track.
- To switch from the doctoral to master's track, you must submit a change of status form (<https://www.grad.umn.edu/admissions/cos>) to the graduate admissions office.
- If you switch from the doctoral to master's Plan A track, your PMB 8888 doctoral thesis credits may be converted to PMB 8777 master's thesis credits.

MASTER OF SCIENCE: PLAN A (WITH THESIS)

DEGREE PLAN

You will work with your advisor to develop a plan for the course work and thesis credits you will take. Follow the credit and course requirements, below. You must submit your degree plan for approval by the program, using the GPAS system. (See page 4 for details.)

DEADLINE: As a master's student, you must submit your degree plan by the end of your first semester.

Credit requirements

- 30 credit hours total required. This includes 20 course credits and 10 thesis credits. The course credits must include the 6.5 credits of required courses and 13.5 credits of supporting courses
- Grades of S, C or higher are required on all coursework.
- At least 14 credits of the 20 required course credits must be graded A-F.
- Two 4000-level courses (8 credits maximum) are allowed. (For permission to take more than two 4000-level courses, confer with your advisor, committee, and the DGS.)

Required courses are the same as those required for Ph.D. students (although you may petition to not take PMB8901, Preparation of Research Proposals). See page 5 for descriptions of the required courses and the expected timeline for taking them.

Supporting courses: You must take supporting courses that are relevant to your area of specialization. See the list of acceptable courses on the PMB Graduate Program website.

Thesis credits: PMB 8777. Thesis Credits: Master's. (10 credits) Register for thesis credits in any semester.

See pages 8–10 for registration guidelines.

ADVISOR, ADVISORY COMMITTEE, AND ADVISORY COMMITTEE MEETINGS

Follow the same guidelines for advisors and advisory committees as for the doctoral students (see page 11), except:

- You must have three advisory committee members (not four).
- You must hold an advisory committee meeting every semester.

RESEARCH PROPOSAL

- You are expected to conduct research that makes a contribution to a particular field of study.
- Your research should be designed to produce at least one publication in a refereed journal.
- Your advisor and advisory committee must approve your research proposal.
- You are expected to work closely with your advisor when preparing your research proposal. You also should consult with your advisory committee members and other students.
- For further guidance on the research proposal consult the section on proposal preparation above (the same guidelines and guidance provided to PhD students is also relevant to M.S. students).

DEADLINE: You must complete your research proposal by the end of fall semester of your second year.

If you are going to miss this deadline, you are required to provide a written explanation and a new timeline to the DGS. Failure to provide this explanation will mean you are not in good standing. (See page 25 for details.)

THESIS

Follow the same guidelines for the thesis as doctoral students do for the dissertation (see page 19).

FINAL EXAMINATION

Follow the same guidelines for the final examination as for doctoral students (see page 21).

MASTER OF SCIENCE: PLAN B (WITHOUT THESIS)

Requirements for the M.S. Plan B track are the same as for the M.S. Plan A track, except:

- You must take 30 course credits. No thesis credits are required.
- You must write a proposal but not a final thesis.
- The proposal should identify a research problem, survey literature on the topic, describe methods or experimental design, and discuss the significance of predicted or potential findings in relation to the problem.
- You are not required to give a public seminar at the time of the final examination, but you may, if you choose to.

Academic standards

You are expected to make steady progress toward a degree and commensurate academic accomplishments. The PMB graduate program's goal is for you to complete your degree within five years.

To remain in good standing with the PMB graduate program, you must:

- Maintain a minimum 3.0 GPA, with no grade lower than C in any course on your degree plan.
 - > If your GPA falls below 3.0:
 - You will not be allowed to graduate until your GPA improves.
 - You will be considered to be not in good standing.
 - > If you earn a D, F, or N (not satisfactory) in a course on your degree plan, you must retake the course and earn at least a C or S, arrange a grade change with the instructor, or remove the course from your degree plan. This final option does not remove the course from your record, and it would still count in your overall GPA, but it would not count toward your degree plan credit hours.
- Meet deadlines for submitting a degree plan, completing your preliminary written examination, and passing your preliminary oral examination.
- Follow the advisory committee meeting and evaluation schedule.
- Fulfill the research, professional development, and teaching experience requirements.
- Make suitable progress towards degree completion.

