

GRADUATE PROGRAM

2023-2024

Crop and Soil Sciences

Department of Plant, Soil & Microbial Sciences



MICHIGAN STATE

U N I V E R S I T Y

Department of Plant, Soil, and Microbial Sciences
CROP AND SOIL SCIENCES PROGRAM
GRADUATE STUDENT HANDBOOK

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PREFACE

This document represents the Plant, Soil, and Microbial Sciences department's position on graduate education policy for the graduate program in Crop and Soil Sciences. It was developed after extended discussion and consultation among faculty and students. The document's most recent revision occurred in August 2023.

Appeals concerning interpretation of this document may be referred to the CSS Director of Graduate Programs and the Department Chairperson.

Your major professor plays a central role in planning your graduate education. The relationship between you and your major professor should be founded on mutual respect and an understanding of what constitutes graduate education. Soon after arrival, you will meet with your major professor to establish program requirements including course scheduling, program planning and research. There should be an understanding of project responsibilities, vacation and sick leave, and a tentative timetable for program completion.

I. GRADUATE EDUCATION: AN OVERVIEW

The Crop and Soil Sciences graduate program in the Department of Plant, Soil, and Microbial Sciences (PSM) is an important and integral part of the department's activities in teaching, extension, research, and international programs. The department places a high priority on graduate education and attempts to create an intellectual environment conducive to effective learning in all of these areas. Diversity, Equity, and Inclusion are important, interdependent components of everyday life and are critical to our pursuit of academic excellence. Our aim is to foster a culture where every member of PSM feels valued, supported, and inspired to achieve individual and common goals. PSM has a standing Committee on Diversity, Equity, and Inclusion (DEI) with two graduate students as members on a rotating basis. We hope you will consider participating. For statements of DEI values, please access the CANR DEI pages at <https://www.canr.msu.edu/diversity/dei-statement>. Graduate students who have DEI concerns will receive confidential support to address and assist in helping resolve those concerns. Please see <https://www.canr.msu.edu/diversity/resources/>. Michigan State University has implemented a telephone and web reporting Hotline to help maintain adherence to ethical practices. The purpose of the Hotline is to provide an anonymous method to report known or suspected misconduct for Michigan State University related to fiscal matters, conflicts of interest, employment, medical/HIPAA, research, safety, athletics, discrimination/harassment, privacy, retaliation, or any other area of legal, policy, or ethical concern not specifically listed. Please see <https://misconduct.msu.edu/>

To facilitate maximum personal development in the areas of research, teaching, extension, and international activities, the department's graduate program is flexible and permits substantial freedom for both students and faculty. This is intended to permit and encourage individual initiative by students in developing their educational programs and to provide the maximum

basis for originality and creativity.

Though certain minimum requirements must be satisfied, a wide range of graduate programs can be developed to fit the unique interests and needs of individual students. Programs can be developed to emphasize training in crop science or soil science with various fields of specialization in each area. Since the student, under the direction of a major professor and guidance committee, is given wide range and latitude in developing programs, it is important that the student accept the responsibility for making early and thoughtful decisions with regard to total program content and their interest in extension, teaching, international activities, and other career interests. Though program changes may be required later, it is important that the overall direction of the student's program be developed at an early date.

The general university and college requirements for graduate programs including residency requirements, are found in the Michigan State University publication, *Academic Programs*, and can also be found at <http://www.reg.msu.edu/AcademicPrograms/>. It should be consulted even though many of the relevant university and college requirements are included herein. This document is intended to establish policy guidelines, to clarify college and university requirements and to establish departmental requirements for graduate education in Crop and Soil Sciences in the Department of Plant, Soil and Microbial Sciences. In addition, students are advised to consult the section entitled "**Graduate Student Rights and Responsibilities**" in *Spartan Life: MSU Student Resource Guide and Handbook*, <https://spartanexperiences.msu.edu/about/handbook/index.html>. This document contains additional information concerning academic programming, termination of graduate assistantships, access to student records, and redress of grievances, among other subjects.

II. GRADUATE ASSISTANTSHIPS

Graduate assistantship (GA) is a generic term referring to financial support of graduate students that results in a stipend and compensation and for which *performance of defined duties* is expected. Specific graduate assistant appointments are made in one of three categories: research assistants (GRA), teaching assistants (GTA) represented by the Graduate Employees Union (GEU), and teaching assistants not represented by the GEU. Graduate assistantships are awarded to students based on availability and are appointed as graduate **research assistantships (GRA)** in the Department of Plant, Soil and Microbial Sciences that are supported by research funds generated by the major professor. As a GRA you are enrolled as a ½-time GRA (20 hours per week) in accordance with your research program of study and engaged in research activities directly related to your program of study under the supervision of your major professor and graduate guidance committee. The Department of Plant, Soil and Microbial sciences **does not** have ½-time GTAs; however, graduate students may have the opportunity to serve as a GTA to supplement or replace a portion of their research assistantship based on availability of GTA opportunities. Assistantships levels, timelines of employment and stipends conform to university guidelines (<https://grad.msu.edu/assistantships>). The amount and timing of vacation are at the discretion of the major professor.

A. Fellowships

Graduate students admitted into the department that are supported by fellowships may be eligible for in-state tuition rates (<https://grad.msu.edu/fellowships>). The in-state tuition rate applies only to the semesters during which the student is supported by the fellowship and the fellowship must be worth the direct cost of an assistantship. This policy applies only to grants funded through a competitive process by a US institution/agency/foundation. Funds obtained through non-competitive processes (e.g., need-based fellowships) or from international sources do not qualify students for in-state tuition rates.

B. Graduate Student Termination

Graduate student assistantships may be terminated if the student is not making acceptable academic progress toward the degree and/or if the cumulative GPA falls below a 3.0, or in cases of insufficient funds. The major professor and department review and make a decision concerning the retention of any student failing to fulfill departmental requirements and may dismiss a student at the end of any semester. Notice of dismissal is given to the student by the department chairperson, and the dean is notified of such action.

III. THE MASTER'S PROGRAM

The master's degree program in Crop and Soil Sciences recognizes that the background and post degree plans of students vary widely. Students who plan to acquire a Ph.D. degree should develop their master's program as an integral part of their total graduate program. Students enrolled in interdisciplinary programs such as Plant Breeding and Genetics are required to fulfill all degree requirements for both Crop and Soil Sciences and the interdisciplinary program. It is the student's responsibility to learn about relevant requirements.

A. Selection of a Major Professor and Guidance Committee

Major Professor: Students are not admitted to a graduate program in Crop and Soil Sciences until a tenure-system (or graduate school approved) faculty member has agreed to serve as major professor. If a graduate student is interested in changing major professors, a discussion should take place between the graduate student and the major professor. A graduate student can then contact another professor to determine if there is an opportunity for the student to receive a graduate research assistantship, since most GRAs are tied to a professor's research program. The Graduate Program Director can be contacted by the major professor and graduate student for consultation. Should the student's major professor leave the university, or become unable to serve, the CSS Department Chairperson and the CSS Graduate Program Director will work with the student and the remaining committee members to resolve the situation, usually by appointing a new committee member and designating a new major professor.

Guidance Committee: It is the responsibility of the student, in consultation with the major

professor, to form a guidance committee at the earliest possible date, but not later than the **end of the first semester** of study after completion of provisional requirements, if any. The guidance committee must consist of at least three members of the faculty. The major professor serves as chairperson of the committee. At least one member of the committee must be from a department other than Plant, Soil and Microbial Sciences, unless a special exemption is granted by the CSS Graduate Program Director. The primary function of the guidance committee is to provide direction and counsel and to oversee the progress of the student. This committee will also function as the examining committee. The student must report the membership of the guidance committee using **GradPlan** (<https://student.msu.edu/splash.html>) once the committee is established.

The guidance committee should meet during the first semester of study. In accordance with university regulations, either the student or the major professor must take minutes at each committee meeting, and both the major professor and the student should retain a copy of the minutes in their files. It is recommended that each student remain in contact with all members of the committee throughout the M.S. program. It is advisable to convene a committee meeting at least once each academic year to discuss coursework and research progress and future goals. The graduate student should discuss with their major professor and their guidance committee their interest in teaching and extension so their GradPlan and education can include exposure to the areas of interest.

