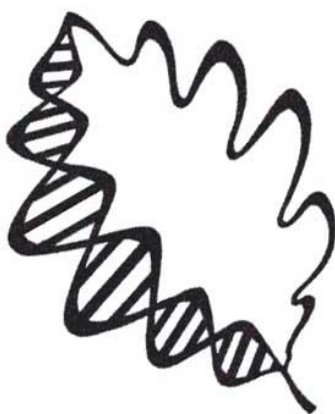


Plant Biological Sciences Graduate Program Handbook

University of Minnesota



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TABLE OF CONTENTS

Introduction	4
Welcome	
Purpose of handbook	
Sources of information	
Part 1. Graduate Student Policies and Guidelines	6
Degrees Awarded.....	6
Admission of Prospective Students.....	6
Undergraduate Degree and Course Requirements.....	6
Application Process.....	6
Graduate School Admission Application.....	7
Applicants from Non-English Speaking Countries.....	7
Application Evaluation Criteria.....	8
Advisor and Advisory Committee.....	8
Plant Biological Sciences Colloquium.....	9
Degree Requirements for Doctor of Philosophy.....	10
Required Courses PhD.....	10
Laboratory Rotations.....	11
Degree Program Form.....	11
Preliminary Written Examination.....	11
Preliminary Oral Examination.....	14
Teaching Experience.....	15
Seminar Requirement.....	15
Final Oral Exam.....	15
Doctoral Degree Requirement for Graduation.....	16
Ph.D. Degree Program Timeline Form.....	17
Degree Requirements for Master of Science - Plan A, Thesis.....	18
General Degree Requirements.....	18
Required Courses M.S. Plan A.....	18
Thesis Proposal.....	19
Teaching Experience.....	19
Research Seminar.....	20
Final Oral Exam.....	20
M.S. Degree Program Timeline Form – Plan A.....	21
Degree Requirements for Master of Science - Plan B, Without Thesis.....	22
General Degree Requirements.....	22
Required Courses M.S. Plan B.....	22
Proposal Paper.....	23
Teaching Experience.....	23
Final Oral Exam.....	23
M.S. Degree Program Timeline Form – Plan B.....	24
Master’s Degree Requirements for Graduation.....	25
Procedures to Monitor Student Degree Progress.....	26
Advisory Committee Meeting.....	27
Leave of Absence.....	27

Annual Evaluation Form	28
Registration.....	29
Grad 999	29
Termination of Graduate Status.....	30
Minor in Plant Biological Sciences	31

Part 2. Program Structure and Administration

Goals.....	31
Annual Retreat	31
Changes in Procedures and Policies	31
Administrative Structure	32
Department of Plant Biology.....	32
Elected Positions	32
Director of Graduate Studies	32
Associate Director of Graduate Studies.....	32
Steering Committee	32
Appointed Committees.....	33
Student Participation in Program Activities	35
Graduate Faculty.....	35
Membership.....	35
Criteria for continued membership.....	36
Identification of Faculty Specialization Areas	37
Program Faculty Meetings.....	37

Part 3. General Information

Introduction	37
Employment and Appointment Types	37
Length of Stay and Funding Priorities	38
Grievance Policy and Procedures	38
Academic and Employment Issues	38
Graduate Assistant Performance Issues	39
Student Conduct Code.....	39
Statement on Sexual Harassment	39
Statement on Equal Opportunity.....	39
Discrimination.....	39
Unpaid and Paid Leaves.....	40
Accident Reporting	41
Safety Training.....	41
Counseling, Mediation.....	42
Sources of Other Information and Programs	43
Appendix A.	46
Table 1. Class Schedule.....	47

INTRODUCTION

WELCOME

The graduate faculty and staff associated with the Plant Biological Sciences Graduate Program extend our welcome to new students entering the program. We intend to provide all students with the opportunities and academic atmosphere conducive to a successful and rewarding experience as graduate students in the program. We invite you to participate fully in all aspects of the program and to interact with faculty and students across the broad spectrum of areas included in Plant Biological Sciences at the University of Minnesota.