If you are going to miss deadlines for key milestones, such as preliminary exams, you are required to provide a written explanation and a new timeline to the DGS. Failure to provide this explanation, failure to provide an adequate explanation, or failure to meet milestones within one semester will mean you are not in good standing. The DGS may grant you additional time, but only after reasonable notification and justification are reviewed as submitted by memorandum from you through your major advisor.

If you are not in good standing, you must meet with your advisor to chart a course for returning to a status of good standing, this plan must be signed by you and your advisor and then submitted to the GPC and DGS.

If you are not in good standing for two consecutive semesters, and do not have an approved plan in place for returning to good standing, then you will be placed on academic probation. Being on academic probation will mean that:

- You and your major advisor will be notified that you are NOT in good standing.
- You will not be eligible for financial support from departmental funds (i.e., research and teaching assistantships, summer funding, travel funding, professional development funding).
- A registration hold will be placed on your account.
- Continued status of not in good standing can result in the termination of your degree program.

Duration and time limits

Doctoral students

- A doctoral degree generally requires five years of full-time work.
- You must complete all degree requirements, including submitting your dissertation, within eight years after initial enrollment in the graduate program.

NOTE: While the PMB program discourages you from taking longer than eight years to complete your degree, you may request an extension of these time limits. You must notify the program and complete and submit a petition form to GSSP (available at <https://onestop.umn.edu/forms>).

Master's students

- A master's degree generally requires at least two years of full-time work.
- You must complete all degree requirements, including submitting your thesis, within five years after initial enrollment in the graduate program.

NOTE: While the PMB program discourages you from taking longer than five years to complete your degree, you may request an extension of these time limits. You must notify the program and complete and submit a petition form to GSSP (available at <https://onestop.umn.edu/forms>).

Forms and signatures

The PMB program coordinator can assist with forms, as needed. The PMB Director of Graduate Studies must sign most forms. Some forms also require approval and signature from the College of Biological Sciences Associate Dean for Graduate Education. Please contact the PMB program coordinator if you have questions.

Forms you file online
<ul style="list-style-type: none">• Degree plan (GPAS planner) (Access via MyU)• Petition to change degree plan• Petition to add/remove a minor (https://onestop.umn.edu/forms)• Class time conflict approval (https://onestop.umn.edu/forms)• Graduate registration exception request (https://onestop.umn.edu/forms)• Reduced course load (for F-1 and J-1 visa holders)• Preliminary oral exam committee (https://onestop.umn.edu/)• Final oral exam committee (https://onestop.umn.edu/)• Preliminary and final oral exam scheduling (https://onestop.umn.edu/)• Graduation packet request (https://onestop.umn.edu/forms)• Change of status (switch from Ph.D. to M.S.) (https://www.grad.umn.edu/admissions/cos)• Petition to add/remove a minor (https://onestop.umn.edu/)
Forms you file via paper/PDF
<ul style="list-style-type: none">• Advanced doctoral status (https://onestop.umn.edu/forms)• Advanced master's status (https://onestop.umn.edu/forms)• Leave of Absence: request for and return from (CBS website)• GRAD 999: active status registration (CBS website)• Time extension request (https://onestop.umn.edu/forms)• Graduation application (in graduation packet)• Reviewers report (in graduation packet)• Deposit agreement (in graduation packet)• Readmission (https://www.grad.umn.edu/admissions/readmission)• Degree enrollment/degree verification (https://onestop.umn.edu/forms)• Curricular Practical Training (for F-1 visa holders)• Optional Practical Training (for F-1 visa holders)

Funding

GRADUATE ASSISTANTSHIPS AND FELLOWSHIPS

Graduate student support is most often provided by teaching assistantships, research assistantships, and fellowships. The duration, duties, and details of each appointment vary, but most are 50% effort—they require an average of 20 hours of work per week over the term of the appointment. Assistantships and fellowships generally include a stipend, tuition benefit, and health insurance coverage.

Teaching assistantships

Teaching assistantships involve assisting the primary instructors with course preparation, leading lab sessions, giving lectures, grading assignments and exams, holding office hours, and other tasks related to the course. Teaching assistant (TA) obligations usually begin before the first day of class, and TAs must be available for meetings with instructors before the start of the semester. TAs must be on campus throughout the entire semester of their teaching assignment.