B. Program of Study

In keeping with the department's philosophy of allowing maximum flexibility for individual situations, two programs of study, designated as Plan A and Plan B, are offered. These plans differ primarily in their research component. Both Plan A and Plan B require a minimum of 30 semester credits, including credits needed to meet the requirement for Professional Development, Scientific Writing and Presentation Skills. In addition, both Plan A and Plan B require a final oral (certifying) examination and the presentation of a seminar.

1. Plan A

- a. Plan A consists of course work, research, thesis, seminar, and certifying examination. It is recommended for students whose career interests and plans suggest the need for research experience, and for all students who plan to pursue a Ph.D. The thesis represents from **6 to 10 semester research credits** earned in **CSS 899**. Thesis research must be original research which will contribute to the body of knowledge of the student's disciplinary topic.
- b. In Plan A, a **minimum of 20 semester course credits** with a grade point average of at least 3.0 is required. Collateral courses and research credits are not included in computing the grade point average. A **total of 30 semester credits** (some combination of 20 to 24 semester course credits and 6 to 10 semester research credits) is required. Up to 9 semester credits may be transfer credits from graduate programs at other

universities.

- c. More than half of the credits of the total required for a master's degree must be taken in courses at the 800 and 900 levels, except as specifically exempted by the dean of the college. CSS 899 credits may be included in this calculation.
- d. The course program is jointly developed by the student, major professor, and guidance committee. Following development, the student enters their Program of Study in **GradPlan** (<https://student.msu.edu/splash.html>) for approval by the student's guidance committee, the Department Chairperson, or their designee, usually the Director of Graduate Programs, and the Dean of the College. This process must be completed **prior to completion of two semesters**.
- e. Each student in Plan A is required to submit an electronic copy of the thesis to the Office of the Graduate School. The major professor has the option of requesting a bound copy.

2. Plan B

- a. Plan B consists of course work, seminar, and a certifying examination. In addition, Plan B requires a research paper or special problems paper(s) that demonstrate the student's ability to define a significant problem, choose and apply appropriate analytical techniques, and interpret the results in a meaningful way.
- b. In Plan B, a **total of 30 semester course credits** with a grade point average of at least 3.0 is required. Students may earn up to **6 semester credits in CSS 890** for their research paper or special problems paper(s). These credits are computed in the overall grade point average. Students in Plan B do not enroll in CSS 899.
- c. More than half of the credits of the total required for a master's degree must be taken in courses at the 800 and 900 levels, except as specifically exempted by the dean of the college. CSS 890 credits may be included in this calculation.
- d. The course program is jointly developed by the student, major professor, and guidance committee. Following development, the student enters their Program of Study in **GradPlan** (<https://student.msu.edu/splash.html>) for approval by the student's guidance committee, the Department Chairperson, or their designee, usually the Director of Graduate Programs, and the Dean of the College. This process must be completed **prior to completion of two semesters**.

C. Additional Requirements for all Master's Students

1. Responsible Conduct of Research (RCR) or Research Integrity

The conduct of research and creative activities by faculty, staff, and students is central to the mission of Michigan State University and is an institutional priority. Integrity in research and creative activities is based not only on sound disciplinary practice but also on a commitment to basic personal values such as fairness, equity, honesty, and respect. The foundation underlying all research is uncompromising honesty in presenting one's own ideas in research proposals, in performing one's research, and in reporting one's data. Misconduct in research, such as falsification and plagiarism, is grounds for termination.

All graduate students must complete the basic RCR requirements.

Master's Plan A

CITI Modules Year 1

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

6 hours discussion-based training
(complete before graduation)*

CITI Modules Year 2

Complete 3 of 6 RCR basic modules:

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

Master's Plan B

CITI Modules Year 1

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

6 hours discussion-based training
(complete before graduation)

*Discussion-based training can include discussions with major professor about RCR; Graduate School workshops (<https://grad.msu.edu/rcr>); and the following courses:

- CSS 880: Scientific Communication and Professional Development – 1 credit
- ENT 8004 001: Independent Study: Scientific Communication – 2 credits

For more information about RCR visit <https://grad.msu.edu/researchintegrity>.

2. Thesis Research Proposal Requirement

All M.S. students will complete a research proposal that is due, with committee and major professor approval, by the end of their first year in program. This research proposal will include an introduction, research questions and hypotheses and methods. This requirement is to help you get started writing and to complete a significant portion of your thesis in year 1 - the material included in this research proposal can be copied directly into your thesis.

The on-line Research Proposal Requirement form can be obtained from the PSM web site.

It is suggested that these proposals be 5-10 pages in length (not including references cited) and that they follow Project GREEN proposal structure or include the following sections:

1. Introduction (including literature review)
2. Research questions and hypotheses
3. Methods (as detailed as possible)
4. Summary & importance of research
5. Potential pitfalls

3. Professional Development, Scientific Writing, and Presentation Skills Requirement

The Crop and Soil Sciences graduate program requires that M.S. students exhibit proficiency in professional development, scientific writing, and presentation skills. The faculty recognizes that these skills can be acquired through formal coursework and experience. The Professional Development, Scientific Writing and Presentation Skills Requirement provides the guidance committee flexibility in identifying the course(s) that a given student should complete to satisfy the requirement. The course(s) identified by the guidance committee must appear on their academic Program of Study. A minimum of **1 credit is required**.

Current Course Options are:

- **CSS 880 Scientific Communication and Professional Development** - 1 credit (Spring). Interactive discussion and exercises designed to prepare students to become successful professionals. Content will focus on the skills and strategies for success in STEM careers at the graduate level and beyond. Course content will address three main topics: 1. Career management & leadership skills 2. Scientific communication 3. Applying & interviewing for your next position
- **HRT 860 Scientific Writing Workshop** - 1 credit (Spring). Development of scientific writing skills.
- **GLG 850 From Research to Publication** - 3 credits (Fall). An overview of the process for moving research from data/theory to publication including ethics in publishing, identifying appropriate journals, writing manuscripts, and the publication process.
- **ENT 804 001 Scientific Communication** - 2 credits (Fall). Produce a journal-quality scientific article, thesis/dissertation chapter or grant proposal by writing a document section-by-section, using the peer-review process, and incorporating feedback. Become familiar with other aspects of scientific publication and communication to improve presentation and online communication skills.
- **EGR 891 Technical Writing for Engineers and Scientists** - 3 credits (Fall, Spring). Designed for graduate students to equip them to write technical documents in MS Word and LaTeX.

- **PLB 843 Forum in Computational and Plant Sciences** - 1 credit (Fall, Spring). Professional development focused on diverse modes of communication in support of interdisciplinary science with an emphasis on plant and computational sciences.
- **PLP 894 Seminar in Plant Pathology** - 1 credit (Fall, Spring). Review, organization, analysis, and oral presentation of research.

4. Annual Evaluations

The Graduate School at Michigan State University requires all graduate students in all departments to complete an annual review each year. In January of each year, PSM graduate students are sent the link to the Annual Review form that must be completed with their major professor prior to mid-March. The Annual Review includes an update on coursework and research progress over the past 12 months. It is the responsibility of the student to complete the evaluation form and review the form with their major professor. Students are evaluated on both the completion of program requirements and the progress made on assistantship and research responsibilities. The student must meet with their major professor, discuss their progress, complete the form, sign the form, and submit the form to the CSS Graduate Office by mid-March. If the major professor is not available to review the student's evaluation, the major professor must appoint a substitute in advance.

All evaluation forms will be reviewed by the Director of Graduate Programs or by the GPC Chairperson if the Director is unavailable. Students will be notified in writing if they are not making academic progress. If the major professor deems that acceptable progress is not being made, the major professor, in consultation with the student, will develop a written plan of action which must then be approved by the CSS Graduate Programs Director.

Student Records. Evaluation forms, programs of study forms, application and admission materials, degree requirement completion forms, lists of honors and recognition, and other relevant student records, will be filed in the student's permanent file in the CSS Graduate Programs Office. A student may access their individual records by submitting a written request to the PSM graduate administrative assistant. Students have the right to challenge the accuracy of their files by writing a letter that is placed in the file.