Plant Biological Sciences encompass all aspects of the basic biology of higher and lower plants and fungi. Major emphases include molecular and physiological approaches to development; physiological, structural, and functional studies at the cellular and organismal levels; systematic and evolutionary biology; molecular genetics and applied biotechnology; as well as development of proteomic and metabolomic approaches to a range of fundamental questions in plant science. Program faculty are members of plant-oriented departments in the College of Food, Agricultural, Natural Resource Sciences, the College of Biological Sciences, both on the Twin Cities campus, and the Swenson College of Science and Engineering on the Duluth campus. Students in the program have the opportunity to study plants and fungi from the molecular to the whole plant and community levels of biological organization. Opportunities also exist for laboratory and field research at state, national, and international levels.

PURPOSE OF HANDBOOK

This handbook is the single operational document specific to the Plant Biological Sciences Graduate Program. Part One contains policies, requirements, and other guidelines pertaining primarily to graduate students. These have been adopted and approved by the graduate faculty of the Plant Biological Sciences program since its inception in 1990. Part Two describes the operational and administrative policies and guidelines of the program that have been adopted and approved. Any modifications in Parts One and Two adopted after the revision date of this handbook will be distributed immediately to all students and faculty of the program. Part Three contains general information that is not a part of the Plant Biological Sciences Graduate Program policies, but may be useful to students and faculty from time to time. Please refer all questions concerning information in this handbook to the current Director or Associate Director of Graduate Studies of the Plant Biological Sciences Graduate Program or to the Program Coordinator.

SOURCES OF INFORMATION

The University of Minnesota Graduate School Catalog contains the general policies and information pertaining to all graduate students and should be used in conjunction with this Handbook. The Graduate School Catalog is printed every 2 years and can be obtained from 303

Johnston Hall or at <http://www.catalogs.umn.edu/grad/index.html> Other information about graduate school and graduate student life, including a “What's New?” section, is available at <http://www.grad.umn.edu> Most forms are also available and can be read and downloaded using Adobe Acrobat.

Other general informational sources that may be useful at various times include:

Graduate Student Handbook - general information for all students, revised annually by the Graduate School and available at 306 Johnston Hall
http://www.grad.umn.edu/current_students/handbook/

Handbook for Graduate Assistants - specific information for students who hold appointments as Teaching Assistants, Research Assistants or Administrative Fellows, revised annually and available from The Graduate Assistant Office, Donhowe Bldg, 2nd floor, 319 15th Avenue SE, Minneapolis, MN 55455. Hours are Monday through Friday, 8:00 – 4:30 p.m.

<http://www.umn.edu/ohr/gae>

Email: gaoinfo@tc.umn.edu

Ph: 612- 625-7070; Fax: 612-625-9801.

Information and Instructions for New Graduate Students - included with admission letter the Graduate School sends to all newly admitted domestic students.

Information and Instructions for New International Students - included with admission letter the Graduate School sends to all newly admitted international students.

The GRAD LETTER - The Council of Graduate Students at the University of Minnesota newsletter. <http://www.cogs.umn.edu>

Plant Biological Sciences Graduate Program Faculty Research Interests
<http://www.cbs.umn.edu/plantbio/gradprog/research/>

Plant Biological Sciences Graduate Program Handbook

PART ONE: GRADUATE STUDENT POLICIES AND GUIDELINES

I. DEGREES AWARDED

The Plant Biological Sciences (PBS) Graduate Program offers Doctor of Philosophy (Ph.D.) and Masters of Science (M.S.) Degrees. The Ph.D. degree is awarded chiefly in recognition of high attainment and ability in a special subject field as demonstrated by passing the required examinations covering both a candidate's general and special subject fields, and by preparing and successfully defending a thesis based on original research that makes a significant contribution to knowledge in the student's field. The M.S. degree is offered under two plans: Plan A, requiring a thesis, and Plan B, which substitutes additional coursework and special projects for the thesis. Approximately 90 % of the graduate students in the PBS program pursue the Ph. D. degree directly without a M.S. degree. The other students are either pursuing only a M.S. degree or have received a M.S. from this or another institution and are continuing their study for a Ph.D.