TA assignments

- All PMB doctoral students must serve as a TA for one semester.
- Beyond this core requirement, the PMB graduate program typically honors all requests for TA positions from students in good standing.
- Each semester, the GPC will put out a call to all PMB students for TA position requests.
- Students who need to fulfill the program's TA requirement may have higher priority for placement than other students.
- TA requests from students in their sixth year of study and beyond will receive lower priority than students who have not been in the program as long.

Research assistantships

Research assistantships (RA) are generally associated with grants and awards to a faculty member. You and your advisor (as well as the supporter of the RA if that person is not the advisor) should discuss the expectations, duties, and expected time commitment before the RA begins. These duties and expectations should be recorded in writing, so that they are clearly defined prior to the beginning of the RA.

Fellowships

Fellowships can offer support for your educational and living expenses. We encourage you to apply for competitive fellowships and grants throughout your graduate program—they not only provide money (and having money is good), but also are an indicator of achievement. For fellowships that do not offer full support, the Graduate School or PMB may be able to provide supplemental funding.

The UMN Graduate School maintains information about fellowships available to graduate students: <https://www.grad.umn.edu/funding-tuition/fellowshipsandgrants>. You will receive notice about some (although not necessarily all) of these, as well as many opportunities that are not on this list.

Payroll When you have a graduate assistantship or fellowship, you are generally considered a university employee, and your stipend is paid through payroll. Pay periods are two weeks long. You are paid biweekly, every other Wednesday. Authorize automatic deposit of your pay through the “My Finances” tab in MyU.

SUMMER FELLOWSHIPS

The PMB graduate program offers fellowships to support research or training activities for PMB graduate students during the summer semester. The expectation is that the program will provide all students who do not have other sources of summer funding with two summers of fellowship support and the student or advisor will cover the other three summers. Talk with your advisor about summer support when you first choose an advisor; having a funding plan in place is less stressful for everyone.

NOTE: *It is possible that due to budget constraints, the program will not be able to provide summer funds to all students who request them every year or may require students to work as teaching assistants or research assistants in order to be paid. In such situations, the program will work with the advisor to develop a plan.*

Application process (for students who have not yet received two summer fellowships)

- > The GPC will circulate a call for summer fellowship requests in early April.
- > You must have completed your most recent annual committee evaluation and submitted a current CV to the program.
- > You will need to provide a list of other sources of summer funding and an outline of your summer research goals, a plan for achieving those goals, how your summer work will contribute to your degree progress, and your expected time to graduation.
- > The PMB Awards Committee will review applications and make funding recommendations.
- > The DGS will make final funding decisions.

Summer fellowships are paid as one-time scholarships in early June. For domestic students, there are no taxes withheld, but you remain responsible for any income tax liability. For international students, taxes may be withheld when your fellowship is paid out. See <https://humanresources.umn.edu/payroll-administration/taxable-graduate-fellowships>.

NOTE: Advisors are expected to provide summer support for students beyond the two years covered by the program or by student fellowships. However, on occasion advisors will not have money available. In these situations, the advisor is expected to contact the DGS to arrange for summer funding.

Competitive summer fellowships: In some years the program may have extra funds to support competitive summer fellowships. These fellowships will be available only to students who have already been supported by the program for two summers. The program will notify students when these fellowships are available.

- > The application process is the same as above, except that your advisor also must submit a letter that explains what other funds are available for supporting you, how you have been supported in the past, and the expectations for how you will be supported in the future. Your advisor should email this letter to the GPC.
- > Awards are based on demonstrated excellence in research and financial need.
- > Priority is given to applicants who have not previously received competitive summer fellowships and for students who have not yet entered their sixth year.
- > **Students who are not in good standing are in low priority for receiving summer support from the program, even if they have not previously received summer support.**

CAREER DEVELOPMENT FUND

The PMB program provides you with a career development fund when you join the program. You may use this money for professional development opportunities and for travel to professional conferences, workshops, and courses, or for other activities related to presenting research, networking, and developing research and professional skills. This money may not be used for direct support of research projects, including travel to field sites.

