

GRADUATE HANDBOOK

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF PLANT
BIOLOGY

2017
2018

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This handbook is designed to assist graduate students in the Department of Plant Biology in understanding the guidelines for degree completion and to provide students with information to familiarize them with our graduate program. Entering students are given a copy of this handbook and should become familiar with the contents. Please keep this copy, because the guidelines that were in effect at the time of entry into the program are the ones that will apply for your entire tenure as a student, i.e. changes made to the guidelines after your entry into the Plant Biology Department may not apply to you. Also, please note that all requirements of the Graduate School or the College of Natural Sciences also apply to you, even if not specified in this manual, though we have attempted to include this information.

I. PROGRAM OVERVIEW

A. PROGRAM GOALS

The Graduate Program in Plant Biology at Michigan State University is one of the finest in the country for research, training, and scholarship in the plant sciences. Plant Biology is central to many disciplines that make up modern plant science at Michigan State University. Students in this program can study all aspects of plant biology, from the molecule to the ecosystem, and they are trained to integrate information between different hierarchies of biological organization. In addition to a core of seminar requirements, the student's program is individually tailored depending on their interests and background. The Department of Plant Biology offers both an M.S. and a Ph.D. degree, and it is possible for students to get dual degrees or certifications by fulfilling requirements in various other programs offered by the University.

Our graduate students are supported by many national and international fellowship programs, by university, college, and departmental level fellowships, teaching and research assistantships, and by grants to individual faculty members. We urge applicants to review carefully the research interests of the faculty, as summarized in our departmental webpage <https://plantbiology.natsci.msu.edu/> and to contact those faculty members with whom they might like to work, well in advance of the application deadline (December 1st), to inquire about possible sponsorship for the following fall semester.

Our graduates are very competitive in the job market, as some go directly for employment in industry, government, small colleges or nature organizations and others go on for additional post-doctoral training, often leading to faculty positions at research universities or directing research in industry or government. Fitting the needs of employers, our students are trained (1) to do independent research and to master their subject areas, (2) to effectively communicate, orally and in writing, in the language of science, (3) to be able to work in a cooperative, professional manner with culturally diverse individuals, both as committee members and as members of research groups and teams, and (4) to have an appreciation of science ethics. In keeping with these goals, students are expected to complete departmental coursework requirements along with requirements determined by the student's guidance committee and to pass all required examinations. Students are also expected to attend the departmental Plant Biology seminar series, as well as dissertation proposal and defense presentations by fellow students. They are expected to attend professional meetings to present their research results, to learn more about their

field of study, and to make professional contacts as a part of the networking process essential to future success. Some essential web pages that graduate students should consult are as follows:

- Plant Biology Homepage
<https://plantbiology.natsci.msu.edu/>
- Academic Programs
<https://reg.msu.edu/AcademicPrograms/Default.aspx>
- Student Information and Services, Rights and Responsibilities, and Regulations
<http://splife.studentlife.msu.edu/law-students-rights-and-responsibilities/article-1-law-student-rights-and-responsibilities>
- MSU/GEU Contract
<https://www.hr.msu.edu/documents/contracts/GEU2015-2019.pdf>
- Guidelines for Graduate Student Advising and Mentoring Relationships
<http://grad.msu.edu/sites/default/files/content/researchintegrity/guidelines.pdf>
- Guidelines for Integrity in Research and Creative Activities
<https://grad.msu.edu/researchintegrity>

B. HOW TO APPLY

Admission to the Department of Plant Biology is based on your credentials, faculty interest, and funding opportunities. To be fully competitive, you should have contacted faculty with whom you are interested with working prior to application. Be sure to include the name(s) of faculty with whom you are interested in working in your Academic Statement (see below).

Your application should include the following:

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| 1. <i>MSU Application for Admission to Graduate Study</i> |
| 2. Academic Statement |
| 3. Personal Statement |
| 4. Three letters of recommendation |
| 5. Transcripts |
| 6. Graduate Record Examination (GRE) Scores. |
| 7. TOEFL scores (International students only) |
| 8. Application fee |

Deadlines: Submission of application materials on time is an important requirement for full consideration. To be sure that you will be considered for teaching and research assistantships and for a variety of possible university, college and departmental fellowships, you must have all materials in our hands by **December 1st**, for possible entry into the graduate program the following Fall Semester. Late applications may be considered as long as positions are available.

1. *MSU Application for Admission to Graduate Study*

Instructions for applying can be found at <https://grad.msu.edu/apply>

Apply Online: Follow the appropriate link to go to an interactive form that will allow you to send all of your information directly to MSU over the internet. All information is secured with SSL encryption. When a completed application form is received by the University, it will be sent automatically to the Department of Plant Biology if you list the correct major code (see below).

Apply by Mail: You can print a PDF version of the application found online. Instructions for completing the form are provided in the PDF. Be sure that each page prints full size. Mail the completed form and the remainder of your application materials to:

Department of Plant Biology
166 Plant Biology Laboratories
Michigan State University
East Lansing, MI 48824-1312

Major Code: Question # 17 on the University Application form asks you to specify a “major code” and “major name.” The major code for a **Plant Biology Ph.D.** is 7019. The major code for a **Plant Biology M.S.** is 7018.

2. Academic Statement

Provide a moderately detailed explanation of your plans for graduate study, your future professional goals, and how the graduate program in the Department of Plant Biology will help you meet your career and educational objectives. Be sure to indicate your area(s) of research interest and include mention of any research experience you have had prior to applying to graduate school at MSU. Please indicate specific faculty who you may wish to work within the Department of Plant Biology.

3. Personal Statement

Provide a personal statement about how your background and life experiences, including social, economic, cultural, familial, educational, or other opportunities or challenges motivated your decision to pursue a graduate degree. This information is especially helpful when considering applicants that may be eligible for fellowships.

4. Letters of Recommendation

Request three letters of recommendation, from individuals qualified to assess your promise of success in a graduate program, and have these letters sent directly to:

Department of Plant Biology
Graduate Admissions Committee
166 Plant Biology Labs
Michigan State University
East Lansing, MI 48824-1312

5. Transcripts

Arrange to have official transcripts sent to the above address. Most successful applicants have a GPA of 3.3 or higher with not less than a 3.0 in science and math courses. Consideration may be given to students who have a GPA less than 3.0 if an alternative proof of potential academic excellence, such as outstanding letters of reference, exceptional performance on the GREs, extensive research experience, etc., is provided to the admissions committee.

6. Graduate Record Examination (GRE) Scores

Have an official report of your GRE scores sent directly from the Educational Testing Service. The Institution Code for MSU is 1465 and the Departmental Code for Plant Biology is 0205. Since there is often a delay before such reports are received by the University, it may be helpful to send or fax a copy of your score report to the departmental address above to be sure that we receive your GRE scores before the **December 1st** deadline.

The three standard sections of the GRE, verbal, quantitative and analytical, are required for admission. Most successful applicants have a minimum verbal score of 550 and a minimum quantitative score of 600 on the GRE. The subject area exam (usually in biology but some applicants take it in some other field of science) is not required by our department, but, for some students, it can provide important additional support for the application.

7. TOEFL scores (International applicants only)

Official scores should be sent to the university by the testing service, but you may also send or fax us a copy with your application, to be sure we receive all materials before **December 1st**. The Institution code for MSU is 1465, and the Plant Biology program code is 0205. The newest version of the TOEFL exam will include a speaking test and will be on a different scale than the previous TOEFL. Although we prefer the new version of the exam, we will accept scores from the older version. The university minimum requirements are:

Internet-Based : 80 (no subscore less than 19, writing 22)

Computer-Based : 213 (no subscore less than 19)

Paper-Based: 550 (no subscore less than 52)

8. Application fee

Your application fee should accompany your application for admission to the Department of Plant Biology. The application fee was \$50 for the 2007-2008 academic year. Please make your check or money order payable to Michigan State University. Alternately, the online application allows for credit card payment of this fee. The application fee can be waived in special circumstances if a qualified applicant credibly shows s/he is not able to pay the fee but is seriously interested in the program.

The address to which all materials should be sent is:

Department of Plant Biology

Graduate Admissions Committee
166 Plant Biology Labs
Michigan State University
East Lansing, MI 48824-1312

For questions about the above application procedure, contact:

Sarah Seloske
Graduate Secretary
Phone 517-432-1346
FAX 517-353-1926
Email seloskes@msu.edu

For questions about the suitability of our graduate program for your goals and aspirations, contact:

Director of Graduate Studies
Phone 517-355-4696
FAX 517-353-1926
Email plbdgs@msu.edu

II. PROGRAM COMPONENTS/PLAN OPTIONS

A. MASTER'S OF SCIENCE (M.S.) DEGREE

Two Types of Master's Programs are available:

Plan A: (Thesis option) Consisting of prescribed course work, seminar requirements, research, Thesis, a teaching requirement and a final oral examination in defense of the Thesis. More detailed guidelines and descriptions of the requirements are given in Section III.G of this manual. The student's Thesis is defended at the final oral examination. Details regarding the Final Examination are in Section VI. of this manual.

Plan B: (Non-thesis option) Consisting of prescribed coursework, seminar requirements, an optional research project without Thesis, a teaching requirement and a final certifying examination based on coursework. More detailed guidelines and descriptions of the requirements are given in Section III.G. The Final Examination will be oral and based upon coursework, as detailed in Section VI.C.

B. DOCTOR OF PHILOSOPHY (Ph.D.) DEGREE

The program of study consists of courses, seminar requirements, a teaching requirement, research, a Dissertation, and exams administered by the Guidance Committee and a dissertation topic as agreed to by the Guidance Committee. The coursework will consist of courses required by the department plus courses dictated by the student's guidance committee and recorded in GradPlan (<https://grad.msu.edu/gradplan>). Further details are given in Section III.I of this manual. A Comprehensive Exam and a Final Examination in defense of the dissertation are required. For details of these exams see Section III.I and VI.

C. DUAL ENROLLMENT BY UNDERGRADUATES

Dual enrollment provides an opportunity for academically talented MSU undergraduate students to enroll in graduate courses and conduct research towards a graduate degree in Plant Biology while completing the last two years of their bachelor's degree(s) programs. To be considered for dual enrollment, the student must first file an Application for Admission to Graduate Study and the application must be reviewed and recommended by the department Graduate Committee, based on the academic qualifications of the applicant, the availability of a Thesis/Dissertation Advisor, and the potential for funding. Subsequent to admission to a graduate program the student must follow the guidelines for Dual Enrollment by Undergraduates in the MSU Academic Programs.

Within the first semester of dual enrollment, the student's graduate degree program adviser must be identified and the appropriate graduate degree guidance committee established. The adviser and committee assist the student in developing a program of study for the graduate degree. Admission to graduate study must be approved before work to apply toward a graduate degree program is undertaken. Credits completed prior to admission to graduate study cannot be applied toward a graduate degree program.

III. DEGREE REQUIREMENTS

A. ADMISSIONS

The review of admission applications begins as soon as the necessary transcripts, application forms, GRE scores, and letters of recommendation are available. These materials are available for any faculty member in the department and the graduate student representative on the Graduate Committee to review. These records and any other supplementary information that may be required are available to the entire Graduate Committee when they are making admittance decisions.

REGULAR ADMISSION FOR M.S. DEGREE. The minimum requirements are a Bachelor's degree or its equivalent, a 3.0 grade point average, one year of chemistry, mathematics, physics, and appropriate training in the biological sciences. Admission by the Department's Graduate Committee will be based on a combination of a student's credentials, faculty interest in a student, and funding opportunities.