5. Application to Graduate

During the semester in which you plan to graduate you will need to obtain an application to Graduate form. It is available at the following web site:

<http://www.reg.msu.edu/StuForms/GradApp/GradApp.asp>. Be sure to check deadlines in the schedule of courses catalog. Thesis and Dissertation information can be found online at: <https://grad.msu.edu/etd>. Information on Commencement and Ceremonial events can be found at: <https://commencement.msu.edu/>. In addition, you may consider registering with the Career Services Network web site at: <http://careernetwork.msu.edu/>.

6. Seminar Requirement

Each M.S. student is required to present one oral seminar on their research activities or the

contents of the special problem paper. This seminar is open to anyone interested in attending and is **presented immediately prior to the final oral defense**. Seminar notices should be completed by the student and sent electronically to the CSS Graduate Programs Office at least **2 weeks prior to the seminar**. The Result of the Final Oral Defense form is available on the PSM web site.

7. Master's Degree Evaluation Procedure

All M.S. students are required to successfully complete a final oral certifying examination (defense). This oral examination follows the seminar on the student's research activities or contents of the special problem paper. The oral examination is considered to be an overall examination of the student's qualifications for the M.S. degree. Since M.S. degree programs may vary markedly between students, the oral examination will also vary, but in each case the examination will attempt to determine if the candidate has achieved (a) an acceptable level of competence in the general area of crop and/or soil science and related fields, and (b) a comprehensive knowledge of his/her major area of specialization. In addition to the oral examination, a written examination may be given by and at the discretion of each member of the guidance committee.

For students in Plan A, the oral examination must include a defense of the thesis but may also include course work-related questions. Plan A students are required to provide members of the examining committee with a copy of the thesis at **least 2 weeks** before the oral examination. For students in Plan B, the oral examination may include a defense of the special problem paper and/or course work-related questions.

While a unanimous report is usual, a two-thirds majority vote to pass is sufficient for successful completion of the examination requirement. Each member of the guidance committee will sign the Result of Final Defense form, which must be forwarded to the Director of Graduate Programs, and then to the Dean of the College.

Students who wish to defend their thesis in the summer **need to be registered** for at least one credit during that summer, regardless of their being enrolled the preceding spring semester.

Each student is expected to submit an electronic copy of the thesis to the Office of the Graduate School. The major professor has the option of requesting a bound copy.

D. Teaching/Extension Opportunities

Teaching and/or extension experiences are important aspects of graduate education in the Department of Plant, Soil, and Microbial Sciences. It is strongly suggested that Crop and Soil Sciences' graduate students talk with their major professor and their guidance committee about their interests in teaching and extension. There are opportunities in PSM to participate in teaching and/or extension experiences during their graduate program.

1. **Teaching experiences** may include, but are not limited to:
 - Developing and presenting one lecture/demonstration-discussion for a CSS course.
 - Coordinating current or developing a new field and/or laboratory exercise for a CSS course.
 - Serving as Graduate Classroom Support (GCS; hourly pay) for a CSS course (may include lab preparation, setup/take down, monitoring a discussion board, grading of an assignment) for *U.S. citizens or permanent residents only* per university guidelines unless a waiver has been requested (please see the PSM graduate administrative assistant for further information).
 - Graduate Classroom Support opportunities for the following academic year will be advertised during the previous spring semester.
 - Serving as a ¼-time Teaching Assistant for a CSS course (includes responsibility for a laboratory or a recitation section).
 - Students who serve as ¼-time Teaching Assistants are required by the University to complete the MSU Teaching Assistant Orientation. The orientation is offered prior to the start of the fall semester. Students should attend the orientation in the academic year they serve as a teaching assistant.
 - ¼-time Teaching Assistant opportunities for the following academic year will be advertised during the previous spring semester.

2. **Extension experiences** may include attending and participating in an Extension meeting or field day, and/or development and delivery of an Extension ‘product’.
 - Example extension products include, but are not limited to:
 - A MSU-E bulletin, video or podcast
 - A section of an Extension Short Course for a specific audience
 - A stop at a field day or field tour for a specific audience
 - A PowerPoint presentation or video for use by Extension educators, agriscience teachers, or other agency personnel (person to person interaction)
 - A field demonstration plot for use by Extension educators and others

3. **Graduate Certificates in College Teaching, Online Teaching and Learning, and Community Engagement.** Graduate students that are interested in gaining more experience in teaching or community engagement may be interested in completing one of these graduate certificates. For more information on these programs please see: www.grad.msu.edu/cctp for Graduate Certificates in College Teaching, <https://education.msu.edu/cepse/maet/certificates/online-teaching/> for Online Teaching and Learning, or <https://gradcert.engage.msu.edu/> for Community Engagement.

E. Example Timeline for Writing a Master's Thesis

- A thesis research proposal must be approved by your advisor and committee by the end of your 1st year in the master's program.
- During the semester you defend, you must be enrolled in at least 1 credit. This requirement is waived if you are defending in a summer semester.
- For each semester's graduation timeline, your thesis must be turned in to the Graduate School by a set date. Please see this link for the date for the semester you plan to graduate <https://grad.msu.edu/etd/etd-deadline-dates>
- Students should give themselves at least 1-2 week(s) to make the changes to their thesis before submitting to the Graduate School. This means your defense date must be at least 1 week (preferably 2 weeks) before the Graduate School deadline. Often changes to your thesis must be completed before your committee signs the forms for passing your defense.
- Your committee is required to have your thesis **2 weeks** prior to your defense.
- If you have two data chapters in your thesis you can expect your major advisor to read the draft of each chapter and return it to you at least twice (often three times). Your major advisor is not 'required' to read a draft over the weekend and give it back to you Monday morning or give a draft back to you in 24- to 48- hours. Many graduate students assume that their major advisor will return drafts to them immediately and that cannot be expected with field and lab programs and other responsibilities. Plan on an advisor taking 2 weeks to review a draft of your chapter before returning the chapter to you with edits.
- Plan on meeting with your advisor to review data for one chapter and then write your chapter and give it to your advisor for review. During that time, you can be working on your other chapter(s) and then once you submit another chapter to your advisor you can have your other draft back to work on. Students work on data or other chapters while they are waiting for feedback from their advisor on another chapter. This is a lengthy process. If you are writing two data chapters and have your literature review completed and your data analyzed, expect 6 to 8 weeks in writing, editing, and revising your two data chapters.
- A thesis is not sent out to the graduate committee until the major advisor thinks it is ready. The entire thesis is sent to committee, not single chapters. The goal is to have very few revisions when the committee reads your thesis.
- If you begin at another university or start a job where you are committed full time, inform your major advisor of that date so the graduate administrative assistant can conclude your financial assistance from MSU.
- If you plan to move out of state to start a job or a PhD program it is important that your new supervisor or your PhD advisor know your graduation date. If a letter is needed showing M.S. completion, that letter will be written by the Graduate Program Director once the signed defense form has been submitted and not before.
- If you move out of MI, you can defend your thesis through Zoom and it is your responsibility to communicate with the graduate administrative assistant so they can send out defense information to the PSM department in a timely manner. It is also your responsibility to have a good remote connection with high-speed internet so you can have video and audio without issues.
- If you have any questions about the timeline for a defense or the process of writing a thesis, please contact either Dr. Christy Sprague, CSS Graduate Program Director spraguel@msu.edu, Dr. Dave Douches, PBGB Graduate Program Director

douchesd@msu.edu, or D. Marty Chilvers, PLP Graduate Program Director
chilvers@msu.edu.

F. Summary of Master’s Degree Requirements and Due Dates

REQUIREMENTS	DUE DATE
Selection of Guidance Committee (GradPlan - https://student.msu.edu/splash.html)	Prior to completion of the 1 st semester
Proposed Academic Program (GradPlan - https://student.msu.edu/splash.html)	Prior to completion of the 2 nd semester
Responsible Conduct of Research Training	In Years 1 and 2
Thesis Research Proposal (<i>form required</i>)	Approved by major professor and committee by the end of Year 1
Professional Development, Scientific Writing, and Presentation Skills Requirement	Course must be listed on the Academic program of Study
Annual Evaluation	Spring of each year
Application to Graduate	Semester of Proposed Graduation https://reg.msu.edu/ROInfo/Calendar/Academic.aspx
Final Oral Defense (Form Required)	See the University Calendar* https://grad.msu.edu/etd/etd-deadline-dates
Final Draft of Thesis to Graduate School	See the University Calendar* https://grad.msu.edu/etd/etd-deadline-dates

IV. THE DOCTORAL PROGRAM

Crop and Soil Sciences- Doctor of Philosophy

Students are encouraged to take courses that provide a broad background in biological and physical sciences in addition to training in specialized areas. The doctoral program aims to provide a high quality crop and soil science experience to equip students with the skills necessary for research, teaching, and extension, or other agriculture-related positions that require the Doctor of Philosophy degree.