To use your career development funding:

- > Send an email to the GPC with a brief proposal and justification for your plans. Include details on the costs (travel, lodging, registration, etc.).
- > The DGS and GPC will review your plans and check your career development fund balance.
- > Register to participate and book your travel only after getting approval for your travel and verification of your funding balance from the program.
- > Submit all expense reimbursement requests to the GPC for processing.

NOTE: We encourage you to apply for outside travel grants, to supplement your career development fund. Further, you should plan to use any outside travel grants you receive before drawing on your career development fund.

TRAVEL GRANTS/FUNDING

- PMB travel funding
 - Your career development fund is available to cover your travel to professional meetings, workshops, courses, etc.
 - Occasionally the program will have additional funds available for additional travel grants. A call for applications will go out to all PMB students whenever such funds are available.
- Council of Graduate Students (COGS) travel grants
 - Individual travel grants for career development activities and professional conference participation.
 - Travel to research sites is not eligible.
 - See <https://sites.google.com/a/umn.edu/e47eb18e/resources/grants> for details and deadlines.

OTHER FUNDING OPPORTUNITIES

The Graduate School maintains a list of fellowships and grants: <https://www.grad.umn.edu/funding-tuition/fellowshipsandgrants>.

Some funding sources not listed on the Graduate School website include:

- Bell Museum graduate awards and fellowships: <https://www.bellmuseum.umn.edu/research/graduate-awards>
- Carol H. and Wayne A. Pletcher Fellowship: <http://uawards.umn.edu/recipients-outstanding-achievement-award/carol-h-pletcher>
- Cedar Creek summer fellowships: <https://www.cedarcreek.umn.edu/>
- Philip C. Hamm Memorial Scholarship: <http://hammscholarship.umn.edu/>

NOTE: When applying for external funding, it is best practice to check with the GPC before developing a budget and submitting your application/proposal.

Professional development

PMB Colloquium

- Tuesdays at 3:30 p.m., fall and spring semesters
- 105 Cargill Building
- You must register for PMB 8900 section 001 one time, typically in your first fall semester.
- You should attend regularly throughout your graduate career, even when you are not registered for the seminar course. Attending seminars is how you learn
- **NOTE:** *Attending the PMB Colloquium will not fulfill your professional development requirement.*

Colloquia/seminar series in other UMN departments

- Applied Plant Sciences: <https://www.appliedplantsciences.umn.edu/about/events-seminars>
- Conservation Sciences: <https://www.conssci.umn.edu/>
- Ecology, Evolution, and Behavior: <https://cbs.umn.edu/academics/departments/eeb>
- GCD seminar
- Horticultural Sciences: <https://horticulture.umn.edu/hort-news/wednesday-seminar-horticultural-science>
- History of Science, Technology, and Medicine: <https://www.hstm.umn.edu/news-events/colloquia>

Workshops and short-courses

- Emerge Bioscience: <https://cbs.umn.edu/academics/emerge-bioscience>
- Boreas Leadership Program: <http://environment.umn.edu/leadership/boreas/>
- Research Group Management
- Improvisation for Scientists

Teaching training, resources, support and workshops

- Center for Educational Innovation: <https://cei.umn.edu/>
- Preparing Future Faculty: <https://cei.umn.edu/support-services/preparing-future-faculty>

Academic and Professional Development resources through the Graduate School

- <https://www.grad.umn.edu/current-students/apd>

Organizations

- Society for the Advancement of Chicanos/Hispanics and Native Americans in Science, UMN Student Chapter: <https://gopherlink.umn.edu/organization/SACNAS>
- Minorities in Agriculture, Natural Resources and Related Sciences: <https://www.cfans.umn.edu/admissions/diversity-student-programs/manrrs>

Summary: key steps and milestones

- Establish a connection to a prospective advisor.
- Develop your research plan.
- Construct your graduate advisory committee.
- Put together a degree plan itemizing all classes you will take.
- Develop a research proposal.
- Complete preliminary written and oral examinations.
- Complete proposed lab- and fieldwork to collect data.
- Statistically evaluate your data.
- Attend professional meetings to present your research.
- Submit manuscripts to journals for publication.
- Write your thesis/dissertation.
- Present research seminar as part of the PMB Colloquium series.
- Defend your thesis/dissertation to your graduate committee.