REGULAR ADMISSION FOR PH.D. DEGREE. The minimum requirements are a Bachelor's degree or its equivalent, a 3.0 grade point average, appropriate training in the biological sciences, and one year each of chemistry, mathematics, and physics. Research experience at the undergraduate or graduate level is encouraged. Admission by the Department's Graduate Committee will be based on a combination of a student's credentials, faculty interest in a student, and funding opportunities.

CONVERSION TO PH.D. PROGRAM. Students admitted to the Master's program may, following formal approval by their Guidance Committee, transfer directly to the Ph.D. program, without completion of their Master's degree. Details for this procedure are given in Section III.G.7 of this manual.

PROVISIONAL ADMISSION. Students that have deficiencies in their application materials but that have other exceptional qualities suggesting potential for a successful graduate career may be admitted to the graduate program upon recommendation of the Graduate Committee to the Department Chair. Such students will not be considered for a degree until she or he has fulfilled the provisions of her or his admission as spelled out in their letter of admission from the department chair.

ADMITTANCE DECISION. A recommendation for admittance is made by the Graduate Committee to the Departmental Chairperson. The Chairperson makes all final decisions regarding admission.

B. READMISSION

If the student's program of study is interrupted for three or more semesters (including summer—in other words for a calendar year or more) the student must apply for readmission. To reapply you must use the READMISSION application through the Registrar's Office website.

C. BACKGROUND COURSES IN PLANT BIOLOGY

As part of their review of applications, the Graduate Committee can identify any courses that the student should take in their first year to remedy deficits in the student's prior coursework. The committee may require the student to take up to two undergraduate or graduate classes (one per semester during the first year), in order to ensure that the student is equipped to undertake graduate training in Plant Biology. These course requirements will be stipulated as part of the offer of admission to the graduate program. As part of this, the committee will ensure that all incoming graduate students have or will take the equivalent of at least one undergraduate class in the areas of ecology/evolution/systematics and physiology/biochemistry/molecular biology.

D. REGISTRATION PROTOCOL

Before registering for classes the student should always confirm their plans with their Temporary Advisor or Major Professor. This is especially important at the beginning of an academic program, before the student's guidance committee has been formed. Failure to meet with the Temporary Advisor/Major Professor, or failure to follow the program of study, prescribed by the guidance committee, may cause a delay in completing the program. Also, the Major Professor may have plans for research that could affect the student's plans for courses.

E. TEACHING REQUIREMENTS

All requirements must be accomplished in compliance with the current MSU/GEU contract: <https://hr.msu.edu/contracts/documents/GEU2015-2019.pdf>

The communication skills associated with teaching are essential regardless of whether the student will go on to work in academia, the public sector or the private sector. Teaching experience, therefore, is among the academic requirements for the degree. This requirement is accomplished by completing (1) participating in the University TA orientation program to learn about pedagogy in general and the teaching system at Michigan State in particular, and (2) assisting a faculty member in the teaching of one course. The purpose of assisting a faculty member with the course is to improve the graduate student's skills in pedagogy. This may include giving classroom presentations, preparing of teaching materials for student learning, and developing skills with teaching technology. The graduate student must be guided and evaluated by the

faculty member during this process, and, following completion of the course, the faculty member must complete the form "Faculty Evaluation of Teaching by a Graduate Student", which will be kept in the student's academic file. The form is intended to document that the teaching requirement has been fulfilled, as well as to inform the student of things they did well and/or areas where they need to improve for future success.

F. OPTIONAL ROTATIONS

Guidelines for Optional Rotations

During the first two semesters, students have the option of completing laboratory rotations with the goal of identifying, by mutual consent, an advisor and home laboratory by the middle of their second semester, if not before.

The policy governing rotations:

1. Rotations are optional for all students. Up to three rotations are allowed and all three rotations must be complete by the middle of the spring semester, if not before.
2. Each student choosing to rotate must rotate through at least one Plant Biology lab (the PI in the lab must have at least a partial or adjunct appointment in PLB).
3. Once an advisor has been identified, by mutual consent, the student may choose to discontinue further rotations, as long as the requirement to rotate through at least one PLB lab has been met.
4. For students that start early, summer rotations can be of varying length but count towards the three-rotation maximum. Rotations beginning in the fall are limited to $\frac{1}{2}$ semester, or approximately seven weeks.
5. By the middle of the spring semester, the student must identify an advisor and receive written consent that the student can join their laboratory. After agreement is reached, the student must notify their First Year Advisory Committee and the Graduate Secretary.
6. In exceptional instances, a fourth rotation during the last half of the spring semester may be allowed. The fourth rotation must be approved by the First Year Advisory Committee.
7. All students must have identified an advisor by the end of their second semester or withdraw or be dismissed from the graduate program.

Guidelines for setting up rotations

1. The primary purpose of rotations is to identify an advisor. At any time in the process, students are encouraged to contact their First Year Advisory Committee about how to proceed.
2. Initiate the process at least several weeks before arriving on campus so that you can begin your rotation when you first arrive. You may wait to arrange your second and third rotations, but this should be done during your first few weeks on campus.

3. To initiate your rotations, first ask potential faculty mentors if they are taking students, and if so, ask if and when they have openings for rotations in their labs during the coming year. Rotations should be through laboratories that have reasonable expectations of having space and resources to support the student's graduate work.
4. Arrange the order of rotations with the faculty supervisors and notify the First Year Advisory Committee. It is the student's responsibility to keep the First Year Advisory Committee informed of their rotation plans.

G. DETAILED DEGREE REQUIREMENTS-MASTER'S OF SCIENCE

The student must take any courses (up to two) that the Graduate Admissions Committee may require to insure they have an adequate background in Plant Biology. See details in Section III.C. The student will be notified of these specific requirements prior to the beginning of classes in their first fall semester in the graduate program.

1. Credit requirements

The M.S. degree obtained under either Plan A (with a thesis) or Plan B (without a thesis) has a minimum requirement of 30 credit hours beyond the Bachelor's Degree, including thesis or research credits. Undergraduate 300-level courses are applicable only if required by the Guidance Committee and approved by the Dean and the Graduate School. (See "Coursework and Seminars" below for information about enrollment.)

Plan A: Of the 30 credits total at the 400 level or above, a minimum of 16 credits must be at the 800-900 level, including a minimum of 4 and a maximum of 10 credits of PLB 899: Master's Thesis Research. The program of study consists of courses, the seminar requirements, and a thesis topic as agreed to by the Guidance Committee. An original thesis must be approved by the Guidance Committee.

Plan B: Of the 30 credits total at the 400 level or above, a minimum of 16 credits must be at the 800-900 level. No credits of 899 can count towards a Plan B degree. The program consists entirely of coursework (excluding 899), seminar requirements, and an oral exam. A majority of these courses should be selected in specialized fields of plant science at the 800-level to provide the candidate with advanced training in two or more of the following areas: anatomy, cytology, cytotaxonomy, ecology, genetics, molecular biology, morphology, ecology, biochemistry, mycology, paleobotany, physiology, phytopathology, plant virology, taxonomy, or other acceptable areas. At least nine credits of course work approved for graduate credit should be selected from outside the Department to provide a broader background in biology and the physical sciences. While no thesis is required under Plan B, research experience is desirable. The way to obtain this experience is to arrange a Special Problems (PLB 80X) course with some faculty member with appropriate interests. In this manner, at least, some exposure to research can be acquired.

2. Transfer Credits

As many as nine semester credits of graduate work (excluding thesis/research credits) may be transferred into a 30-credit Masters program from other institutions that are accredited within their respective geographic region upon approval of Dean and Department. Only courses in which a grade of 3.0 was achieved are acceptable for transfer. A combined maximum of 9 credits is allowed from transfer courses, Lifelong Education enrollment status, and the Graduate Certificate level with no more than 9 credits from each category

3. Residency Credits:

Each student must meet a residency requirement, which is two consecutive semesters, involving the completion of at least six credits of graduate work each semester.

4. Time Limit:

Many students complete the requirements for a Master's Degree in two years. To remain in good standing students must complete their Masters program within three years. The Department Chairperson may, in some cases, extend the time limit for a student to complete the requirements. The University time limit for completion of the Masters degree is five calendar years from the date at which the first course that applies to the degree was taken. So if a student transfers in a course that counts toward the degree that was taken 3 years prior to entering the program, the starting date is 3 years prior to entering the program.

5. Teaching Requirements:

Each Master's student must gain teaching experience by participating in the teaching of at least one course. Students are expected to participate in the University TA orientation program prior to teaching. Further details about the teaching requirement are given in section III.E.

6. Coursework and Seminars:

The courses which will be counted toward the required 30 credits will be decided upon by the student and Guidance Committee, with approval from the Departmental Chairperson, Dean, and the Graduate School. Required courses not applying to the degree will be designated as collateral. The program of study must be recorded on the *Report of the Guidance Committee – Masters Program* and submitted to the Graduate Secretary by the end of your second semester. The forms for this report are available online (<https://integrativebiology.natsci.msu.edu/graduate-program/degree-requirements/m-s-program-requirements/report-of-the-guidance-committee-masters-programs/>) or in the departmental office and are due at the end of the second semester.

The *Report of the Guidance Committee – Masters Program* becomes the student's official program when it is approved and signed by the Department Chair and the Dean. Changes in the program must be approved by the Guidance Committee and a form indicating the changes must be submitted to the department. If a student changes from a PhD program to a MS program 999 credits be changed to 899, but 899 credits cannot count towards a Plan B MS.

M.S. students are required to complete:

PLB 801. Foundations of Plant Biology (3 credits)

PLB 804. Frontiers in Plant Biology (2 credits)

Additionally, each Plan A candidate is required to present a departmental seminar (for no credit) concerning his/her research within the 12 months preceding the student's graduation. This Master's Seminar is considered part of the final thesis defense.

All students must complete the Grad School Workshop series *Responsible Conduct of Research*.

7. Bypassing the MS Degree

It is possible to enter directly into a Ph.D. program without first obtaining an M.S. degree. Any current M.S. student wishing to bypass the M.S. degree and become a Ph.D. candidate shall petition in writing his/her Guidance Committee and the Department Chairperson for permission to do so.

8. Distribution of the Master's Thesis

The Plan A Master's Student must present a publicly announced Thesis Seminar to the department, which is considered part of the thesis defense. The dissertation must be approved by the Student's Major Professor, and **considered to be in final form, before it is distributed to the Guidance Committee**. The unbound dissertation or a digital copy, as preferred by the committee members, should be **distributed at least two weeks prior to the Final Examination** to all committee members.

9. Final Examination

Important Note: You must be enrolled at the time of your Final Exam unless you are taking the exam during the summer and were registered in the spring. This exception is valid for both Plan A (defense) and Plan B (general knowledge) exams (but only applies to MS students). Details of this process are given in given in Section VI. Students in Plan A are required to pass an oral examination in defense of the Thesis. For students in Plan B, the emphasis of the examination is on coursework and general knowledge of plant biology and related fields. Notify the graduate secretary two weeks in advance of exams.

10. Finalizing the Master's Thesis:

After the student has passed the final oral examination in defense of the thesis, the student must incorporate any agreed-upon changes or corrections before presenting it to the Major Professor for final review and signature of the bookplate. MSU only accepts electronic dissertations submitted via ProQuest. The instructions for electronic submissions are available from <http://grad.msu.edu/etd/> . The target date for the FINAL APPROVAL of an electronic Thesis or Dissertation to the Graduate School for graduating the semester of that submission is FIVE working days prior to the first day of classes for the next semester. Be aware that a submission via ProQuest does not mean that the document has been ACCEPTED. The review process is interactive and final approval can take anywhere from a few hours to weeks, depending upon the extent of the necessary revisions and how diligent the author is when making the necessary revisions. *Graduation on the semester of the electronic submission is only guaranteed if the document is APPROVED on or before the target date for that semester.*

The student is also required to provide the Department with a hardbound copy of the final thesis. By tradition, the student also provides a hardbound copy for their Major Professor and to other members of the Guidance Committee upon request.