Admission to the CSS doctoral program is open to students with master’s or bachelor’s degrees. It is usually desirable, but not mandatory, that a student earn a master’s degree before proceeding to a doctoral program.

Students completing a master's degree in Crop and Soil Sciences at Michigan State University may apply for a doctoral program in Crop and Soil Sciences by requesting that the major professor submit a letter of recommendation/commitment to the Graduate Programs Committee. The request requires approval of the department and the College.

The doctoral program has flexibility to accommodate the diverse interests and talents of the future scientists being educated in the department. This flexibility implies responsibility for the student to make an early selection of a major professor and, in consultation with the guidance committee, an early selection of a program of courses and a research area.

All doctoral programs in Crop and Soil Sciences must include course work, completion of the

professional development, scientific writing and presentation skills requirement, a written research proposal, comprehensive examination, research and dissertation, seminar, and final oral examination. Students enrolled in interdisciplinary programs such as Plant Breeding, Genetics and Biotechnology or Environmental Toxicology, and students enrolled in a dual major graduate program in Molecular Plant Sciences, are required to fulfill all degree requirements for both Crop and Soil Sciences and the interdisciplinary program or dual graduate major. It is the student's responsibility to be informed about relevant requirements.

Each student working toward a Doctor of Philosophy degree must conduct original research upon which a dissertation that makes a significant contribution to knowledge is to be prepared and published.

A. Selection of a Major Professor and Guidance Committee

Major Professor: Students are not admitted to a graduate program in Crop and Soil Sciences until a tenure-system (or graduate school approved) faculty member has agreed to serve as major professor. If a graduate student is interested in changing major professors, a discussion should take place between the graduate student and the major professor. A graduate student can then contact another professor to determine if there is an opportunity for the student to receive a graduate research assistantship, since most GRAs are tied to a professor's research program. The Graduate Program Director can be contacted by the major professor and graduate student for consultation. Should the student's major professor leave the university, or become unable to serve, the CSS Department Chairperson and the CSS Graduate Program Director will work with the student and the remaining committee members to resolve the situation, usually by appointing a new committee member and designating a new major professor.

Guidance Committee: It is the responsibility of the student, in consultation with the major professor, to form a guidance committee at the earliest possible date, but not later than the **second semester** of study after completion of provisional requirements, if any. The guidance committee must consist of at least four members of the faculty. The major professor serves as chairperson of the committee. At least one member of the committee must be from a department other than Plant, Soil and Microbial Sciences, unless a special exemption is granted by the CSS Graduate Program Director. The primary function of the guidance committee is to provide direction and counsel and to oversee the progress of the student. The guidance committee also has final responsibility for determining whether the student has met the standards for the Ph.D. degree. The student must report the membership of the guidance committee using **GradPlan** (<https://student.msu.edu/splash.html>) once the committee is established.

The guidance committee should meet during the **second semester** of study. In accordance with university regulations, either the student or the major professor must take minutes at each committee meeting, and both the major professor and the student should retain a copy of the minutes in their files. It is recommended that each student remain in contact with all members

of the committee throughout the doctoral program. It is advisable to convene a committee meeting at least once each academic year to discuss coursework and research progress and future goals. The graduate student should discuss with their major professor and their guidance committee their interest in teaching and extension so their GradPlan and education can include exposure to the areas of interest.

B. Program of Study

In keeping with the department's philosophy of allowing maximum flexibility for individual situations, the program of courses is developed by the student, major professor, and the guidance committee. Individual course programs vary greatly between students depending on each student's specific interests and prior education and experience. The course program should strengthen the student's overall understanding of crop and/or soil sciences and provide greater depth in the student's specific area of interest. The program of study will include a combination of dissertation research credits (CSS 999) and course credits.

1. University regulations require that each Ph.D. student register for a minimum of **24 semester credits** of dissertation research credits (**CSS 999**), but no more than 36 credits for the duration of their doctoral program. Dissertation research must be original research which will contribute to the body of knowledge of the student's disciplinary topic.
2. In addition, it is strongly recommended that each Ph.D. student complete at least **24 semester credits of course work** with a grade point average of at least 3.0 is required. Collateral courses and research credits are not included in computing the grade point average. Up to 9 semester course credits may be transfer credits from graduate programs at other universities.
3. More than half of the credits of the total required for a doctoral degree must be taken in courses at the 800 and 900 levels, except as specifically exempted by the dean of the college. CSS 999 credits may be included in this calculation.
4. The course program is jointly developed by the student, major professor, and guidance committee. Following development, the student enters their Program of Study in **GradPlan (<https://student.msu.edu/splash.html>)** for approval by the student's guidance committee, the Department Chairperson, or their designee, usually the Director of Graduate Programs, and the Dean of the College. This process must be completed **prior to completion of two semesters.**
5. Each student is required to submit an electronic copy of the dissertation to the Office of the Graduate School (see Section X). The major professor has the option of requesting a bound copy.

C. Additional Requirements for Doctoral Students

1. Responsible Conduct of Research (RCR) or Research Integrity

The conduct of research and creative activities by faculty, staff, and students is central to the mission of Michigan State University and is an institutional priority. Integrity in research and creative activities is based not only on sound disciplinary practice but also on a commitment to basic personal values such as fairness, equity, honesty, and respect. The foundation underlying all research is uncompromising honesty in presenting one's own ideas in research proposals, in performing one's research, and in reporting one's data. Misconduct in research, such as falsification and plagiarism, is grounds for termination.

All graduate students must complete the basic RCR requirements.

Doctoral Students

CITI Modules Year 1

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

6 hours discussion-based training
(complete before finishing comprehensive examination)*

CITI Modules Year 2

Complete 3 of 6 RCR basic modules:

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

Year 3 forward

3 hours of annual refresher training

- CITI modules not previously taken to fulfill Year1/Year2/or another refresher year's requirements.
- Department/College Workshops, brown-bag luncheons, group discussions covering RCR related topics.
- Grad School RCR workshops not previously taken.
- One-on-one discussions between the student and their advisor.
- Other RCR related courses

*Discussion-based training can include discussions with major professor about RCR; Graduate School workshops (<https://grad.msu.edu/rcr>); and the following courses:

- CSS 880: Scientific Communication and Professional Development – 1 credit
- ENT 8004 001: Independent Study: Scientific Communication – 2 credits

For more information about RCR visit <https://grad.msu.edu/researchintegrity>.

2. Dissertation Research Proposal Requirement

Each doctoral student is required to complete a dissertation research proposal that is due, with committee and major professor approval, **within 2 years of admission** into the doctoral program. The purpose of the proposal requirement is to provide students with

experience in reading and summarizing literature and in writing research proposals and to ensure communication on the research project between the student and guidance committee. Dissertation research must be original research which will contribute to the body of knowledge of the student's disciplinary topic. The Research Proposal Requirement must be completed prior to Comprehensive Exams. It is suggested that these proposals are 10-15 pages in length (not including references cited) and that they follow standard USDA or NSF proposal structure or include the following sections:

1. Introduction (including literature review)
2. Research questions and hypotheses
3. Methods
4. Summary & importance of research
5. Potential pitfalls

The on-line Research Proposal Requirement form can be obtained from the PSM web site.