Student and program activities

PHYTOGRADS

A graduate student organization aimed to provide social events and comradery among PMB graduate students and to participate in governance of the PMB graduate program.

Social events

- > Weekly coffee hour
- > Fall potluck
- > Winter soup lunch
- > Winter Itasca: weekend trip to Itasca State Park/Itasca Biological Station and Labs
- > Intramural sports: fall – soccer, winter – broomball, spring – softball
- > Spring greenhouse party

Outreach

- > PMB colloquium committee
- > PMB prospective student recruitment: late February or early March
- > PMB spring retreat: May
- > Market Science events
- > Social media presence (Twitter:

All PMB graduate students are automatically part of Phytograds.

Graduate student community organizations

- Association of Multicultural Scientists (AMS)
- Black Graduate and Professional Students Association (BGAPSA)
- Circle of Indigenous Nations
- Council of Graduate Students (COGS)
- Community of Scholars Program (COSP)
- Graduate Students of Color Alliance (GSOCA)
- Humphrey Student of Color Association
- La Raza Student Cultural Center
- Minnesota Network of Latinos in Higher Education
- Minnesota Queer Science
- QGPA: The Queer Graduate and Professional Student Association
- Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
- Women in Science and Engineering (WISE)
- Boreas Leadership Program

Key resources

- **Graduate Student Services and Progress (GSSP)**
 - > <https://onestop.umn.edu/academics/graduate-student-services-and-progress-gssp>
 - > details about the all the steps you must take towards finishing your degree
- **International Student and Scholar Services**
 - > <https://iss.umn.edu/>
- **One Stop**
 - > <https://onestop.umn.edu/>
 - > academic calendar, course schedules, registration details, records
 - > St. Paul campus One Stop office: 130 Coffey Hall
- **Graduate catalog**
 - > <http://www.catalogs.umn.edu/grad/index.html>
- **Student conduct code**
 - > regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf
- **Policies**
 - > <https://policy.umn.edu/education/doctoralperformance>
 - > <https://policy.umn.edu/education/mastersperformance>
 - > <https://policy.umn.edu/education/gradcreditdegree>
- **Minnesota English Language Program**
 - > <https://ccaps.umn.edu/minnesota-english-language-program>
- **IT support**
 - > help@umn.edu
- **Core research facilities**
 - > <https://cbs.umn.edu/research/resources/home>
 - > CBS Conservatory - <https://cbs.umn.edu/conservatory>
 - > Minnesota Supercomputing Institute - <https://www.msi.umn.edu/>
 - > University Imaging Centers - <http://uic.umn.edu/>
 - > UMN Genomics Center - <http://genomics.umn.edu/>
 - > U-Spatial - <https://research.umn.edu/units/uspatial>
 - > Center for Mass Spectrometry and Proteomics - <https://cbs.umn.edu/cmssp/home>
 - > Statistical Consulting Center - <http://irsa.stat.umn.edu/statistical-consulting-center>
- **Library**
 - > <https://www.lib.umn.edu/>
 - > subject librarian: Kristin Cooper, coope377@umn.edu

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- **Writing Center**
 - > <http://writing.umn.edu/>
 - > writing support, consultations, writing groups & workshops, thesis/dissertation retreats
 - **Career Services**
 - > <http://www.career.umn.edu/>
 - > CV writing, job postings, career/job search, graduate student workshops
 - **Preparing Future Faculty program**
 - > <https://cei.umn.edu/preparing-future-faculty-program>
 - > teaching skill development and exploring the faculty role at college or university level
 - **Council of Graduate Students (COGS)**
 - > <https://sites.google.com/a/umn.edu/e47eb18e/home>
 - **Graduate Assistant Employment Office**
 - > <https://humanresources.umn.edu/find-job/graduate-assistant-jobs>
 - **Graduate Assistant Health Plan**
 - > <https://shb.umn.edu/health-plans/gahp-home>
 - **Boynton Health Services**
 - > <https://boynton.umn.edu/>
 - > on campus health care
 - **Recreation and Wellness**
 - > <http://recwell.umn.edu>
 - > on campus gyms, recreation, and fitness
 - **Nutritious U Food Pantry**
 - > <https://gopherlink.umn.edu/organization/nup>
 - **Disability Resource Center**
 - > <https://diversity.umn.edu/disability/home>
 - > accommodations coordination, evaluation referral, adaptive tech. services, etc.
 - **Veterans resources**
 - > <https://onestop.umn.edu/veterans/resources-veterans>
 - **Student Counseling Services**
 - > <https://counseling.umn.edu/>
 - > career counseling, stress management, crisis intervention, etc.
 - **Employee Assistance Program**
 - > <https://humanresources.umn.edu/benefits/employee-assistance>
 - > consultation and referral services to address personal or work concerns