II. ADMISSION OF PROSPECTIVE STUDENTS

A. UNDERGRADUATE DEGREE AND COURSE REQUIREMENTS

Incoming graduate students must have a BS, BA, or equivalent undergraduate degree at an accredited institution of higher education. It is desired that applicants have a GPA of 3.0 or better on a 4-point grading scale (or equivalent). Admitted students are expected to have completed coursework in plant and animal biology, genetics, organic and inorganic chemistry, differential and integral calculus, and physics. For students with demonstrated academic abilities, coursework deficiencies can be filled during the first year of graduate study. For information on preparing a competitive application, see section D below.

B. APPLICATION PROCESS – Two application forms must be submitted with supplemental materials: The PBS graduate program office requires an application, and the Minnesota Graduate School also requires completion of their on-line application. The PBS materials can be either emailed to pbiogp@umn.edu; faxed to 612-625-1738 or sent by US mail to the address below:

1. Plant Biological Sciences Graduate Program Admission Application
Plant Biological Sciences Graduate Program
Room 250 Biological Sciences Center
University of Minnesota, Department of Plant Biology

1445 Gortner Avenue
St. Paul, MN 55108-1095

To be considered, the PBS complete application materials must include:

- Plant Biological Sciences Graduate Program's application
- Copies of transcripts from each college or university attended, including the University of Minnesota
- Three letters of recommendation (can be emailed with signature to the program or sent through the US mail or put in Apply yourself the Graduate School's on-line application system)
- A statement of career objectives, teaching/research experience, and publications
- Copies of scores from the Graduate Record Exam General Test; subject test is not required
- Copies of the TOEFL (Test of English as Foreign Language) scores
(international students only)

To ensure full consideration for fellowships and assistantships, the complete set of materials must be received in the PBS program office by December 15th. Applications received at later dates will be considered when positions are available.

2. Graduate School Admission Application

The on-line application form for Admission to the Graduate School may be found at http://www.grad.umn.edu/prospective_students/. The Graduate School also requires additional materials to be submitted: see the on-line application (official transcripts, personal statement, etc). The application fee of \$55.00 for U.S. applicants and permanent residents; \$75.00 (U.S.) for international applicants submitted in the form of a bank draft drawn on a U.S. bank, must be sent to the Graduate School as indicated on the form. Official notice of acceptance by the Graduate School is required to enter the graduate program and to hold fellowships or assistantships.

C. APPLICANTS FROM NON-ENGLISH SPEAKING COUNTRIES

Verbal and written communications are integral facets of the Plant Biological Sciences Graduate Program and consistent with the Graduate School requirements the TOEFL test is required for non-English language international students..

- The cost of the new internet-based TOEFL test is \$140. The score range on the internet test is 0-120 (Graduate School minimums are a total score of 79 plus 21 on the Writing section and 19 on the Reading section).
- The score range on the computer test is 0-300 (Graduate School minimum is 213).
- The score range on the paper test is 310-677 (Graduate School minimum is 550).

After establishing residency at the University of Minnesota, international students are required to pass the Spoken English Assessment Kit (SPEAK) test offered by the Center for Teaching and Learning (preferably in the first semester). Before holding a teaching assistantship position international students will need to pass the SPEAK test. (612-625-3041;

<http://www1.umn.edu/ohr/teachlearn/>. Scores of 55-60 make an individual eligible for a teaching assignment.

Classes in English as a Second Language are offered for credit directly through the University. For more information on these classes, you can visit the Institute of Linguistics, ESL, and Slavic Languages and Literatures website at <http://www.iles.umn.edu> Classes will be available in grammar, listening, speaking (including pronunciation), reading, and composition at two levels. Placement will be based on recent TOEFL scores.

D. APPLICATION EVALUATION CRITERIA

Completed applications are reviewed by the Admissions Committee of the Plant Biological Sciences Graduate Program. Factors generally given the highest weight include: undergraduate and graduate GPA; upper division GPA trend; the applicant's written statement of career objectives; recommendation letters; GRE scores (preferred performance level is a minimum of 60% in each category) and TOEFL scores (see above).. Other important evaluation criteria include: career objectives, research and work experience; quality of the institution; and publications.