3. Professional Development, Scientific Writing, and Presentation Skills Requirement

The Crop and Soil Sciences graduate program requires that doctoral students exhibit proficiency in professional development, scientific writing, and presentation skills. The faculty recognizes that these skills can be acquired through formal coursework and experience. The Professional Development, Scientific Writing and Presentation Skills Requirement provides the guidance committee flexibility in identifying the course(s) that a given student should complete to satisfy the requirement. The course(s) identified by the guidance committee must appear on their academic Program of Study. **A minimum of 1 credit is required.**

Current Course Options are:

- **CSS 880 Scientific Communication and Professional Development** - 1 credit (Spring). Interactive discussion and exercises designed to prepare students to become successful professionals. Content will focus on the skills and strategies for success in STEM careers at the graduate level and beyond. Course content will address three main topics: 1. Career management & leadership skills 2. Scientific communication 3. Applying & interviewing for your next position
- **HRT 860 Scientific Writing Workshop** - 1 credit (Spring). Development of scientific writing skills.
- **GLG 850 From Research to Publication** - 3 credits (Fall). An overview of the process for moving research from data/theory to publication including ethics in publishing, identifying appropriate journals, writing manuscripts, and the publication process.
- **ENT 804 001 Scientific Communication** - 2 credits (Fall). Produce a journal-quality scientific article, thesis/dissertation chapter or grant proposal by writing a document section-by-section, using the peer-review process, and incorporating feedback. Become familiar with other aspects of scientific publication and communication to improve presentation and online communication skills.

- **EGR 891 Technical Writing for Engineers and Scientists** - 3 credits (Fall, Spring). Designed for graduate students to equip them to write technical documents in MS Word and LaTeX.
- **PLB 843 Forum in Computational and Plant Sciences** - 1 credit (Fall, Spring). Professional development focused on diverse modes of communication in support of interdisciplinary science with an emphasis on plant and computational sciences.
- **PLP 894 Seminar in Plant Pathology** - 1 credit (Fall, Spring). Review, organization, analysis, and oral presentation of research.

4. Annual Evaluations

The Graduate School at Michigan State University requires all graduate students in all departments to complete an annual review each year. In January of each year, PSM graduate students are sent the link to the Annual Review form that must be completed with their major professor prior to mid-March. The Annual Review includes an update on coursework and research progress over the past 12 months. It is the responsibility of the student to complete the evaluation form and review the form with their major professor. Students are evaluated on both the completion of program requirements and the progress made on assistantship and research responsibilities. The student must meet with their major professor, discuss their progress, complete the form, sign the form, and submit the form to the CSS Graduate Office by mid-March. If the major professor is not available to review the student's evaluation, the major professor must appoint a substitute in advance.

All evaluation forms will be reviewed by the Director of Graduate Programs or by the GPC Chairperson if the Director is unavailable. Students will be notified in writing if they are not making academic progress. If the major professor deems that acceptable progress is not being made, the major professor, in consultation with the student, will develop a written plan of action which must then be approved by the CSS Graduate Programs Director.

Student Records. Evaluation forms, programs of study forms, application and admission materials, degree requirement completion forms, lists of honors and recognition, and other relevant student records, will be filed in the student's permanent file in the CSS Graduate Programs Office. A student may access their individual records by submitting a written request to the PSM graduate administrative assistant. Students have the right to challenge the accuracy of their files by writing a letter that is placed in the file.

5. Seminar Requirement

Each doctoral student is required to present at least **two** seminars as part of the requirements for graduation. The first seminar may be either an oral or poster format and may be presented at a professional meeting. **Students must complete and submit an on-line Seminar Requirement form for this seminar.** Each student is required to present an oral seminar on their dissertation research as part of the final oral examination. This seminar is

open to anyone interested in attending and is **presented immediately prior to the final oral defense**. Seminar notices should be completed by the student and sent electronically to the CSS Graduate Programs Office at least **2 weeks prior to the seminar**.

6. Comprehensive Examinations

Comprehensive examinations are designed to test the student's competence as a professional crop and/or soil scientist. In the comprehensive examination, the student is expected to demonstrate more than an ability to recall principles, theories, facts, and hypotheses that have been learned in formal course work. They are expected to demonstrate an ability to integrate knowledge and information in solving problems. In evaluating a student's performance, emphasis is placed on the student's ability to recognize problems and to propose and defend solutions. Comprehensive examinations can only be conducted after the research proposal requirement is completed.

- a. Examination Format: The comprehensive exam includes the written and the oral exam. Students must pass both components to pass the comprehensive exam. The written component must be passed before the oral exam is taken. Students have two attempts to pass each component of the comprehensive exam.
- b. Guidelines for the Comprehensive Exam:
 - i. The comprehensive exam is a pass/fail examination required of all Ph.D. students. The comprehensive exams should be **taken after 80% of required course work is completed**. Students must be registered the semester in which they take the comprehensive exam, and they must pass the comprehensive exam within **5 years of enrollment** as a doctoral student.
 - ii. The written component of the comprehensive exam must be passed before the oral component is taken. A student has two attempts to pass each component of the exam. A student who fails either the written or oral component of the comprehensive exam twice will be terminated from the Ph.D. program. They may request reclassification as a master's candidate.
 - iii. To "pass" the written component the student can only receive a "fail" grade from one committee member.
 - iv. To "pass" the oral component the student can only receive a "fail" grade from one committee member.
 - v. If a student fails, the student must wait until the following semester before retaking either the written or oral component of the comprehensive exam.
- c. Administration of the Comprehensive Exam:
 - i. The guidance committee chairperson is responsible for maintaining the record of the comprehensive exam. They should obtain the University Record of Comprehensive Examination form from the PSM web site prior to exam initiation. This form lists the participating guidance committee members and their subject matter.
 - ii. The written component is comprised of individual tests administered by the

student's committee. Students should be informed of the subject areas well in advance of the written exam. Subjects are chosen by the committee and are based on the student's area of emphasis. One of the tests must be in either crop science or soil science. Each written test should be designed to be completed in 4 to 6 hours. The decision as to whether reference materials or electronic devices are used is a committee or committee member's decision. All written tests should be administered within a 2-week period.

- iii. Each committee member must date, sign, and mark pass or fail for the written component of the comprehensive exam on the University Record of Comprehensive Exam form as soon as possible after the completion of the written exam. The chairperson of the guidance committee will then communicate to the student and to the committee whether the student has passed the written exam and can schedule the oral examination.
- iv. A student passes the written component of the comprehensive exam if all committee members, or all but one committee member gives a passing grade.
- v. A copy of each written exam must be given to the Graduate Programs Office for long term storage with the student's records and kept on file for three years (University policy).
- vi. The oral component of the comprehensive exam should be scheduled as soon as possible after successful completion of the written component of the comprehensive exam.
- vii. All members of the committee must participate in the oral exam or have a representative of their subject area serve for them. Students should be informed of the subject areas well in advance. Oral exams should not exceed 4 hours.
- viii. The chairperson of the guidance committee should bring the University Record of Comprehensive Examinations to the oral examination. Following completion of the oral exam the student should be excused from the room while the committee discusses the exam. Each committee member then signs and dates the form and indicates a grade of pass or fail. A pass may be conditional by requiring further work such as additional course work, a written paper, or a similar assignment at the discretion of the examining committee.
- ix. A student passes the oral component of the comprehensive exam if all committee members, or all but one committee member gives a passing grade.
- x. The student is informed of the results of the oral component of the comprehensive exam immediately and the form is then returned to the CSS Graduate Programs Office for approval by the Department Chairperson or his/her designee, usually the Director of Graduate Programs, and the Dean of the College.
- xi. For students who were enrolled in the Spring and are taking their comprehensive exams during the immediate summer semester, the department can request a waiver of the requirement that the student be enrolled for at least one credit the semester of the comprehensive exam. These requests are to be directed to the Graduate School and must be endorsed by the student's department and college.

7. Application to Graduate

During the semester in which you plan to graduate you will need to obtain an application to Graduate form. It is available at the following web site:

<http://www.reg.msu.edu/StuForms/GradApp/GradApp.asp>. Be sure to check deadlines in the schedule of courses catalog. Thesis and Dissertation information can be found online at: <https://grad.msu.edu/etd>. Information on Commencement and Ceremonial events can be found at: <https://commencement.msu.edu/>. In addition, you may consider registering with the Career Services Network web site at: <http://careernetwork.msu.edu/>.