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- **Student Conflict Resolution Center**
 - > <http://www.sos.umn.edu/>
 - > formal and informal conflict resolution services

 - **Student Parent Help Center**
 - > <http://www.sphc.umn.edu/>
 - > childcare grants, childcare center information, lactation resources, support groups, etc.

 - **U Card**
 - > <https://ucard.umn.edu/umtc/home>
 - > University ID card

 - **Housing**
 - > <https://housing.umn.edu/graduate>
 - > on-campus and off-campus housing information

Student rights and responsibilities

SEE ALSO: University policy: Mutual Roles and Responsibilities for Faculty and Graduate Students (<https://policy.umn.edu/education/doctoralperformance-appd>), and Page 38, Respectful and responsible conduct in the PMB graduate program

STUDENT CONDUCT

The University of Minnesota policy is that minimum standards of conduct are necessary to safeguard the rights, opportunities, and welfare of students, faculty, staff, and guests of the University community and to assure protection of the interests of the University as it seeks to carry out its mission. The University is concerned with matters that may impinge upon academic achievement and integrity and with maintaining an educational climate. Other matters of concern include preserving and protecting the rights, health, property and safety of members of the University community. Specific disciplinary offenses actionable by the University include scholastic dishonesty, falsification, disorderly conduct on the campus, theft and property damage, disruptive noise and demonstration, etc.

Relevant policies

- The University of Minnesota Board of Regents Student Code of Conduct: https://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf.
- Student Conduct Code: <https://policy.umn.edu/education/studentconductcode-proc01>.
- Office for Community Standards: <https://communitystandards.umn.edu/>.

SEXUAL HARASSMENT

Sexual harassment is against the law. It is prohibited by Title VII of the 1964 Civil Rights Act and the Minnesota Human Rights Act. Sexual harassment is broadly defined to include behavior that is not considered overtly sexual. Although not specifically prohibited, consenting sexual relationships between faculty member and student, or supervisor and employee, are actively discouraged.

NOTE: All new employees, including graduate assistants, are required to complete the online training “Preventing and Responding to Sexual Misconduct for Employees,” available through Training Hub <https://it.umn.edu/technology/training-hub>).

Sexual harassment subverts the mission of the University of Minnesota, and threatens the careers of students, faculty, and staff.

Relevant policy

- The University has a strongly enforced policy on sexual harassment and encourages reporting of violations: <https://policy.umn.edu/hr/sexharassassault>.

Reporting

- > The Equal Opportunity and Affirmative Action (EOAA) office handles instances of alleged sexual harassment (<https://diversity.umn.edu/eoaa/home>). Report occurrences of sexual violence or threats immediately by calling 911 or University Police (612.624.3550).

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- > Faculty, staff (including postdoctoral researchers and fellows), and graduate student assistants are considered **mandatory reporters** under Title IX law and University policy (<https://policy.umn.edu/hr/sexharassassault> and <https://policy.umn.edu/operations/misconductreporting-faq02>) and therefore are obligated to report harassment or discrimination to the University’s EOAA office.

While the DGS and GPC can be first points of contact and help students who are facing harassment, resources are also available for students or faculty who feel they need to report an incident or inappropriate experience to someone outside of the program.

- Student Counseling Services: <https://counseling.umn.edu>. Counselors are not mandatory reporters under University Policy and can be a fully confidential first point of contact for sexual harassment concerns.
- Aurora Center: <http://aurora.umn.edu>. Aurora Center employees and volunteers are not mandatory reporters under University Policy and can be a fully confidential first point of contact for sexual harassment concerns.
- EthicsPoint: <https://secure.ethicspoint.com/domain/media/en/gui/9167/index.html>.
 - > EthicsPoint is a service independent of the University. It can be used to anonymously report “any situation or University conduct you believe violates an applicable law, regulation, government contract or grant requirement, or University policy.”
- Student Conflict Resolution Center: <http://www.sos.umn.edu>.