11. Final Certification

In order to graduate, you must:

1. First submit an *Application for Graduation* (<https://reg.msu.edu/StuForms/GradApp/GradApp.aspx>) with the Office of the Registrar, RM 150 Administration Building, very early in the semester of your intended graduation.
2. Obtain a *Thesis/Dissertation Submission Packet* of forms from the Graduate School (<http://grad.msu.edu/etd/>), and take note of the various deadlines, which are also provided by the Graduate School.
3. A *Final Certification* form will be sent to our departmental office by the Degree Certification Office. Our graduate secretary will scrutinize your records to verify your completion of the requirements.

Before leaving MSU, you should check with the Degree Certification Office to make certain that your credentials are in order. Their records are used to determine completion of the degree requirements. Discrepancies may delay your degree.

We salute the successful completion of all requirements!

H. CHECKLIST AND RECOMMENDED TIMETABLE FOR MASTER'S OF SCIENCE DEGREE

Year 1

- _____ Meet with your First Year Advisory Committee to determine which courses you should take the first semester and beyond.
- _____ Complete PLB 801 and PLB 804
- _____ Complete EHS Hazardous Waste Safety Training (before classes begin in the first semester of your academic program)
- _____ Take courses advised by your First Year Advisory Committee or Major Professor
- _____ Designate Major Professor (this should be done before the end of the first semester in the Master's program).
- _____ Form Guidance Committee (by the end of the second semester)
- _____ File *Report of the Guidance Committee* (this is due before the end of the second semester in the Master's program). This report includes a list of all the courses that will be required for the student to complete their degree. In addition to the requirements below, the student's guidance committee determines what course are necessary and appropriate for the student.

Year 2

- _____ Finish other Course Requirements, including
 - _____ Complete workshop series offered by the Graduate School: *Responsible Conduct of Research* (non-credit).
 - _____ 30 credits at 400 level or above.
 - _____ At least 16 of the 30 credits must be at the 800-900 level
 - _____ 4 to 10 credits of PLB 899 (Plan A only)
 - _____ All remaining courses listed in student's *Report of Guidance Committee*
- _____ Fulfill Teaching Requirement (one course)

Year 3 (or sooner)

- _____ Submit *Application for Graduation* to the University.
- _____ Obtain *Thesis/Dissertation Submission Packet* (Plan A only)

- _____ Complete Thesis, get approval from Major Professor to distribute Thesis to Guidance Committee (Plan A only). The thesis must be distributed to the Guidance Committee at least two weeks prior to the final examination.

- _____ Present a publicly announced Master's Thesis Seminar to the department (Plan A only) - no credit. **You must notify the graduate secretary two weeks before the seminar.** The graduate secretary will announce the seminar to the department by email.

- _____ Schedule and pass Final Examination (required for both Plan A and Plan B), file paperwork

- _____ Submit final Thesis and Abstract with all necessary corrections, with the signature of the Major Professor and with all the forms required by the Graduate School (Plan A only)

- _____ Final Certification

I. DETAILED DEGREE REQUIREMENTS - Ph.D.

The student must take any courses (up to two) that the Graduate Admissions Committee may require to insure they have an adequate background in Plant Biology. See details in Section III.C. The student will be notified of these specific requirements prior to the beginning of classes in their first fall semester in the graduate program.

1. Credit Requirements

The minimum credit requirements for the University are 24 credits of doctoral dissertation research (PLB 999) in addition to credit for all the courses specified by the Student's Guidance Committee. The maximum number of doctoral dissertation research credits (PLB 999) a student can enroll in is 36 credits. In practice this means that you should enroll in the minimum number of PLB 999 credits that you need to meet your minimum enrollment requirements each term, provide that you are on track get 24 credits of PLB 999 before you graduate.

2. Residency Requirement

Each student must meet a residency requirement, which is two consecutive semesters, involving the completion of at least six credits of graduate work each semester.

3. Time Limits

To remain in good standing, the Department of Plant Biology requires students to complete their Comprehensive Exams before the end of the first semester of their third year in Doctoral Program. All requirements for the Doctoral Degree should be completed within five years. The Department Chairperson may, in some cases, extend the time limits for a student to complete the requirements. The University time limits dictate that the Comprehensive Exams must be passed within five years and all remaining requirements for the degree passed within eight years from the time that the first course taken at MSU that is a part of the student's doctoral plan. Thus, the first course taken "starts the clock" for university time limits. In rare cases, when an extension beyond eight years is approved by the Guidance Committee, the Department Chairperson, the Dean of Natural Science and the Dean of the Graduate School, the doctoral Comprehensive Exams must be re-taken and passed again.

4. Teaching Requirement

In addition to the seminar requirements, each Doctoral student must gain teaching experience by participating in the teaching of at least one course. Further details about the teaching requirement are given in section III.E. Remember that students must participate in the University TA orientation program before they can teach. International students must score a minimum of a 50 on MSU's SPEAK test.

5. Coursework and Public Seminars

In addition to routine attendance at the Plant Biology seminar series, the following courses are required for the doctoral degree in Plant Biology:

PLB 801. Foundations of Plant Biology (3 credits)

PLB 804. Frontiers in Plant Biology (2 credits)

Complete workshop series offered by the Graduate School:

Responsible Conduct of Research (non-credit).

Additionally, the student is required to present two publicly announced departmental seminars for no credit. The first is the Thesis Proposal/Research in Progress Seminar, to be presented within three months of successfully completing the Comprehensive Examination. The second is the Dissertation Seminar, concerning his/her doctoral research and presented within the 12 months preceding the student's graduation. The Dissertation Seminar is considered part of the Final Examination (Dissertation defense). Each seminar must be announced to the department by email and notices must be posted around the building on the day of the seminar by the graduate secretary.

6. Comprehensive Examination

Important note: You must be enrolled at the time you take your Comprehensive Exam (both parts). The purpose is to determine whether the student has mastered the subject of plant biology and related fields, has a good understanding of the scientific method, and is prepared to do independent doctoral research. Passing the oral and written components of the comprehensive exam is necessary to become a Ph.D. candidate.

The student must notify the graduate secretary at least two weeks before you take the oral exam. The student should complete both exams before the end of the first semester of their 3rd year in the doctoral program. **Recommendation: To complete both exams on time, it is usually necessary to take the oral exam during the 4th semester.** Both the written and the oral exam are pass/fail. To pass either exam, the student must receive a passing vote by at least three fourths of the members of the Guidance Committee, with not more than one dissenting vote from among the MSU regular faculty members on the committee. The student must pass both the written and oral portions of the exam to pass the Comprehensive Examination. A student who fails either the written or oral examination will be given one opportunity to repeat the exam within six months of the Committee's determination that the student did not pass the first attempt.

Before the exam, the student should pick up paperwork from the Graduate Secretary. This will include a Post-hoc Questionnaire for the Guidance Committee that must be returned to the Graduate Secretary by the Major Professor.

1. **The oral exam** will come first, and it will focus on basic knowledge in plant biology and other fields relevant to the student's specialty. The oral examination will be

approximately three hours in length. The exam should be coursework-oriented and will encompass areas agreed upon with the committee.

If the student passes part 1, he/she will go on to part 2.

2. **The written part** of the exam will be a dissertation proposal. The exam must be completed by the end of the first semester of the third year in the program. The proposal must be submitted to the Guidance Committee at least two weeks in advance of the oral defense (see below).

The student can, and should, receive input from his or her guidance committee, from other students and from various other sources that may be helpful, to make the formal proposal as thorough, complete, concise and polished as possible. The dissertation proposal should be no longer than 15 pages (12 pt, single-spaced). The 15 page limit includes everything except the literature cited. The proposal must include adequate background, discussion of significance/importance of the proposed research, clearly stated objectives/goals/hypotheses, discussion preliminary data (if available), and explanation of the experimental design in adequate detail for the committee to judge the quality of the proposal. It is recommended that the student discuss discipline-specific formatting with your advisor and committee. These guidelines can be modified in consultation with your Guidance Committee.

There will be an oral defense of the dissertation proposal, in which the student will receive considerable feedback from their guidance committee. Once the committee signs off on this written portion of the exam, the comprehensive exam is formally passed.

By University rules, students must be registered during the semester in which the exam is administered. The date that the written portion of the exam is passed is the date on which the student officially passed the comprehensive exam.

To remain in good standing with the Plant Biology Department, doctoral students should complete the exams before the end of the first semester of their third year in the program. If that limit is exceeded, Graduate Director will consult with the student's Guidance Committee to investigate the circumstances.

If a student has not taken the exams before the end of the first semester of the third year in the program, they will receive a warning letter from the Department Chair that they absolutely must take the oral examination before the end of the third year in the doctoral program. Beyond that, the Department Chair can grant extensions of the time limit up to, but not exceeding the University time limit. If no extension is granted, a majority of the Guidance Committee, together with the Department Chairperson, shall inform the candidate by letter that the facilities of the Department will no longer be available for research or study and the student will be dismissed or asked to withdraw.

7. Dissertation and Abstract:

The dissertation must represent original research and make a significant contribution to knowledge in the field of plant biology. The Guidance Committee should approve the proposed research at the time of the written part of the comprehensive exam. Any changes made to that research plan must be approved by the Guidance Committee to avoid any confusion about the final content of the dissertation or the amount of work that it comprises. The dissertation must include an **abstract for a lay audience**. This abstract must precede the conventional abstract and the formatting requirements are identical for both abstracts.

The dissertation must be approved by the Student's Major Professor, and **considered to be in final form, before it is distributed to the Guidance Committee**. The unbound dissertation or a digital copy, as preferred by the committee members, should be **distributed at least two weeks prior to the Final Examination** to all committee members.

MSU only accepts electronic dissertations submitted via ProQuest. The instructions for electronic submissions are available from <http://grad.msu.edu/etd/>. The target date for the FINAL APPROVAL of an electronic Thesis or Dissertation to the Graduate School for graduating the semester of that submission is FIVE working days prior to the first day of classes for the next semester. Be aware that a submission via ProQuest does not mean that the document has been ACCEPTED. The review process is interactive and final approval can take anywhere from a few hours to weeks, depending upon the extent of the necessary revisions and how diligent the author is when making the necessary revisions. *Graduation on the semester of the electronic submission is only guaranteed if the document is APPROVED on or before the target date for that semester.*

8. Final Examination (Dissertation Defense):

Important note: You must be enrolled at the time you take your final exam. The final oral examination will be primarily in defense of the dissertation, but may include general knowledge as well. Details on the exam procedure are given in Section VI and will include a public presentation of the dissertation.

The final oral examination will be scheduled by the student. A minimum of three hours should be set aside for the exam and all members of the examining committee should participate during the entire period. Notice of the examination should be distributed by the graduate secretary at two weeks in advance so that interested faculty may attend.

For the Final Examination on the Dissertation the student should be prepared to review briefly:

1. Reasons for the study.
2. Methods used.
3. Important findings and their significance.
4. Unanswered problems suggested by the research.