8. Doctoral Degree Evaluation Procedure

Upon completion of the dissertation, all doctoral students are required to successfully complete a final oral certifying examination (defense) of their dissertation. This oral examination follows the seminar on the student's research. The seminar is open to anyone interested in attending. All members of the guidance committee and all Plant, Soil, and Microbial Sciences faculty will be invited to attend and participate in the final oral examination. Students are required to provide members of their guidance committee with a copy of the dissertation at **least 2 weeks** before the oral examination. Seminar notices should also be completed by the student and sent electronically to the CSS Graduate Programs Office at this time.

On the basis of the dissertation and the student's defense, the guidance committee either approves or rejects the dissertation. Approval may be conditional, requiring additional work. While a unanimous report is usual, a 3/4 majority vote of attending members of the guidance committee is sufficient to approve the dissertation and pass the student. Following the defense, each member of the guidance committee will sign the Dissertation and Oral Examination form which must be forwarded to the Director of Graduate Programs, the Department Chairperson, and then to the Dean of the College.

Students who wish to defend their thesis in the summer **need to be registered** for at least one credit during that summer, regardless of their being enrolled the preceding spring semester.

Each student is expected to submit an electronic copy of the dissertation to the Office of the Graduate School. The major professor has the option of requesting a bound copy.

D. Teaching/Extension Opportunities

Teaching and/or extension experiences are important aspects of graduate education in the Department of Plant, Soil, and Microbial Sciences. It is strongly suggested that Crop and Soil Sciences' graduate students talk with their major professor and their guidance committee about their interests in teaching and extension. There are opportunities in PSM to participate in teaching and/or extension experiences during their graduate program.

1. **Teaching experiences** may include, but are not limited to:
 - Developing and presenting one lecture/demonstration-discussion for a CSS course.
 - Coordinating current or developing a new field and/or laboratory exercise for a CSS course.
 - Serving as Graduate Classroom Support (GCS; hourly pay) for a CSS course (may include lab preparation, setup/take down, monitoring a discussion board, grading of an assignment) for *U.S. citizens or permanent residents only* per university guidelines unless a waiver has been requested (please see the PSM graduate administrative assistant for further information).
 - Graduate Classroom Support opportunities for the following academic year will be advertised during the previous spring semester.
 - Serving as a ¼-time Teaching Assistant for a CSS course (includes responsibility for a laboratory or a recitation section).
 - Students who serve as ¼-time Teaching Assistants are required by the University to complete the MSU Teaching Assistant Orientation. The orientation is offered prior to the start of the fall semester. Students should attend the orientation in the academic year they serve as a teaching assistant.
 - ¼-time Teaching Assistant opportunities for the following academic year will be advertised during the previous spring semester.

2. **Extension experiences** may include attending and participating in an Extension meeting or field day, and/or development and delivery of an Extension ‘product’.
 - Example extension products include, but are not limited to:
 - A MSU-E bulletin, video or podcast
 - A section of an Extension Short Course for a specific audience
 - A stop at a field day or field tour for a specific audience
 - A PowerPoint presentation or video for use by Extension educators, agriscience teachers, or other agency personnel (person to person interaction)
 - A field demonstration plot for use by Extension educators and others

3. **Graduate Certificates in College Teaching, Online Teaching and Learning, and Community Engagement.** Graduate students that are interested in gaining more experience in teaching or community engagement may be interested in completing one of these graduate certificates. For more information on these programs please see: www.grad.msu.edu/cctp for Graduate Certificates in College Teaching, <https://education.msu.edu/cepse/maet/certificates/online-teaching/> for Online Teaching and Learning, or <https://gradcert.engage.msu.edu/> for Community Engagement.

E. Example Timeline for Writing a PhD Dissertation

- For each semester's graduation timeline, your dissertation must be turned in to the Graduate School by a set date. Please see this link for the date for the semester you plan to graduate <https://grad.msu.edu/etd/etd-deadline-dates>.
- Students should give themselves at least 1-2 week(s) to make the changes to their dissertation before submitting to the Graduate School. This means your defense date must be at least one (preferably two weeks) before the Graduate School deadline. Often changes to your dissertation must be completed before your committee signs the forms for passing your defense.
- Your committee is required to have your dissertation **2 weeks** prior to your defense.
- If you have two data chapters in your dissertation you can expect your major professor to read the draft of each chapter and return it to you at least twice (often three times). Your major professor is not 'required' to read a draft over the weekend and give it back to you Monday morning or give a draft back to you in 24- to 48-hours. Many graduate students assume that their major professor will return drafts to them immediately and that cannot be expected with field and lab programs and other responsibilities. Plan on an advisor taking two weeks to review a draft of your chapter before returning the chapter to you with edits.
- Plan on meeting with your major professor to review data for one chapter and then write your chapter and give it to your major professor for review. During that time, you can be working on your other chapter(s) and then once you submit a new chapter to your advisor you can have your other draft back to work on. Students work on data or other chapters while they are waiting for feedback from their major professor on another chapter. This is a lengthy process. If you are writing two data chapters and have your literature review completed and your data analyzed, expect 6- to 8- weeks in writing, editing, and revising your two data chapters.
- A dissertation is not sent out to the graduate committee until the major professor thinks it is ready. The entire dissertation is sent to the committee, not single chapters. The goal is to have very few revisions when the committee reads your dissertation.
- If you begin at another university or start a job where you are committed full time, inform your major professor of that date so the graduate administrative assistant can conclude your financial assistance from MSU.
- If you plan to move out of state to start a job it is important that your new supervisor knows when you will be graduating with your PhD. If a letter is needed showing completion, that letter will be written by the Graduate Program Director once the signed defense form has been submitted and not before.
- If you move out of MI, you can defend your dissertation through zoom. It is your responsibility to communicate with the graduate administrative assistant so they can send out defense information to the PSM department in a timely manner. It is also your responsibility to have a good remote connection with high-speed internet so you can have video and audio without issues.
- If you have any questions about the timeline for a defense or the process of writing a dissertation, please contact either Dr. Christy Sprague, CSS Graduate Program Director spraguel@msu.edu, Dr. Dave Douches, PBGB Graduate Program Director douchesd@msu.edu, or D. Marty Chilvers, PLP Graduate Program Director chilvers@msu.edu.

F. Summary of Doctoral Degree Requirements and Due Dates

REQUIREMENTS	DUE DATE
Selection of Guidance Committee (GradPlan - https://student.msu.edu/splash.html)	Prior to completion of the 2 nd semester
Proposed Academic Program (GradPlan - https://student.msu.edu/splash.html)	Prior to completion of the 2 nd semester
Responsible Conduct of Research Training	In Years 1, 2, 3 and beyond
Dissertation Research Proposal <i>Must be approved by Guidance Committee</i>	Within <u>two</u> years of admission to the doctoral program and prior to Comprehensive Exams
Professional Development, Scientific Writing, and Presentation Skills Requirement	Course must be listed on the Academic Program of Study (GradPlan)
Annual Evaluation	Spring of each year
Seminar Requirement (<i>form required</i>)	Anytime
Comprehensive Examination (<i>form required</i>)	Can be taken when 80% or more of course program is completed
Application to Graduate	Semester of Proposed Graduation https://reg.msu.edu/ROInfo/Calendar/Academic.aspx
Final Oral Defense (<i>form required</i>)	See the University Calendar* https://grad.msu.edu/etd/etd-deadline-dates
Final Draft of Dissertation to Graduate School	See the University Calendar* https://grad.msu.edu/etd/etd-deadline-dates

V. THESES AND DISSERTATION DEFENSE DEADLINES

Students may defend their thesis/dissertation anytime during each semester, including winter break and spring break. If a student defends after the target dates listed in VI, the conferral of the degree will be the following semester. Students do not need to enroll in the semester in which the degree is conferred; however, students on graduate assistantships must be enrolled for 1 credit in the semester of the thesis/dissertation defense.

VI. ELECTRONIC SUBMISSIONS OF THESES & DISSERTATIONS

Michigan State University **only accepts** electronic theses and 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 below. **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 days to weeks, depending upon the extent of the necessary revisions and how diligent the author is when making the necessary revisions.