NOTE: *Graduate students who are found to be engaged in unethical behavior or to be perpetrators of sexual harassment may be removed from the program without a degree.*

EQUAL OPPORTUNITY

The University of Minnesota shall provide equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression.

Direct concerns or complaints about discrimination to the Equal Opportunity and Affirmative Action office (<https://diversity.umn.edu/eoaa/home>) and Bias Response and Referral Network (<https://bias-response.umn.edu/>).

Relevant policies

- <https://diversity.umn.edu/eoaa/policiesanddirectives>

EMPLOYMENT

See the graduate student employment policy for details about compensation, tuition benefits, performance evaluation, leaves of absence, parental leave, safety, conflict resolution, etc.: <https://policy.umn.edu/hr/gradstudentemployment>

GRIEVANCES

Whenever possible, grievances and disputes should be resolved between the affected parties and through respectful conduct. If direct resolution is not possible, the DGS and the department head can get involved. When an academic or employment problem cannot be resolved through these channels, there are several outside groups that may be able to help:

- Graduate Assistant Employment Office
 - <https://humanresources.umn.edu/find-job/graduate-assistant-jobs>
- Student Conflict Resolution Center:
 - <http://www.sos.umn.edu/>
- Office for Conflict Resolution
 - <http://ocr.umn.edu/>

Relevant policies

- Addressing student academic complaints: <https://policy.umn.edu/education/studentcomplaints>.
- Conflict resolution process for student academic complaints: <https://policy.umn.edu/education/studentcomplaints-proc01>.

Respectful and responsible conduct in the PMB Graduate Program

The PMB program is committed to fostering the education of students in a welcoming and supportive environment. All students and faculty must treat each other in a respectful, professional manner. We are all responsible for holding our student and faculty community to professional and respectful standards, both on and off campus.

1. Harassment of any kind (including but not limited to verbal abuse and sexual harassment) will not be tolerated.

- The relaxed atmosphere in some labs and in some environments can sometimes lead to thoughtless statements. Choose your words carefully and be mindful of your audience—all of our University sponsored facilities and events are professional environments, and you are among colleagues.
- Excessive drinking at PMB events is prohibited, and any student or faculty member found to be intoxicated will be asked to leave the event and the incident brought to the attention of the department heads and DGS.
- Differences of opinions and points of view are normal and even encouraged in a scientific environment; however, we have a responsibility to treat each other with respect. Avoid personal attacks when engaging in exchanges of ideas.
- Sexual harassment includes both inappropriate physical contact and verbal intimidation in a sexual context. Refrain from touching or speaking to others in any way that might be taken as sexual or intimidating. All students have the right to be free of any sexual innuendos or insinuations during their graduate training. What one might consider light banter or an innocent joking remark may make another uncomfortable, or even be experienced as threatening or intimidating.

2. What to do if you experience or witness inappropriate behavior:

- If you have been subjected to harassment of any type or if you witness inappropriate behavior, you should report it immediately to the DGS, your department head, a faculty member of the Dean's office, or directly to the University's EOAA office. Faculty, staff (including postdoctoral researchers and fellows), and graduate students are considered "mandatory reporters" under Title IX law and University policy (<https://policy.umn.edu/hr/sexharassassault>), and therefore are obligated to report harassment or discrimination to the University's EOAA office. Staff at the Aurora Center, Boynton Health Center, and the Student Counseling Center are not mandatory reports, information revealed to these people does not have to be reported to the EOAA office.
- Under University policy, reports are held in confidence and protections from retaliation or adverse consequences are in place. While it is natural to be reluctant to report such incidents for fear of reprisal or creating problems for someone, reporting any incidence of harassment is important to prevent further escalation and to hold our community accountable.
- If an incidence of harassment is reported to you as a course TA, you are obligated by University policy and common courtesy to respect confidentiality and help protect the person who made the complaint from retaliation. Understand that sharing the identities of or information about complainants or witnesses beyond a "need to know" circle is considered retaliation according to University policy.