To pass the defense, the student must be recommended for the degree by a positive vote by at least three fourths of the voting members, with not more than one dissenting vote from among the MSU regular faculty members on the committee. The decision of the Guidance Committee will be recorded on the "Record of Completion of Requirements for the Doctoral Degree".

The final examination must be scheduled not earlier than two weeks after the dissertation and abstract has been submitted to the Guidance Committee. The student must be registered during the semester in which the final oral examination is taken.

9. Finalizing the Dissertation

After the student has passed the final oral examination in defense of the dissertation, the student must incorporate any agreed-upon changes or corrections before presenting it to the Major Professor for final review and signature of the bookplate. MSU only accepts electronic dissertations submitted via ProQuest. The instructions for electronic submissions are available from <http://grad.msu.edu/etd/>. The target date for the FINAL APPROVAL of an electronic Thesis or Dissertation to the Graduate School for graduating the semester of that submission is FIVE working days prior to the first day of classes for the next semester. Be aware that a submission via ProQuest does not mean that the document has been ACCEPTED. The review process is interactive and final approval can take anywhere from a few hours to weeks, depending upon the extent of the necessary revisions and how diligent the author is when making the necessary revisions. *Graduation on the semester of the electronic submission is only guaranteed if the document is APPROVED on or before the target date for that semester.*

The student is also required to provide the Department with a hardbound copy of the final thesis. By tradition, the student also provides a hardbound copy for their Major Professor and to other members of the Guidance Committee upon request.

10. Final Certification

In order to graduate, you must:

1. Submit an *Application for Graduation* with the Office of the Registrar, RM 150 Administration Building, very early in the semester you intend to graduate.
2. Obtain a *Thesis/Dissertation Submission Packet* of forms from the Graduate School, and take note of the various deadlines, which are also provided by the Graduate School.
3. A *Final Certification* form will be sent to our departmental office by the Degree Certification Office. Our graduate secretary will scrutinize your records to verify your completion of the requirements. The "Final Certification" form lists the following: Guidance Committee members, date of passing Comprehensive Exam,

date of passing final examination, dates language requirements passed, and all courses with grades used for the degree. The course requirements will include all of those shown in GradPlan. Thus, it is important that you make certain that all information is placed and maintained in your departmental files. If everything appears to be in order, the Graduate Secretary will pass on the forms for further scrutiny by the College of Natural Science and the Graduate School.

4. Before leaving MSU, you should check with the Degree Certification Office to make certain that your credentials are in order. Their records are used to determine completion of the degree requirements. Discrepancies may delay you degree.
5. By University rule, you must complete the dissertation, and all the other requirements, within eight years of entering the doctoral program. The Department of Plant Biology expects doctoral students to finish all the requirements in five years, but the Department Chairperson can grant extensions up to, but not exceeding, the University time limit. Under appropriate circumstances, further extension of the University time limit can be granted but must be approved by the College and the Graduate School.

We salute your successful completion of all requirements!

J. CHECKLIST AND RECOMMENDED TIMETABLE FOR DOCTOR OF PHILOSOPHY DEGREE

Year 1

- _____ Meet with your First Year Advisory Committee to determine which courses you should take the first semester and beyond.
- _____ Complete EHS Hazardous Waste Safety Training (before classes begin in the first semester of your academic program)
- _____ Complete PLB 801 and PLB 804
- _____ Take courses stipulated by the Graduate Committee in your letter of admission to the University
- _____ Take courses advised by your First Year Advisory Committee or Major Professor
- _____ Designate Major Professor (this should be done before the end of the second semester in the doctoral program)
- _____ Form Guidance Committee (before the end of the first year in the doctoral program). The student should meet with their guidance committee on at least a yearly basis thereafter.

Year 2

- _____ File your coursework program in GradPlan (<https://grad.msu.edu/gradplan>). This should be done by the end of your second semester. This report includes a list of all the courses that will be required for the student to complete their degree. Beyond the requirements below, the student's guidance committee determines what course are necessary and appropriate for the student.
- _____ Finish course requirements (this may not be possible for all students before the end of the second year, but they should be finished as soon as reasonably possible).
- _____ Complete workshop series offered by the Graduate School: *Responsible Conduct of Research* (non-credit).
- _____ Pass all courses listed in student's *Report of Guidance Committee*

Year 3 and beyond

- _____ Pass Comprehensive Exam. This exam should be scheduled before the end of the first semester of the student's third year in the doctoral program. **You must notify the graduate secretary at least two weeks in advance of your oral exams.** The student must:
 - _____pass oral exam
 - _____pass written exam

- _____ Present publicly announced seminar involving the student's research proposal and/or research in progress (no credit). This should be done within 3 months of passing the Comprehensive Exam. You must notify the graduate secretary at least two weeks in advance of this seminar and it will be announced by email to the department.

- _____ Fulfill Teaching Requirement

- _____ Earn at least 24, but no more than 36 credits of Doctoral Dissertation Research (PLB 999)

- _____ Submit *Application for Graduation* to the University. This should be done near the beginning of the semester in which you intend to graduate, hopefully before the end of Year 5.

- _____ Obtain *Thesis/Dissertation Submission Packet* from the Grad School.

- _____ Notify the Graduate Secretary of the date and time of your defense **at least two weeks in advance.**

- _____ Complete Dissertation. Get approval from Major Professor to distribute Dissertation to Guidance Committee. The thesis must be distributed to the Guidance Committee at least two weeks prior to the Final Examination.

- _____ Present a publicly announced Dissertation Seminar to the department. The seminar must be announced to the department by email and must be posted around the building on the day of the seminar by the graduate secretary.

- _____ Pass Final Examination, file paperwork.

- _____ Turn in final Dissertation and Abstract with all necessary corrections and required forms, with the signature of the major professor

- _____ Final Certification.

IV. SELECTION OF THESIS/DISSERTATION ADVISOR

Graduate students are assigned a First Year Advisory Committee after they are accepted into our program. The First Year Advisor Committee will consist of the Graduate Director, two additional faculty from the student's research area, and a Peer Mentor, chosen from among the senior graduate students. The role of this committee is to guide the student in choosing coursework for the first and second semester, help coordinate rotations (if appropriate), and provide advice about successfully transitioning to graduate school. The committee will meet with entering students before classes begin in the fall, or shortly thereafter, once during the fall semester of their first year, and later during the first year as needed.

The graduate student should select their Major Professor within their first academic year in the program; this requires mutual consent between the professor and student, and many factors go into this important decision. It is the collective responsibility of our faculty to advise graduate students in their research and professional development. If the student has trouble finding a willing faculty member to serve as the Major Professor, he/she should consult the departmental Graduate Director and/or the Departmental Chair to help find a suitable match.

The Major Professor shall, with the help of the student's Guidance Committee, advise and mentor the student in his/her research and professional development.

The Major Professor should be a regular faculty member in the Department of Plant Biology at Michigan State. However, in some cases adjunct faculty will be given approval by the Department Chairperson to serve as Major Professor. Adjunct faculty must also be approved by the College and the Dean of the Graduate School. In exceptional cases, a Major Professor can be faculty member from outside the Department. In these instances, 50% of the guidance committee must be regular faculty members from the Department.

In cases where the major professor leaves MSU before the student completes his/her degree program the student should consult the Graduate Director and Departmental Chairperson to identify a suitable Major Professor. It is the joint responsibility of the student and the Departmental Chairperson to make arrangements for completion of the degree, and it requires mutual consent between the student and a Major Professor.

Graduate research, whether leading to a Master's Thesis or a Doctoral Dissertation, is usually related to the research interests of the Major Professor. A discussion with the Major Professor will often uncover unanswered problems of immediate interest. From these, an area of research develops.

The Major Professor, and the members of the Student's guidance committee, are officially recognized by the University with entry and approval in GradPlan (PhD students; <https://grad.msu.edu/gradplan>) or the submission of the *Report of the Guidance*

Committee (MS students). After submitting the Report of the Guidance Committee or filing in GradPlan, if the student desires a different Major Professor for any reason, the change should be requested as early as possible in the graduate training program. Any plans for changing to a different Major Professor should be discussed with the Graduate Director, the current Major Professor and the student's prospective Major Professor prior to initiation. Before relations with the Major Professor are severed, the student should be sure that another faculty member will serve in that capacity.

V. FORMATION OF THE GUIDANCE COMMITTEE

The Guidance Committee must be established within the student's first year in the program. The student's Guidance Committee is selected by the Major Professor together with the graduate student, subject to approval by the Graduate Director via GradPlan (<https://grad.msu.edu/gradplan>) for PhD students or the *Report of the Guidance Committee* for masters students. The members of the Guidance Committee are normally selected based upon research and professional expertise, so as to best advise the student in their proposed research and professional development. Changes in membership on the committee may be made by the student in concurrence with the Major Professor and Graduate Director. Any changes in committee membership must be approved via GradPlan. The Guidance Committee determines which courses will be required for the student, advises the student with regard to the research project, and administers the Comprehensive (Doctoral only) and Final Examinations (Master's and Doctoral).

Guidance Committees are composed of a minimum of three (in the case of a Master's Committee) or four (in the case of a Doctoral Committee) of Michigan State University regular faculty members, including the Major Professor. With the approval of the Graduate Director, an exception may be granted to allow an Emeritus faculty member to serve as one of the four required faculty members on a doctoral student's Guidance Committee; in addition, an Emeritus faculty member may continue to serve as chairperson of a Guidance Committee.

Special permission is required if you wish to have someone besides MSU tenure-stream faculty on your committee. Non-MSU scientists may not be the chairperson of the committee and the number of MSU tenure-stream faculty must be equal to or greater than the number of non-MSU scientists on all committees. There is a special process set up to approve these members, and you must follow this procedure. Current regulations can be found in the online Academic Programs section on "Planning a Doctoral Program and Appointment of A Guidance Committee." The process includes submitting letters of recommendation for the non-MSU person you wish to add and getting approval of the Dean of the College and Dean of the Graduate School. The process is a proxy for quality control that is normally part of a tenure-system hire.

Once designated, the committee must meet yearly with the student to review the student's progress.

Functions of the Guidance Committee include:

1. Assistance in planning the program of study and research
2. Formal approval of the program of the student (GradPlan or *Report of the Guidance Committee--Masters*)
3. Advising and assisting in the research process
4. Participation in the Comprehensive Exam (Ph.D. only) and Final Examination (both Master's and Ph.D.)

Frequent consultation with all committee members is essential, and the annual meeting with the entire committee is intended to be helpful. The Guidance Committee can provide the student with valuable aid regarding the selection of courses, planning, conducting, and interpretation of research, and many other things.

VI. THESIS/DISSERTATION DEFENSE AND FINAL ORAL EXAMINATION

Important note: You must be enrolled at the time you take any exam (Comprehensive Exams and defense exams).

A. Preparation for Oral Exams

The objectives of the oral examinations are (i) to enable the student to learn more about themselves and their abilities, (ii) to guide them toward the goals and high standards demanded of everyone in the proposed profession, and (iii) to measure the student's progress toward these goals and to determine whether the program is satisfactory.

It cannot be emphasized too strongly that preparation for these examinations must be thorough. There are many ways to prepare for this exam. The student's Major Professor and members of the student's Guidance Committee have been through the process and can offer advice on preparation and what to expect. Senior graduate students may also be a source of valuable information about the exams. Through review of course subject matter and synthesis of this information to construct total concepts, the student should arrive at the proper level of competence and confidence. At the same time, the student will gain new insights and understanding of their major discipline and of the scientific method.

Remember – the committee wants to help the student!