Electronic Submission's Approval Target Dates:

Fall 2023

- Submission deadline: August 9, 2023
- Final deadline: December 14, 2023

Spring 2024

- Submission deadline: April 17, 2024
- Final deadline: May 1, 2024

Summer 2024

- Submission deadline: July 31, 2024
- Final deadline: August 14, 2024

Fall 2024

- Submission deadline: November 25, 2024
- Final deadline: December 11, 2024

Graduation the semester of the electronic submission is only guaranteed if the document is **APPROVED** on or before the final date for that semester.

VII. EXIT SURVEYS

Students will complete an in-person exit survey with the PSM department chairperson following their thesis or dissertation defense. This is an informal meeting and provides each graduate student the opportunity to discuss their graduate student experience in PSM at Michigan State University. Once the defense date is scheduled, the PSM administrative assistant will schedule the meeting with the PSM department chairperson.

A short online exit survey for all students graduating with a Plan A or Plan B Master's or with a Doctoral degree becomes available to graduate students when they have applied for graduation. The survey asks questions about educational experiences in MSU graduate programs, as well as professional plans. The Graduate School uses data from this survey when reviewing graduate programs and to guide decisions about services and initiatives for graduate students. The identity of all respondents will be kept confidential and only aggregate (group) information will be made available to faculty and administrators. The students will receive an e-mail message from the dean of the graduate school with a link to the survey.

VIII. MENTORING OF GRADUATE STUDENTS

The graduate programs in the Department of Plant, Soil and Microbial Sciences are monitored by the Graduate Programs Committee. The Committee consists of five Department Faculty (one of whom serves as the Chair) and an ex-officio Graduate Programs Director. In addition to admission decisions, this committee implements policies established by the PSM Faculty, including oversight of academic progress of students and the appropriate mentoring of students by faculty. Toward that end, students and faculty have shared roles as outlined below.

A. Responsibilities of the Major Professor include:

- Advising the student on planning the program of study, including selection of academic courses.
- Ensuring that the student receives and understands information about requirements and policies of the graduate program.
- Advising the student on selection of a thesis or dissertation topic with realistic prospects for completion within an appropriate time frame.
- Conducting written annual evaluations on the student's progress.
- Completing and approving the final certification for the degree.

B. Responsibilities of the Student's Guidance Committee include:

- Advising, reviewing, and approving a student's program of study, and seeing that the student completes all requirements for the degree.
- Meeting with the student and reviewing his/her proposed thesis/dissertation research or Plan B research problem.
- Approving the student's thesis or dissertation.
- Administering the required comprehensive exam (Ph.D. students only) and the final exam.

C. Responsibilities of the Graduate Student include:

- **Safety.** Graduate students in CSS perform research in a variety of settings, including laboratories, greenhouses, and field research facilities. Because students may be exposed to hazardous materials while conducting research or participating in course work, it is imperative that students participate in the mandatory safety training session offered the PSM Department each semester. Additional information on safety is available at the website of the Office of Environmental Health & Safety at <https://ehs.msu.edu/>. Appropriate authorization forms may be required. If students have questions, they should consult the PSM Safety Officer, Dr. Kim Cassida.
- Learning and adhering to university and academic unit procedures and policies, including those related to use of equipment, space, telephones, office equipment and other policies provided to all new graduate students at the department orientation.
- Students need to meet the university and departmental requirements for degree completion and forming a guidance committee, in consultation with the student's major professor, that meets university, college and department requirements and policies.
- Following disciplinary and scholarly codes of ethics in coursework, thesis or dissertation research.
- Practicing uncompromising honesty and integrity according to university and federal guidelines in collecting and maintaining data.
- Seeking regulatory approval for research where appropriate.
 - **Research Involving Humans or Animals.** Federal and University regulations require that all research projects involving human subjects and materials of

human origin be reviewed and approved by an Institutional Review Board (IRB) before initiation. A human subject of research is an individual from whom an investigator obtains data by interaction or intervention or about whom the researcher obtains confidential information.

- For more information, please see the Human Research Protection Program (HRPP) web site at: <http://hrpp.msu.edu>. If your research involves animals, please consult the Institutional Animal Care & Use Committee (IACUC) Care web site at: <https://animalcare.msu.edu/iacuc/>.
- Keeping the major professor and guidance committee apprised on a regular basis of the progress toward completion of the thesis or dissertation.

IX. STUDENT CONDUCT AND CONFLICT RESOLUTION

The document entitled "**Graduate Student Rights and Responsibilities**", Michigan State University" is available in *Spartan Life: MSU Student Resource Guide and Handbook*, <https://spartanexperiences.msu.edu/about/handbook/index.html>. Students are expected to be familiar with its content, including those sections dealing with grievances brought by and against graduate students. Students may also seek other resources on how to avoid and deal with problems that may arise.

A. Conflict Resolution

At times there may be conflicts or confusion about policies that need to be resolved. If so, the first step is to discuss this with the major professor. If a solution to the problem cannot be attained, the student can then discuss the issue with the Department Chair or Graduate Program Director to find solutions.

B. Graduate Student Grievance Procedures

If issues and disputes that relate to violation of student academic rights or an allegation of academic misconduct arise, the Department Chairperson and Graduate Program Director serve as resource persons for these issues. If an informal procedure does not settle the issue(s), the student or other parties may file a formal grievance with the **Department Judiciary** following procedures set forth in the PSM Bylaws, Appendix A: Grievance Procedures for the Department of Plant, Soil, and Microbial Sciences. A copy of the PSM Bylaws is available on the PSM website.

The **office of the Ombudsperson** (<https://ombud.msu.edu/>) is also available to help all MSU graduate students in resolving resolve issues and disputes. Michigan State University has implemented a **telephone (1-800-763-0764) and web reporting Hotline** to help maintain adherence to ethical practices. The purpose of the Hotline is to provide an anonymous method to report known or suspected misconduct for Michigan State University related to fiscal matters, conflicts of interest, employment, medical/HIPAA, research, safety, athletics, discrimination/harassment, privacy, retaliation, or any other area of legal, policy, or ethical concern not specifically listed. One can choose to remain

anonymous or provide their name and contact information. Please see <https://misconduct.msu.edu/>

X. UNIVERSITY POLICY - DISSEMINATION OF GRADUATE STUDENTS' RESEARCH

A. In keeping with MSU's public mission, the University requires that theses, dissertations, and abstracts become public after the conferral of the degree; embargoes can only be pursued for a limited period (see [1] below). Results that are subject to restrictions for dissemination by funding agencies (see [2] below) cannot be part of any document submitted as a thesis or dissertation to the Graduate School.

1. Hold/embargo on publication of documents submitted to ProQuest:

Students submitting a thesis/dissertation to ProQuest now can request a hold/embargo of publication by ProQuest by contacting the Graduate School at msuetds.approval@grd.msu.edu. In response to the request, the Graduate School will send directly to the student a form that needs to be completed and turned to the Graduate School prior to submission of the document to ProQuest. The form needs to be signed by the student's major professor and by the Associate Dean of the student's college. The request for the hold/embargo may be for six months, one year or two years. Requests for a period longer than six months must include a written justification for the length of the hold/embargo.

2. Graduate Students' participating in University Research Organization (URO; <https://uro.egr.msu.edu/>):

Graduate students involved in a URO project will receive both written documentation and a verbal explanation of any limitations or implications to their current or future academic progress prior to participating on the project. Students engaging in work for a URO project undergo a 2-step approval process before hiring: a consultation with a representative of the URO's office to explain the restrictions on the project, and an interview with the Graduate School Dean or Dean's designee to discuss the relationship, if any, between their work as graduate students and their participation in the project. Students must be informed that results that are subject to restrictions for dissemination cannot be part of any document submitted as a thesis or dissertation. As part of their degree program, all graduate students must have research options to ensure the generation of appropriate results to fulfill the degree requirements, and to have data for professional development activities that are integral to their graduate education (e.g., presentations at conferences and research seminars).

XI. UNIVERSITY RESOURCES

A. Preparation of Master's Theses and Doctoral Dissertations: This describes the final procedures for degree completion and manuscript requirements for the thesis or

dissertation. It is available from The Graduate School, 118 Linton Hall, or on line at <https://grad.msu.edu/etd>.