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- All reported incidents will be taken seriously and referred to the appropriate entity. Any student or faculty member subjecting others to harassment at a PMB graduate program event will immediately be asked to leave the event and reported to the program and department heads. Individuals subjecting others to harassment in any aspect of the program (including the laboratory, classroom, or off-campus UMN-related trips) may be terminated from graduate student or graduate faculty status in the program.

We appreciate the commitment of our faculty and students to creating a safe and constructive environment in the program. Our collective experience in class, in the laboratory, and at program events is important to our graduate program, and a comfortable climate is a big part of its success. We also have an obligation under University policy to provide the best possible experiences and opportunities for our students, and our students have a responsibility to bring constructive, collaborative behavior to our program. By working together as a respectful community, we can ensure that everyone finds the experience valuable, enriching, and positive.

Best advising practices for graduate student success

Best practice	Student's & advisor's responsibility	Advisor's responsibility	Student's responsibility
Establish milestones for academic and research progress	<ul style="list-style-type: none"> • Within 60 days: Discuss and agree on milestones to track student progress. • By 2nd year for Ph.D. students or 2nd semester for M.S. students: Establish advisory and exam committee(s) and develop a course work plan. • Annually: Document and review student progress. 	<ul style="list-style-type: none"> • Communicate expectations with respect to independence and how student is to function in the fairly unstructured graduate school environment. • Clarify availability of continued funding (e.g., assistantships or fellowships). 	<ul style="list-style-type: none"> • Clearly understand your own motivations for going to graduate school. • Seek alternative or supplemental funding, as needed. • Consult the Director of Graduate Studies or Graduate Program Coordinator to ensure that program requirements are met on time.
Maintain open lines of communication and provide timely feedback	<ul style="list-style-type: none"> • Discuss an optimum meeting frequency and meet regularly. • Establish written expectations and schedules; update as necessary as the degree program progresses or with changing circumstances. 	<ul style="list-style-type: none"> • Comment on student's work (reports, draft posters, seminar presentations, manuscripts, etc.) within 30 days. • Be mindful student's time, remember they have numerous commitments. Give them enough lead time to complete work. • Communicate developments that may impact time to degree (e.g., planned absences, sabbaticals, termination of funding). • Understand cultural differences that might affect communication. 	<ul style="list-style-type: none"> • Submit progress reports, draft posters or seminar presentations, manuscripts, thesis drafts, and other work in a timely manner. • Be mindful of advisor's and staff time. They are here to work with you, but remember they have other commitments. Give them enough lead time to help you with questions or issues. • Inform advisor of changes in schedule, including any paid or unpaid leave. • Seek help from advisor or from other sources to resolve difficulties.
Understand the terms and conditions of graduate assistant employment	<ul style="list-style-type: none"> • Ensure that offer letters and terms of employment are understood. • Comply with business practices of the department/program. 	<ul style="list-style-type: none"> • Understand graduate student rights. • Provide a safe work environment free from intimidation, humiliation, or harassment. 	<ul style="list-style-type: none"> • Complete any required training (e.g., safety, responsible conduct of research, ethics) in a timely manner.
Develop research ideas and career goals	<ul style="list-style-type: none"> • Agree on the scope and sequence of thesis research (thesis proposal) and engage at all stages. • Clarify expectations for multiple tasks (e.g., teaching, work/life balance). • Develop student career goals; revisit and revise periodically. 	<ul style="list-style-type: none"> • Give constructive feedback on student's research ideas. • Mentor students as they apply for jobs and advise on effects to their degree plan. 	<ul style="list-style-type: none"> • Keep a journal of research ideas and activities. • Seek professional development opportunities.
Connect with the larger campus and professional community	<ul style="list-style-type: none"> • Recognize and respect cultural differences. • Seek opportunities for leadership and professional development skills such as: public speaking, research ethics, working across differences, collaboration, conflict resolution, and data management. 	<ul style="list-style-type: none"> • Help student network with colleagues at other institutions. • Support student participation in scientific conferences, campus seminars, and on committees within the U of MN and CBS. 	<ul style="list-style-type: none"> • Attend campus seminars and events. • Serve on committees within the U of MN and CBS. • Participate in graduate student orientation and recruitment activities. • Participate in scientific conferences (find external travel funding, as needed).