B. Final Examination for Master's Degree

The Guidance Committee serves as the examination committee for both Plan A and Plan B examinations. Students in Plan A are required to pass an oral examination in defense of the thesis and coursework. For students in Plan B, the examination format is decided by the Guidance Committee and usually it covers course work. For both Plan A and Plan B Final Examinations, a majority affirmative vote of the Guidance Committee constitutes a pass.

The examination must be scheduled no later than the tenth Friday of the semester in which graduation is anticipated. At the discretion of the committee, the examination may be open to members of the academic community.

The Final Examination must be scheduled two weeks prior to the examination date, by which time the Department Graduate Secretary must be notified of the date and place of the examination. Likewise, at that time a copy of the thesis, previously approved by the Major Professor, must be distributed to the Guidance Committee.

As a part of the Plan A Final Examination, the graduate student will present the results of their Master Thesis in a publicly announced seminar open to the community.

The Plan A Master's Final Examination will involve defense of the Master's Thesis as well as examination of coursework knowledge of the field. With regard to the thesis, the student should be well prepared to review briefly:

1. Reasons for the study.
2. Methods used.
3. Important finding and their significance relative to published work in the field.
4. Unanswered problems suggested by the research.

The decision of the Guidance Committee will be recorded for the M.S. degree on the “Record of Completion of Requirements for the Master’s Degree.”

The Major Professor and members of the student's Guidance Committee can offer further advice on preparation and what to expect, as can fellow graduate students. To illustrate the standards the department requires, past Theses are available for student perusal in Room 148 Plant Biology Laboratory. Bear in mind that a Master's Thesis must contain original research, be written in a scholarly manner, and contribute to the body of knowledge of the discipline. Since science is continually evolving, the more recent theses will be more representative of the standards that must be met.

D. Final Examination for Dissertation

The student's Guidance Committee serves as the Final Examination Committee. The final oral examination will be primarily in defense of the written Dissertation, but it may include general knowledge as well.

The final examination must be scheduled a minimum of two weeks after the Dissertation and Abstract have been submitted to the Guidance Committee. The student must be registered during the semester in which the final oral examination is taken.

The final oral examination will be scheduled after the student has established a time (usually 3 hours) when all members of the Guidance Committee can be present during the entire period. Notice of the examination should be distributed by the Graduate Secretary two weeks in advance so that interested faculty may attend. Other faculty members of the Department who attend may observe the examination but will not enter into the final decision of performance.

As part of the Dissertation Final Examination, the graduate student will present the results of their Dissertation in a publicly announced seminar open to the community.

For the final examination on the Dissertation the student should be well prepared to review briefly:

1. Reasons for the study.
2. Methods used.
3. Important findings and their significance relative to published work in the field.
4. Unanswered problems suggested by the research.

To pass, the student must be recommended for the degree by a positive vote by at least three fourths of the voting members, with not more than one dissenting vote from among the MSU regular faculty members on the committee. The decision of the Guidance Committee will be recorded on the "Record of Completion of Requirements for the Doctoral Degree".

The student's Major Professor and members of the student's Guidance Committee can offer further advice on preparation and on what to expect, as can recent graduates. To illustrate the standards the department requires, past Dissertations are available for perusal in Room 148 Plant Biology Laboratory. Bear in mind that a Dissertation must contain original research, be written in a scholarly manner, and significantly contribute to the body of knowledge of the discipline. Since science is continually evolving, the more recent Dissertations will be more representative of the standards that must be met.

VII. DEPARTMENTAL POLICIES: ACADEMIC PERFORMANCE

When a student is admitted into our graduate programs it is with the full expectation that they will not only survive but thrive academically as developing scientists and scholars. However, sometimes a student's academic performance does not meet the expectations that the student and our faculty have. This sections deals with problems and standards for academic performance.

A 3.0 cumulative grade point average is the minimum University standard. Research credits are not considered in determining the grade point average. Attainment of the minimum GPA, however, is an insufficient indicator of potential for success in other aspects of the program and in the field. The student's Guidance Committee is responsible for evaluation the student's competency and rate of progress.

To assist in evaluation of progress, each student is required to file an Annual Progress Report each summer. The Major Professor must sign the progress report and may wish to supply written comments at that time. The student can then add more written comments in response to the comments of the Major Professor. A copy of the progress report and evaluation will be kept in the student's department file, and will be periodically evaluated by various officials including members of the Graduate Committee, the Student's Guidance Committee, the Associate Chair, and the Department Chair. The student will meet annually with the Director of Graduate Studies in Plant Biology to discuss his/her Annual Progress Report and his/her progress towards the advanced degree.

The accumulation of grades below 3.0 in more than three courses of three or more credits or "deferred" in more than three courses of three or more credits at any given time, or a combination of the above in excess of four courses automatically removes the student from candidacy for the degree. Until the official program of study is filed, all courses on the student's record are considered part of the required program.

To remain in good standing the student also needs to follow Departmental as well as University rules for completing their degree requirements in a timely manner. If a student is not making timely and reasonable progress towards their degree in terms of completing coursework or taking the necessary exams, within 30 days following their annual meeting with the Director of Graduate Studies, the student should receive a letter from the Department Chair specifying the deficiencies and describing the expected steps, with a timetable, to get back in good standing. There will be a space on this letter for the student to respond in writing if they disagree either with the deficiencies listed or with the steps and timetable for remediation. Their response will then become a part of the student's file.

It is a disservice to permit a student to continue toward the advanced degree without the necessary qualifications for retention, including a high level of motivation, commitment, and aptitude. Judgment regarding retention is made by the student's Major

Professor and Guidance Committee. To facilitate a decision, the committee may consult the Graduate Director and the Department Chairperson. If a majority of the Guidance Committee decides that a student lacks such standards, he/she may be asked to withdraw or be dismissed according to the procedures as defined in the Graduate Student Rights and Responsibilities Document which can be obtained at <http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities>

The student has a right to receive a warning when academic performance is judged to be unsatisfactory (GSRR 2.4.8.1 and 2.4.8.2). The student has a right to access their educational records including the academic file that the department keeps on them (GSRR 3.2.3). Requests to view and/or copy the file should be made through the departmental Graduate Secretary.

Comprehensive examinations and Final Examinations for the Master's and Doctoral Degrees are pass/fail. A student who fails either the written or oral Comprehensive Examination, Master's Defense or Dissertation Defense will be given one opportunity to repeat the exam within three months to six months, as determined by the Guidance Committee. If the student fails one of those exams a second time, they will be dismissed from the program.

Further information on rights and responsibilities of graduate students can be found at the website of the Office of the Ombudsman, <https://ombud.msu.edu/>

VIII. DEPARTMENTAL POLICIES: INTEGRITY AND SAFETY IN RESEARCH AND CREATIVE ACTIVITIES

Each faculty advisor and graduate student should be aware of the document *Guidelines for Integrity in Research and Creative Activities* (<http://grad.msu.edu/sites/default/files/content/researchintegrity/guidelines.pdf>).

Graduate students must complete the Office of Radiation Chemical and Biological Safety (EHS) Hazardous Waste Safety Training before classes begin in the first semester of their academic program. They must also complete a refresher course each year. Information on safety training and regulations can be found at: <http://www.ehs.msu.edu/>

Further Safety Training may be required by the particular lab that the student does research in, whether on a rotation or as a regular member of the laboratory. If unsure, the student should ask the faculty member in charge of the lab as to what additional safety training is required.

Consideration of scientific ethics and integrity is a part of certain courses within the required curriculum, such as PLB 801 and PLB 804, and the workshop series offered by the Graduate School: *Responsible Conduct of Research*.

Criteria for dismissal due to unethical or dishonest behavior is described in *Guidelines for Integrity in Research and Creative Activities* (<http://grad.msu.edu/sites/default/files/content/researchintegrity/guidelines.pdf>)

Students and faculty should be aware that the Academic Council and Academic Senate approved a revision of the Integrity of Scholarship and Grades Policy. This document should be consulted when revising the department/unit policy on penalty grades and other issues related to academic dishonesty. <https://msu.edu/unit/ombud/academic-integrity/>

IX. GRADUATE STUDENT ACADEMIC GRIEVANCE HEARING PROCEDURES FOR THE DEPARTMENT OF PLANT BIOLOGY

Each right of an individual places a reciprocal duty upon others: the duty to permit the individual to exercise the right. The student, as a member of the academic community, has both rights and duties. Within that community, the student's most essential right is the right to learn. The University has a duty to provide for the student those privileges, opportunities, and protections which best promote the learning process in all its aspects. The student also has duties to other members of the academic community, the most important of which is to refrain from interference with those rights of others which are equally essential to the purposes and processes of the University. (GSRR Article 1.2)

The *Michigan State University Student Rights and Responsibilities (SRR)* and the *Graduate Student Rights and Responsibilities (GSRR)* documents establish the rights and responsibilities of MSU students and prescribe procedures to resolve allegations of violations of those rights through formal grievance hearings. In accordance with the SRR and the GSRR, the Department of Plant Biology (PLB) has established the following Hearing Board procedures for adjudicating graduate student academic grievances and complaints. (See GSRR 5.4.)

I. JURISDICTION OF THE DEPARTMENT OF PLANT BIOLOGY HEARING BOARD:

A. The Hearing Board serves as the initial Hearing Board for academic grievance hearings involving graduate students who allege violations of academic rights or seek to contest an allegation of academic misconduct (academic dishonesty, violations of professional standards or falsifying admission and academic records). (See GSRR 2.3 and 5.1.1.)

B. Students may not request an academic grievance hearing based on an allegation of incompetent instruction. (See GSRR 2.2.2)

II. COMPOSITION OF THE HEARING BOARD:

A. The Department of Plant Biology (PLB) Hearing Board pool shall consist of all regular faculty and current graduate students. Hearing Board members serve one year terms with reappointment possible. The Hearing Board pool should include both faculty and graduate students. (See GSRR 5.1.2 and 5.1.6.)

B. The Chair of the Hearing Board shall be the PLB Associate Chairperson who shall vote only in the event of a tie. In addition to the Chair, the Hearing Board shall consist of three faculty members (the members of the PLB Graduate Committee except the Graduate Director) and three graduate students (the student members of the PLB Department Advisory Committee (DAC), the PLB Graduate Committee, and the President of the PLB Graduate Student Organization), constituting an equal number of voting graduate students and faculty. (See GSRR 5.1.2, and 5.1.5.)

C. The Department of Plant Biology will train hearing board members about these procedures and the applicable sections of the GSRR. (See GSRR 5.1.3.)

III. REFERRAL TO THE HEARING BOARD:

A. After consulting with the instructor/advisor and PLB Graduate Director, graduate students who remain dissatisfied with their attempt to resolve an allegation of a violation of student academic rights or an allegation of academic misconduct (academic dishonesty, violations of professional standards or falsifying admission and academic records) may request an academic grievance hearing. When appropriate, the Department Chair, in consultation with the Dean, may waive jurisdiction and refer the request for an initial hearing to the College Hearing Board. (See GSRR 5.3.6.2.)

B. At any time in the grievance process, either party may consult with the University Ombudsperson. (See GSRR 5.3.2.)

C. In cases of ambiguous jurisdiction, the Dean of The Graduate School will select the appropriate Hearing Board for cases involving graduate students. (See GSRR 5.3.5.)

D. Generally, the deadline for submitting the written request for a hearing is the middle of the next semester in which the student is enrolled (including Summer). In cases in which a student seeks to contest an allegation of academic misconduct and the student's dean has called for an academic disciplinary hearing, the student has **10** class days to request an academic grievance to contest the allegation. (See GSRR 5.3.6.1 and 5.5.2.2.)