- B. Office for International Students and Scholars (OISS): The Office for International Students and Scholars (OISS, <https://oiss.isp.msu.edu/>) serves international faculty and students. OISS is a resource center for information and consultation on matters related to the international student and faculty/scholars. The OISS is located in room 103 in the International Center.
- C. Olin Health Center Phone: 517-353-4510: The Student Health Service (<http://olin.msu.edu/>) is located in Olin Health Center. In the event of an emergency, go directly to Sparrow Hospital or McLaren Hospital.
- D. 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 MSU Ombuds person office provides the following free services to units upon request.
 - 1. **Unit Climate Assessment:** The Ombuds office will help you conduct a confidential assessment of your unit's climate. <https://ombud.msu.edu/education-training-assessments/assessments>
 - 2. **Presentations & Trainings:** The Ombuds office will deliver presentations and trainings that cover common topics such as principles of academic integrity, conflict resolution, decision making, FERPA, the role of the Ombuds office, and custom topics. These offerings can be tailored for faculty & staff, students, and/or the classroom. <https://ombud.msu.edu/education-training-assessments/presentations-trainings>
- E. The Graduate School: The Graduate School website is <http://grad.msu.edu>. This site contains a wealth of information and guidelines relevant to graduate students and graduate programs.
- F. Graduate Education Union: Information about, and the handbook for, the GEU can be found at the following web site: <http://www.geuatmsu.org/>.
- G. International Travel:
 - 1. Students traveling abroad should visit the "Travel Smart" website (<http://grad.msu.edu/travel/>) before their trip.
 - 2. Check the International Studies and Programs website for issues related to safety around the world. <https://www.isp.msu.edu/>.
 - 3. Apply for assistance with travel funding via the Graduate School. If the Graduate School provides funding, they will also provide a MEDEX emergency card.

- H.** Diversity, Equity, and Inclusion (DEI) - all students must complete MSU's online DEI training. [Visit the Training page](#) from MSU's Office of Regulatory Affairs for FAQs and the link to take the training in the Ability system and watch for updates as this requirement evolves.

APPENDIX A

Statistics and other Courses taken by many CSS Graduate Students

Most graduate students that have not had statistics take STT 464 Statistics for Biologists fall semester followed by STT 814 Advanced Statistics for Biologists spring semester. Some students take IBIO 830 and IBO 831 (Stat Meth Ecol and Evol I and II). There are other statistics courses for graduate students offered at Michigan State University. These include:

- IBIO 896 Population and Community Ecology
- IBIO 898 Pop and Comm Eco Theory Lab
- IBIO 845 Multi-disciplinary research methods for the Study of Evolution
- HRT 841 Foundation in Computational and Plant Sciences *R and Python*
- CMSE 801 Introduction to Computational Modeling and Data Analysis
- CMSE 802 Methods in Computational Modeling
- CMSE 820 Mathematical Foundations of Data Science
- CMSE 890 Bioinformatics: Stats Analysis and Visualization of Biological Data
- CMSE 890 Gaps, Errors and Missteps in Statistical Data Analysis
- FW 849 Applied Bayesian Inference Monte Carlo Methods Quant. Biologists
- FOR 875 R Programming for Data Sciences (*summer semester only*)
- FOR 859 Gender, Justice, and Environmental Change: Methods and Application
- STT 465 Bayesian Statistical Methods
- STT 843 Multivariate Analysis

400 and 800 level courses offered at MSU and taken by CSS graduate students (this list includes CSS, PLP, PLB, HRT courses and is not all inclusive of the courses taken by graduate students)

- CSS 420 Cover Crops in Agroecosystems - Fall
- CSS 424 Sustainable Ag and Food Systems: Integration and Synthesis – Spring
- CSS/MMG 425 Microbial Ecology - Fall
- CSS 431 International Cropping Systems - Spring
- CSS 441 Plant Breeding and Biotechnology - Spring
- CSS 442 Agricultural Ecology - Fall
- CSS 451 Biotechnology Applications for Plant Breeding and Genetics - Spring
- CSS 460 Plant – Microbe Interactions - Spring
- CSS/STT 464 Statistics for Biologists - Fall
- CSS 467 Bioenergy Feedstock Production - Fall
- CSS 470 Soil Resources - Fall
- CSS/ENT 477 Pesticides in Pest Management - Fall even years
- CSS 480 Soil Fertility and Management - Fall
- CSS 485 Physiology in Plant Nutrition - Spring
- CSS 486 Biotechnology in Agriculture: Applications and Ethical Issues - Fall even years
- CSS 488 Integrated Cropping Systems - Spring
- CSS 802 Weed Biology - Spring even years

- CSS 805 Herbicide Action and Metabolism - Spring odd years
 - CSS/STT 814 Advanced Statistics for Biologists - Spring
 - CSS 819 Advanced Plant Breeding - Fall even years
 - CSS 820 Plant Reproductive Biology and Polyploidy – Spring odd years
 - CSS 824 Sustainable Agriculture and Farming Systems Field Practicum - Fall
 - CSS 826 Sustainable Agriculture and Farming Systems Capstone Seminar - Spring
 - CSS 829 Computational and Applied Plant Breeding - Spring odd years
 - CSS 841 Foundation in Computational and Plant Sciences - Fall
 - CSS 843 Forum in Computational and Plant Science - Fall, Spring
 - CSS 844 Frontiers in Computational & Plant Sciences - Spring
 - CSS 845 Environmental Soil Physics - Spring even years
 - CSS 846 Integrated Climate and Cropping System Modeling - Spring odd years
 - CSS 850 Soil Chemistry - Spring
 - CSS 865 Environmental Fate of Organic Contaminants in Soils - Spring even years
 - CSS 880 Scientific Communication and Professional Development - Spring
 - CSS 891 Current Topics in Ecology and Evolution - Summer
 - CSS 891B Selected Topics in Plant Breeding and Genetics - Fall, Spring, or Summer
 - CSS 892 Plant Breeding and Genetics Seminar - Fall, Spring, or Summer
 - CSS 893 Molecular Resistance Evolution - Spring even years
 - CSS 941 Quantitative Genetics Plant Breeding - Spring even years
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- PLP 405 Plant Pathology - Spring
 - PLP 407 Diseases and Insects of Forest and Shade Trees - Spring
 - PLP 805 Principles in Plant Pathology - Fall
 - PLP 812 Epidemiology of Plant Diseases - Spring odd years
 - PLP 820 Plant Reproductive Biology and Polyploidy - Spring odd years
 - PLP 847 Advanced Mycology - Fall even years
 - PLP 850 Physiological Plant Pathology - Fall even years
 - PLP 881 Molecular and Biochemical Plant Pathology - Spring even years
 - PLP 884 Prokaryotic Diseases of Plants - Spring odd years
 - PLP 885 Plant Diseases in the Field - Summer odd years
 - PLP 894 Seminar in Plant Pathology - Fall, Spring
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- PLB 402 Biology of Fungi - Fall odd years
 - PLB 441 Plant Ecology - Fall
 - PLB 801 Foundations of Plant Biology - Fall
 - PLB 812 Plant Genomics - Fall
 - PLB 843 Forum in Computational Plant Sciences - Fall, Spring
 - PLB 856 Plant Molecular and Omic Biology - Fall
 - PLB 863 Environmental Plant Physiology - Spring odd years
 - PLB/BMB 864 Plant Specialized Metabolism - Spring even years
 - PLB/BMB 866 Molecular Plant Physiology - Spring
 - HRT 860 Scientific Writing: Workshop - Spring

APPENDIX B

Graduate Student Academic Grievance Hearing Procedures for the Department of Plant, Soil, and Microbial Sciences

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, Soil and Microbial Sciences** 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, SOIL AND MICROBIAL SCIENCES 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 Program shall constitute a Hearing Board pool no later than the end of the tenth week of the spring semester according to established Program procedures. 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 faculty member with rank who shall vote only in the event of a tie. In addition to the Chair, the Hearing Board shall include an equal number of voting graduate students and faculty. (See GSRR 5.1.2, and 5.1.5.)
- C. The Program 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 and appropriate unit administrator, 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.
 - 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 designee. (See GSRR 5.1.7.)
 - 4. send the Hearing Board members a copy of the request for a hearing and the 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. 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, hear the case in the respondent's 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 a "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 a "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 the "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 PSM Faculty May 5, 2017