E. If either the student (the complainant) or the respondent (usually, the instructor or an administrator) is absent from the university during that semester, or if other appropriate reasons emerge, the Hearing Board may grant an extension of this deadline. If the university no longer employs the respondent before the grievance hearing commences, the hearing may proceed. (See GSRR 5.4.9.)

F. A written request for an academic grievance hearing must (1) specify the specific bases for the grievance, including the alleged violation(s), (2) identify the individual against whom the grievance is filed (the respondent) and (3) state the desired redress. Anonymous grievances will not be accepted. (See GSRR 5.1 and 5.3.6.)

IV. PRE-HEARING PROCEDURES

A. After receiving a graduate student's written request for a hearing, the Chair of the Department will promptly refer the grievance to the Chair of the Hearing Board. (See GSRR 5.3.2, 5.4.3.)

B. Within **5** class days, the Chair of the Hearing Board will:

1. forward the request for a hearing to the respondent and ask for a written response;
2. send the names of the Hearing Board members to both parties and, to avoid conflicts of interest between the two parties and the Hearing Board members, request written challenges, if any, within **3** class days of this notification. In addition to conflict of interest challenges, either party can challenge two hearing board members without cause (GSRR 5.1.7.c);
3. rule promptly on any challenges, impanel a Hearing Board and send each party the names of the Hearing Board members. If the Chair of the Hearing Board is the

subject of a challenge, the challenge shall be filed with the Dean of the College, or a designee (See GSRR 5.1.7.). Decisions by the Hearing Board chair or the College Dean (or designee) on conflict of interest challenges are final;

4. send the Hearing Board members a copy of the request for a hearing and the respondent's written response, and send all parties a copy of these procedures.

C. Within **5** class days of being established, the Hearing Board shall review the request, and, after considering all requested and submitted information:

1. accept the request, in full or in part, and promptly schedule a hearing.
2. reject the request and provide a written explanation to appropriate parties; e.g., lack of jurisdiction. (The student may appeal this decision.)
3. the GSRR allows the hearing board to invite the two parties to meet with the Hearing Board in an informal session to try to resolve the matter. Such a meeting does not preclude a later hearing. However, by the time a grievance is requested all informal methods of conflict resolution should have been exhausted so this option is rarely used. (See GSRR 5.4.6.)

D. If the Hearing Board calls for a hearing, the Chair of the Hearing Board shall promptly negotiate a hearing date, schedule an additional meeting only for the Hearing Board should additional deliberations on the findings become necessary, and request a written response to the grievance from the respondent.

E. At least **5** class days before the scheduled hearing, the Chair of the Hearing Board shall notify the respondent and the complainant in writing of the (1) time, date, and place of the hearing; (2) the names of the parties to the grievance; (3) a copy of the hearing request and the respondent's reply; and (4) the names of the Hearing Board members after any challenges. (See GSRR 5.4.7.)

F. At least **3** class days before the scheduled hearing, the parties must notify the Chair of the Hearing Board the names of their witnesses and advisor, if any, and request permission for the advisor to have voice at the hearing. The chair may grant or deny this request. The Chair will promptly forward the names given by the complainant to the respondent and vice versa. (See GSRR 5.4.7.1.)

G. The Chair of the Hearing Board may accept written statements from either party's witnesses at least **3** class days before the hearing. (See GSRR 5.4.9.)

H. In unusual circumstances and in lieu of a personal appearance, either party may request permission to submit a written statement to the Hearing Board or request permission to participate in the hearing through an electronic communication channel. Written statements must be submitted to the Hearing Board at least **3** class days before the scheduled hearing. (See GSRR 5.4.9c.)

I. Either party to the grievance hearing may request a postponement of the hearing. The Hearing Board may either grant or deny the request. (See GSRR 5.4.8.)

J. At its discretion, the Hearing Board may set a reasonable time limit for each party to present its case, and the Chair of the Hearing Board must inform the parties of such a time limit in the written notification of the hearing.

K. Hearings are closed unless the student requests an open hearing, which would be open to all members of the MSU community. The Hearing Board may close an open hearing to protect the confidentiality of information or to maintain order. (See GSRR 5.4.10.4.)

L. Members of the Hearing Board are expected to respect the confidentiality of the hearing process. (See GSRR 5.4.10.4. and 5.4.11.)

V. HEARING PROCEDURES:

A. The Hearing will proceed as follows:

1. Introductory remarks by the Chair of the Hearing Board: The Chair of the Hearing Board introduces hearing panel members, the complainant, the respondent and advisors, if any. The Chair reviews the hearing procedures, including announced time restraints for presentations by each party and the witnesses, and informs the parties if their advisors may have a voice in the hearings and if the proceedings are being recorded. Witnesses shall be excluded from the proceedings except when testifying. The Chair also explains:
 - In academic grievance hearings in which a graduate student alleges a violation of academic rights, the student bears the burden of proof.
 - In hearings in which a graduate student seeks to contest allegations of academic misconduct, the instructor bears the burden of proof.
 - All Hearing Board decisions must be reached by a majority of the Hearing Board, based on a "clear and convincing evidence." (See GSRR 8.1.18.)(See GSRR 5.4.10.1 and 8.1.18.) For various other definitions, see GSRR Article 8.)
2. If the complainant fails to appear in person or via an electronic channel at a scheduled hearing, the Hearing Board may either postpone the hearing or dismiss the case for demonstrated cause. (See GSRR 5.4.9a.)
3. If the respondent fails to appear in person or via an electronic channel at a scheduled hearing, the Hearing Board may postpone the hearing or, only in unusual circumstances, hear the case in his or her absence. (See GSRR 5.4.9-b.)
4. If the respondent is absent from the University during the semester of the grievance hearing or no longer employed by the University before the grievance procedure concludes, the hearing process may still proceed. (See GSRR 5.3.6.1.)
5. To assure orderly questioning, the Chair of the Hearing Board will recognize individuals before they speak. All parties have a right to speak without interruption. Each party has a right to question the other party and to rebut any oral or written statements submitted to the Hearing Board. (See GSRR 5.4.10.2.)
6. Presentation by the Complainant: The Chair recognizes the complainant to present without interruption any statements relevant to the complainant's case, including the redress sought. The Chair then recognizes questions directed at the complainant by the Hearing Board, the respondent and the respondent's advisor, if any.
7. Presentation by the Complainant's Witnesses: The Chair recognizes the complainant's witnesses, if any, to present, without interruption, any statement directly relevant to the complainant's case. The Chair then recognizes questions directed at the witnesses by the Hearing Board, the respondent, and the respondent's advisor, if any.
8. Presentation by the Respondent: The Chair recognizes the respondent to present without interruption any statements relevant to the respondent's case. The Chair

then recognizes questions directed at the respondent by the Hearing Board, the complainant, and the complainant's advisor, if any.

9. Presentation by the Respondent's Witnesses: The Chair recognizes the respondent's witnesses, if any, to present, without interruption, and statement directly relevant to the respondent's case. The Chair then recognizes questions directed at the witnesses by the Hearing Board, the complainant, and the complainant's advisor, if any.
10. Rebuttal and Closing Statement by Complainant: The complainant refutes statements by the respondent, the respondent's witnesses and advisor, if any, and presents a final summary statement.
11. Rebuttal and Closing Statement by Respondent: The respondent refutes statements by the complainant, the complainant's witnesses and advisor, if any, and presents a final summary statement.
12. Final questions by the Hearing Board: The Hearing Board asks questions of any of the participants in the hearing.

VI. POST-HEARING PROCEDURES

A. Deliberation:

After all evidence has been presented, with full opportunity for explanations, questions and rebuttal, the Chair of the Hearing Board shall excuse all parties to the grievance and convene the Hearing Board to determine its findings in executive session. When possible, deliberations should take place directly following the hearing and/or at the previously scheduled follow-up meeting. (See Section IV.D above.)

B. Decision:

1. In grievance (non-disciplinary) hearings involving graduate students in which a majority of the Hearing Board finds, based on "clear and convincing evidence," that a violation of the student's academic rights has occurred and that redress is possible, it shall recommend an appropriate remedy to the Department Chair or School Director. Upon receiving the Hearing Board's recommendation, the Department Chair or School Director shall implement an appropriate remedy, in consultation with the Hearing Board, within **3** class days. If the Hearing Board finds that no violation of academic rights has occurred, it shall so inform the Chair or Director. The Chair of the Hearing Board shall promptly forward copies of the final decision to parties and the University Ombudsperson. (See GSRR 5.4.11.)

2. In grievance (non-disciplinary) hearings involving graduate students in which the Hearing Board serves as the initial hearing body to adjudicate an allegation of academic dishonesty and, based on "clear and convincing evidence," the Hearing Board finds for the student, the Hearing Board shall recommend to the Department Chair or School Director that the penalty grade be removed, the Academic Dishonesty Report be removed from the student's records and a "good faith judgment" of the student's academic performance in the course take place. If the Hearing Board finds for the instructor, the penalty grade shall stand and the Academic Dishonesty Report regarding the allegation will remain on file, pending an appeal, if any to the College Hearing Board within **5** class days of the Hearing Board's decision. If an academic disciplinary hearing is pending, and the Hearing Board decides for the instructor, the graduate student's disciplinary hearing before either the College Hearing Board or the Dean of The Graduate School would promptly follow, pending an appeal, if any, within **5** class days. (See GSRR 5.5.2.2 and 5.4.12.3)

C. Written Report:

The Chair of the Hearing Board shall prepare a written report of the Hearing Board's

findings, including recommended redress or sanctions for the complainant, if applicable, and forward a copy of the decision to the appropriate unit administrator within **3** class days of the hearing. The report shall indicate the rationale for the decision and the major elements of evidence, or lack thereof, that support the Hearing Board's decision. The administrator, in consultation with the Hearing Board, shall then implement an appropriate remedy. The report also should inform the parties of the right to appeal within **5** class days following notice of the decision, or **5** class days if an academic disciplinary hearing is pending. The Chair shall forward copies of the Hearing Board's report and the administrator's redress, if applicable, to the parties involved, the responsible administrators, the University Ombudsperson and the Dean of The Graduate School. All recipients must respect the confidentiality of the report and of the hearing board's deliberations resulting in a decision. (See GSRR 5.4.12 and 5.5.2.2)

VII. APPEAL OF THE HEARING BOARD DECISION:

A. Either party may appeal a decision by the Hearing Board to the College Hearing Board for cases involving (1) academic grievances alleging violations of student rights and (2) alleged violations of regulations involving academic misconduct (academic dishonesty, professional standards or falsification of admission and academic records.) (See GSRR 5.4.12.)

B. All appeals must be in writing, signed and submitted to the Chair of the College Hearing Board within **5** class days following notification of the Hearing Board's decision. While under appeal, the original decision of the Hearing Board will be held in abeyance. (See GSRR 5.4.12, 5.4.12.2 and 5.4.12.3.)

C. A request for an appeal of a Hearing Board decision to the College Hearing Board must allege, in sufficient particularity to justify a hearing that the initial Hearing Board failed to follow applicable procedures for adjudicating the hearing or that findings of the Hearing Board were not supported by "clear and convincing evidence." The request also must include the redress sought. Presentation of new evidence normally will be inappropriate. (See GSRR 5.4.12.1, 5.4.12.2 and 5.4.12.4.)

VIII. RECONSIDERATION:

If new evidence should arise, either party to a hearing may request the appropriate Hearing Board to reconsider the case within **30** days upon receipt of the hearing outcome. The written request for reconsideration is to be sent to the Chair of the Hearing Board, who shall promptly convene the Hearing Board to review the new material and render a decision on a new hearing. (See GSRR 5.4.13.)

IX. FILE COPY:

The Chair of the Department shall file a copy of these procedures with the Office of the Ombudsperson and with the Dean of The Graduate School. (See GSRR 5.4.1.)

Approved by Faculty (19 Nov 2015)

X. WORK RELATED POLICIES

A. GRADUATE ASSISTANTSHIPS

1. The University wide criteria for awarding, renewing and terminating graduate Teaching Assistants, including length of eligibility, and the process used to evaluate the students' performance can be found in the MSU/GEU Contract:
<https://hr.msu.edu/contracts/documents/GEU2015-2019.pdf> With regard to Teaching Assistants, the policies below are subservient to new contract agreements that may be posted in the above website in the future. **There is an updated contract that has not been released as of this printing, but the above link will be updated in Fall 2015.**
2. The rights and responsibilities of Teaching Assistants, health insurance options, and salary criteria can also be found under the current version of the contract between MSU and the GEU.
3. Plant Biology Departmental policies for Maintenance/Termination of Assistantships are as follows:

Graduate assistants may be on a $\frac{1}{4}$ (10 hours per week), $\frac{1}{2}$ (20 hours per week) or $\frac{3}{4}$ (30 hours per week) time basis. Assistantship appointments may be for one semester, for one academic year, or for one calendar year. The stipend, activities, and enrollment are proportional to the percent of time designated by the assistantship. As of April 12, 2005, assistantships, whether established by use of general university or research contract funds were at three levels: Level-1- Assistants with B.S. (or equivalent degree) and no graduate experience; Level 2- Assistants with M.S. (or equivalent degree) and/or one year of graduate experience; Senior Level – Assistants with M.S. (or equivalent degree), two years of graduate experience, and successful completion of his/her Comprehensive Exam. An increase in stipend may accompany an increase in level. Tuition was waived for up to nine credits in the Fall and Spring Semesters (four credits in Summer). Also, all matriculation fees were waived. These guidelines could change in the future.

Advancement: New Teaching Assistants will be hired at Level 1. After two regular semesters, TAs will be advanced to Level 2. TAs will be advanced to Level 3 after six semesters of teaching or after passing their comprehensive exams, whichever comes first.

The minimum course credits required to retain an Assistantship are shown in the table below, but this changes frequently, so it is a good idea to check with the Graduate Secretary if you have questions.

| Assistantship Appointment | | University Minimum Credit Enrollment | Federal (IRS) Minimum Enrollment per Semester |
|----------------------------------|-------------------|---|--|
| 1/4 time | Master's Students | 6 in Fall & Spring; 3 in Summer | 5 Credits |
| Doctoral Students | 3 (any semester) | 3 Credits | |
| PhDs who have passed comps | 1 (any semester) | 1 Credit | |
| 1/2 time | Master's Students | 6 in Fall & Spring; 3 in Summer | 5 Credits |
| Doctoral Students | 3 (any semester) | 3 Credits | |
| PhDs who have passed comps | 1 (any semester) | 1 Credits | |
| 3/4 time | Master's Students | 3 (any semester) | 5 Credits |
| Doctoral Students | 3 (any semester) | 3 Credits | |
| PhDs who have passed comps | 1 (any semester) | 3 Credits | |

Graduate assistants are responsible to their Major Professor as well as to the assistantship supervisor, who are not always the same person. Therefore, responsibilities for the assistantship will vary. Enrollment in courses, credit load per semester, training activity, etc., should have prior approval of the Major Professor before registration occurs. Before departing on a vacation, or other leave, the student should clear their desires and plans with their Major Professor. All students, whether financially supported or not, should be actively engaged in research, literature reviews, or some other phase of program even during semester breaks. Keep in mind the fact that the graduate program is a “full-time” program.

Assistants who have teaching responsibilities are also responsible to the Instructors of the classes in which the student is assisting. Assignments are made, normally, at least two weeks before the beginning of the semester. As soon as the student receives a teaching assignment, they should check with the Instructor to learn what is expected of them. There is a University Orientation program offered prior to Fall semester. All assignments are expected to participate once prior to teaching in the Department (whether on an RA or a TA). The student is expected to be available during the entire semester of the appointment unless released by the Department Chairperson in consultation with the faculty member to whom the student is assigned. Fall semester is defined as beginning August 16 and ending December 31; Spring semester, January 1 to May 15, Summer semester, May 16 to August 15. The student may very well have to start preparing materials, plants, etc., for the next semester before the end of the current semester.

A student must meet the requirements for Academic Standards and Guidelines for Retention to retain their assistantships.

Any student who is accepted into the Department with financial support *and* chooses a faculty member in the Department of Plant Biology as their Thesis or Dissertation Advisor should have a reasonable expectation that such support will continue until they have completed their degree, provided they make reasonable progress towards completing all requirements. However, providing financial support for graduate students is the joint responsibility of the Department and of the faculty member with whom the student's research is conducted.

Departmental funds for the graduate Teaching and Research Assistantships are most useful if used to recruit outstanding students into our graduate program. Current Department Assistantship incumbents are reviewed by the Graduate Committee as a whole. Those desiring reappointment for the next year and who are otherwise well qualified by ability and maintenance of scholarship and who have not exceeded a three year tenure as Department Assistant (five years in the case of doctoral students) are recommended to the Department Chairperson for reappointment by March 15. Beyond this three or five year time limit, it is the responsibility of the faculty (with student involvement when possible) to provide support in the form of grants, fellowships, etc. In those cases where the Major Professor or student is unable to obtain other forms of support, the Major Professor should request from the Departmental Chairperson and the graduate committee the award of an additional semester or year of Assistantship support. Proof of reasonable effort to obtain extramural funds should be provided by the advisor and student, to be considered for funding after three or five years. Departmental Assistantship support may be provided at the beginning or during the graduate program.

By March 31 of each calendar year, the Department Chair will advise each graduate assistant in writing of one or more of the following:

1. That her/his Assistantship will be renewed for the following semester;
2. That the Assistantship will not be renewed.

If the Assistantship is not renewed, the reasons shall be indicated. One condition of renewal is that the student must indicate (by May 1, or as indicated in the appointment letter) her/his intention to return to accept the Assistantship for the next fall.

Termination of Appointment:

1. The Assistantship will terminate upon degree completion. A student who wishes to terminate an Assistantship prior to that time should notify the supervisor and Department office.
2. Substandard Performance: The Department may terminate a graduate Assistantship for substandard performance or inability to perform expected duties. Substandard performance may be brought to the attention of the

Department Chairperson by the Assistantship supervisor or by the normal annual review of Assistantship performance. Academic difficulty will result in a review of the student's overall situation by the Department.

3. Violations: The Department may also terminate an Assistantship in cases of violation of the General Student Regulations contained in the Student Rights and Responsibilities Document which can be obtained at <http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities/article-5-adjudication-of-cases-involving-graduate-student-rights-and-responsibilities> This action may be initiated by the Department Chairperson or by the student's Major Professor.
4. Budget Constraints: The Department may also terminate Assistantships for budgetary reasons. Should this be necessary, continuing Graduate Assistants will be given some priority over new appointees depending on their qualifications to perform the required activities.

B. GRADUATE ASSISTANT ILLNESS/INJURY/PREGNANCY LEAVE POLICY

A Graduate Assistant unable to fulfill the duties of his/her appointment because of illness or injury shall notify an administrator of his/her major unit as soon as circumstances permit. Similarly, a graduate assistant unable to fulfill the duties of her appointment because of pregnancy shall notify the administrator of her major unit as soon as circumstances permit.

During the illness, injury, or pregnancy, the major unit shall adjust (reduce, waive, or reschedule) the Graduate Assistant's duties as the Assistant's physical circumstances reasonably dictate. If total absence from duties becomes necessary, the major unit shall maintain the stipend of the appointment, provided the graduate assistant is still enrolled, for a period of two months, or to the end of the appointment period, or of the semester, whichever should occur first.

The Graduate Assistant shall have the right to return to the Assistantship, within the original terms of the appointment, at such time as he/she is able to reassume the duties of the position.

C. OUTSIDE WORK FOR PAY

The Assistantship represents an obligation for the student to perform various duties of benefit to the Department in return for financial assistance. It is assumed that these duties, in combination with the normal course of studies, will amount to a full-time load.

Outside work for Graduate Assistants is discouraged. Before beginning outside employment the assistant should discuss with the Assistantship supervisor the outside employment and how the Assistantship obligations will be fulfilled.

D. LANGUAGE REQUIREMENTS FOR INTERNATIONAL TAs

Foreign students who wish to hold Teaching Assistantships are required to meet higher English language standards than the minimum required for graduate study. Any appointment of a person who is not a native speaker of English shall be provisional upon the applicant providing scores on the TOEFL or English Language Center (ELC) exam which are sufficiently good that the ELC does not recommend further English language classes.

After admission to the University, all international Graduate Assistants are still required to demonstrate their mastery of spoken English to the satisfaction of the English Language Center by passing the SPEAK test. A minimum score of 50 or waiver by interview is required. International Graduate Assistants must also attend a required English Language workshop, which is usually held two or three weeks before the beginning of Fall semester. Inquire to the English Language Center for specific information about the tests. International students who are appointed as Graduate Assistants will receive information by mail regarding the required workshop. Further information can be obtained through *Academic Programs*
<https://reg.msu.edu/AcademicPrograms/>

XI. DEPARTMENTAL RESOURCES

The Graduate Student Lounge is currently located in room 240 Plant Biology Labs (PBL). See Jan McGowan in the room 138 for a key.

Mailboxes and bulletin boards are on the first floor of the PBL near the departmental office (room 166). They should be checked daily.

The graduate student listserve regularly distributes notices concerning funding opportunities, departmental activities, and other information of interest. Be sure that you are signed up by asking the Graduate Secretary.

Copier – A copier for use by Plant Biology students, faculty and staff is located in room 142 Plant Biology Labs. A copy code is needed to use copier. You can ask the main office or your major professor for their code..

Supplies – Paper, pencils, pens and other office supplies are available for faculty, staff, and graduate Teaching Assistants. Such supplies for other graduate students must be procured through book stores and/or procurement worked out with the student's Major Professor. Procedures for purchasing and charging supplies on or off campus to a student's Major Professor's account can be obtained by consulting with the bookkeeper in the office.

Computers – A student computer facility is available in room 137. A coordinator is in charge of the equipment in this room. DO NOT tamper with or LOAD programs on the hard drive!

Travel – All official travel requires a Travel Authorization form to be filled out prior to traveling. Financial support for travel of graduate students will be considered in categories of internal and external support. External support is from grants and contracts and will be at the discretion of the principal investigator. Internal support will be from MSU funds and requires approval of the Department Chairperson. Some travel funds are available from the Graduate School, the College of Natural Sciences, from certain graduate programs such as EEBB, or from the departmental Taylor Funds.

Students traveling abroad should visit the "Travel Smart" website (<http://grad.msu.edu/travel/>) before their trip. When students appointed as TAs or RAs travel outside the U.S. to conduct required thesis or dissertation research or to collaborate with investigators conducting research abroad, the department or research grant supporting the work will be required to pay for all needed vaccinations and or medications (e.g., anti-malarials) as determined by the MSU Travel Clinic. Students may include those costs in applications for funds from the Research Enhancement or Travel Grant programs administered by the Graduate School.

Graduate Awards - In recognition of graduate students whose research and/or teaching is considered meritorious by the Graduate Committee the following are awarded annually to commemorate the work of two outstanding members of our Department:

Ernest A. Bessey Award for Research – Ernest A. Bessey was born in 1877 in Ames, Iowa, the son of the distinguished plant biologist Dr. C.E. Bessey. He studied for his Ph.D. at the University of Halle, Germany, receiving this degree in 1904. He came to Michigan Agricultural College in 1910 where he served until his retirement in 1946. During his career at this University, he not only served as Head of the Department of Botany and Plant Pathology, but also became the first Graduate Dean, a post he held between 1930 and 1944. Dr. Bessey was cited in 1956 at the Centennial of the Botanical Society of America as one of the 50 living outstanding botanists.

William G. Fields Award for Teaching – Dr. Fields was born in 1933 near Waco, Texas, and died an untimely death in 1975. He attended the University of Texas and received his Ph.D. from Wayne State University in 1963. He served as Assistant Professor in the Department of Botany and Plant Pathology from 1966-72 and as Associate Professor thereafter. He taught numerous courses in mycology and fungal genetics and served in later years as Assistant Department Chairperson. His teaching was authoritative, contemporary and well received.

Paul Taylor Fund Awards- Each spring students may apply for funds for travel to meetings and/or travel to learn new research techniques. If need funds for travel related expenses out of this cycle, contact the Graduate Director.

Plant Biology Graduate Student Organization (GSO) – The objectives of the GSO are to promote communication to foster an understanding of departmental policies and procedures, and to define the role of graduate students in the Department. All graduate students in the Department of Plant Biology are members of GSO. The organization is in charge of the appointment of graduate student members on the departmental committees. The GSO also provides academic and social interaction among students and faculty within our Department. The club sponsors guest speakers, field trips, social events and other activities.

Keys – Appropriate keys may be obtained from the Department office. Some will require a deposit.

Cold and prep rooms – these rooms are for departmental use. Students should use the room located on their floor. All material must be labeled with the student's name, lab room number, and date.

Reserving rooms 52, 148, 168, 247, and mobile LCD projector – Contact the main office to schedule these rooms. The main office is located on the first floor of the building, room 166.

Telephone calls – For on-campus calls there is no charge. Campus phones are charged for each off-campus call and are not to be used for personal calls. For long distance calls, permission of the Major Professor should be secured first.

XI. UNIVERSITY RESOURCES

Campus mail service – designed to expedite the delivery of items pertaining to university business. It is not to be used for personal items.

Council of Graduate Students (COGS) Office is a valuable source of information regarding graduate student policies and opportunities. Their office is located at 313-316 Student Services Building, and their website is: <http://cogs.msu.edu/index.html>. This is the official graduate student organization at MSU. The primary objective of COGS is improvement of the academic, social, and economic position of graduate students at MSU. The organization has official delegates to the Graduate Council, the Academic Council and standing committees thereof, and several all-university and presidential committees. Through membership in these and other bodies, COGS participates in decisions on such matters as tuition and fees, the grading system, traffic regulations, academic and extracurricular programs of the university, graduate assistant stipends, improvements in on and off campus student living conditions, academic freedom and responsibilities, student representation in university government, and the selection of principal administrative officers.

Financial Aid - Recent information on scholarships and other financial aid can be obtained in the Financial Aid Office in the Administration Building. Graduate Assistants can use the services of the MSU Federal Credit Union to obtain loans to pay for tuition. COGS, in conjunction with the Financial Aids Office, offers loans to graduate students. Information can be obtained in the Financial Aid Office.

Graduate School—The graduate school office is located in room 118 Linton Hall. Their website, <http://grad.msu.edu/> is invaluable for providing information about graduate student rights, responsibilities and opportunities at Michigan State, as well as considerable information about professional development. The site includes lists of university deadlines, many important university forms and valuable handbooks.

University Ombudsperson--Conflicts, disagreements, and issues sometimes arise during the course of a graduate program. If you find yourself in this situation and have exhausted the internal resources for resolving the issue, you may contact the Office of the University Ombudsperson.

The Office of the University Ombudsperson provides assistance to students, faculty, and staff in resolving University-related concerns. Such concerns include: student-faculty conflicts; communication problems; concerns about the university climate; and questions about what options are available for handling a problem according to Michigan State University policy. The University Ombudsperson also provides information about available resources and student/faculty rights and responsibilities. The office operates as a confidential, independent, and neutral resource. It does not provide notice to the University - that is, it does not speak or hear for the University.

Contact the Ombudsperson at any point during an issue when a confidential conversation or source of information may be needed. The Ombudsperson will listen to your concerns,

give you information about university policies, help you evaluate the situation, and assist you in making plans to resolve the conflict.

Contact information:

Office of the University Ombudsperson
129 N. Kedzie Hall
(517) 353-8830
ombud@msu.edu
<https://www.msu.edu/unit/ombud/>

Parking permits – Information for permits can be obtained from the Department of Public Safety. Graduate Assistants may obtain parking permits by presenting a copy of their current appointment form. Students on fellowships of \$1,000 or more may also obtain a parking permit.

**XIII DEPARTMENT OF PLANT BIOLOGY EDUCATION/TRAINING PLAN
FOR
RESPONSIBLE CONDUCT OF RESEARCH AND SCHOLARSHIP FOR
GRADUATE STUDENTS**

Updated April 6, 2017

Training in the Responsible Conduct of Research is essential in the preparation of future scholars and professionals. An understanding of the issues concerning the conduct of research in an increasingly complex world has become critical in successfully navigating the research landscape. It is the Department's belief that this plan will provide a foundation for all graduate students, as well as others pursuing a career in research, and will offer the basic information to meet most, if not all, federal agency granting requirements.

Note that for some students additional training above the Department minimum may be necessary. Students who are supported by NSF, NIH, or USDA grants may be required to complete additional specific training; they must meet the timeline and content requirements of training for that grant. Students engaged in research involving human subjects or animal use must complete the Michigan State University training modules for those subjects before submitting IRB or IACUC approvals. These online modules may be completed as part of the CITI Modules Year 2 requirements below.

Compliance with these requirements will be monitored via the online SABA system (for online modules) and on annual reports of graduate students (for discussion-based training).

All students conducting research in the laboratories of Plant Biology faculty will receive training for Responsible Conduct of Research in the following areas:

1. Introduction to the Responsible Conduct of Research
2. Authorship
3. Plagiarism
4. Research Misconduct
5. Other topics deemed appropriate for individual students on a lab-by-lab basis, including topics such as Collaborative Research, Conflicts of Interest, Data Management, Mentoring, Peer Review, Financial Responsibility, Animal Care Training, Human Research Protection, and Rigor and Reproducibility.

Required training and certification:

Online CITI modules: (access via <https://ora.msu.edu/CITI-RCR-registration>)

Year 1 as required by the University:

- Introduction to the Responsible Conduct of Research
- Authorship
- Plagiarism
- Research Misconduct

Year 2 any *three* additional CITI modules from the following list:

- Collaborative Research
- Conflicts of Interest
- Data Management
- Financial Responsibility
- Peer Review
- Mentoring
- Rigor and Reproducibility

Compliance with the requirements for online modules is automatically tracked in the SABA system.

Discussion-based training:

Each student will be required to participate in at least three hours of discussion-based training each year. This training may occur in one-on-one meetings with their faculty advisor, during lab meetings, during the Responsible Conduct of Research Workshop Series sponsored by the Graduate School, or a combination of these options. These discussions should focus on the topics listed in items 1-5 above.

Every student (Master's Plan A and Plan B and PhD students) must have completed at least 6 hours of discussion-based training by the end of their second year. Refresher training may also be comprised of online courses beyond those required in Year 1 and 2.

Compliance will be documented in the annual reports of graduate students. Each student will be required to submit an explanation of how they received their discussion-based training (one-on-one meetings with their faculty advisor, during lab meetings, or during the Responsible Conduct of Research Workshop Series), the amount of time spent in discussion, and the topics covered. This statement will be certified by their faculty advisor on the student's annual report. The annual report will be kept on file in the Department of Plant Biology office. For each student, the Graduate Secretary will record compliance into GradPlan, with the first two years' training recorded as "Initial Training" and later years' training recorded as "Annual Training."

Plant Biology

Responsible Conduct of Research and Scholarship COMPLETION FORM

Name: _____

Initial Training Refresher

Undergrad Graduate Technician Postdoc

P.I. Name: _____

| Topic | Date Completed | P.I. Initials | Employee Initials |
|---|----------------|---------------|-------------------|
| Data Acquisition, Management, Sharing and Ownership | | | |
| Conflict of Interest & Commitment | | | |
| Research Misconduct | | | |
| Publication Practices and Responsible Authorship | | | |
| Mentor/Trainee Responsibilities | | | |
| Peer Review | | | |
| Collaborative Science | | | |
| Human Subjects (where applicable) | | | |
| Animal Welfare (where applicable) | | | |

XIV. SCHEDULING A MEETING

Scheduling meetings will be one of the most challenging tasks you face when it comes to interacting with your Guidance Committee. Plan well ahead and

Suggested mechanism for scheduling meetings:

- 1) Meet with your advisor and identify 3-5 days and 3-5 time periods on those days when you and your advisor can meet. Avoid obvious constraints like seminars.
- 2) Establish a "doodle" poll for those days/times, and also indicate where the meeting will be held (e.g., KBS/main campus is all that is needed at this point).
- 3) If the first doodle poll identifies a suitable day/time, then locate the building and room and get back to the committee members asap with the actual day/time /location so they can lock down the time. Please understand that faculty often block out those days/times for other activities, or if they do not, that other things may be scheduled during those time slots while we are waiting for confirmation.
- 4) If the first doodle poll is unsuccessful, try another combination of days/times--but no more than 3-5 different dates. If there is one person who seems the most constrained, talk with them one on one to speed the process along.
- 5) Two days before the meeting, send a reminder to all the attendees with the date, time, and place of the meeting.

XV. LEAVE POLICY

Current Leave Policies for TAs, RAs, and Postdocs
From GEU Contract Article 18 for 2015-2019

I. Medical Leave

A. In the event an Employee is unable to meet employment obligations because of illness, injury, pregnancy, or childbirth, the Employee will, when possible, notify the appropriate immediate supervisor (or employing unit designee) as promptly as possible so that arrangements for the absence can be made by the employing unit.

B. During a medical leave, the employing unit shall adjust (reduce, waive or reschedule) the Employee's duties as those duties and his/her physical circumstances reasonably dictate. If total absence from duties becomes necessary and the Employee is still enrolled, the employing unit shall maintain the stipend of the appointment provided for a period of two (2) months or to the end of the appointment period, whichever occurs first. Additional unpaid leave may be arranged on an ad hoc basis.

C. The Employee shall have the right to return to employment, provided there is no medical dispute, within the dates of the current appointment, at such time as he/she is able to resume duties.

III. Adoption and Parental Leave

An Employee who adopts a child shall be entitled to adoption leave of up to two (2) months, the first week of which will be paid by the Employer and the balance which will be unpaid, to commence on or before the date of adoption as determined by the Employee. An Employee who becomes a parent by birth and is not otherwise covered by section one of this article, shall be entitled to parental leave of up to two (2) months, the first week of which will be paid by the Employer and the balance which will be unpaid to commence on or before the date of birth as determined by the Employee. Additional unpaid leave may be arranged on an ad hoc basis.

To be eligible for adoption leave or parental leave:

A. It must be completed within six (6) weeks of the birth or adoption of a child under the age of six (6); and

B. It may not extend beyond the Employee's previously scheduled appointment end date; and

C. It must be requested in writing, where possible, no less than four (4) weeks prior to the scheduled start of the leave.