The Admissions Committee reviews applications in two stages. First, they invite a group of outstanding domestic doctoral and MS candidates to visit Minnesota during a Welcome Weekend. At this event, the candidates meet the faculty and students and learn about many aspects of the graduate program. Selected students are notified as soon as possible so that the program staff can provide assistance with travel arrangements. Some candidates invited to the Welcome Weekend may not be offered admission, while others not invited to the Welcome Weekend may ultimately be admitted.

After the Welcome Weekend the Admissions Committee begins to formally admit students. All Doctoral and Master's candidates can **expect notification of acceptance no later than mid-April**.

ADVISOR AND ADVISORY COMMITTEE

Each student will have a program faculty advisor from the start of their graduate program. The Director of Graduate Studies (DGS) will typically serve as the temporary advisor for students until a thesis research advisor is identified. A thesis research advisor should be arranged by the end of typically three laboratory research rotations for most students during their first year, unless one is identified at the start of the program. Students are encouraged to hold discussions about potential thesis research projects with appropriate faculty during the first semester. In some cases students will be contacted by individual faculty about research opportunities, but it is the student's responsibility to seek out and find potential research advisors. Students who would like to change advisors before completing the current degree program should consult and work with the DGS to do so.

The DGS and the Ph.D. student will identify a first year four-person Advisory Committee at the beginning of the student's program. The Advisory Committee will consist of the advisor (initially this would typically be the DGS) and three other faculty from the student's area of interest. The committee will usually include two faculty representing the PBS program and one faculty member representing a supporting program or minor. Students pursuing a Masters degree need to identify a three-person Advisory Committee (two in the major; one from the minor or supporting program) to plan an appropriate course program and sequence of courses, as well as possible lab rotations. Once an advisor is formally identified (typically at the start of the second semester but in all cases before the end of the second semester), an Advisory Committee consisting of five faculty members (3 from the PBS program and 2 from supporting programs) will be established. The functions of the Advisory Committee is to ensure that the student is clearly informed of all program steps and requirements for the degree, oversee the establishment of the student's course program and approve the Degree Program/Transmittal Forms (GS89a/b), provide advice about and approve a thesis proposal, and conduct annual evaluations of student performance.

Advisory Committees should, as an absolute minimum, meet with students twice during the first year and at least once a year in years 2-4, and additionally as requested by the student, advisor, or the committee. Beginning in year five and continuing until degree completion, Ph.D. students are required to meet twice each year with the advisory committee (see p. 24). The student is responsible for scheduling these meetings. The functions of the Advisory Committee are distinct from those of the student's Preliminary Written Examining Committee, the Preliminary Oral Examining Committee and the Final Oral Examining Committee; although some or all of the Advisory Committee members may serve on the examination committees. Advisory Committee membership may be adjusted as appropriate by the DGS in consultation with the advisor and the initial Advisory Committee.

Each student's course program is planned to meet individual requirements within the framework of a multidisciplinary core of coursework. Course requirements are based on the individual's past training and future goals. Each student works with their Advisory Committee to devise the most appropriate course program. Students should meet with their Advisory Committee to devise a plan of coursework to satisfy their specific goals and fill in gaps in their background. The Advisory Committee must approve the course program before the student can submit the official Degree Program/Transmittal Forms (GS89a/b) to the DGS and Graduate School.

Students are encouraged to design their course program by selecting courses from four disciplinary areas within the PBS program: Plant cell/molecular biology, Plant physiology; Structure, development and evolution; and Ecology and Evolution. Courses that will satisfy program major and supporting coursework or minor requirements are listed in Table 1 (see at the end of the handbook) for each disciplinary area.

PLANT BIOLOGICAL SCIENCES COLLOQUIUM

All graduate students and faculty are expected to attend the Plant Biological Sciences

Colloquium seminars unless there are conflicts with classes or teaching obligations. These seminars are held from 3:30 to 4:30 each Tuesday during fall and spring semesters. The opportunity to hear and meet invited campus and off-campus speakers is an important component of the graduate student experience.

III. DEGREE REQUIREMENTS FOR DOCTOR OF PHILOSOPHY – Ph.D.

The program should be completed in 3 to 4 years for students holding an MS degree and in 4 to 5 years for students holding a BS degree. A minimum GPA of 3.0 is required. All requirements for the Doctoral Degree must be completed within 5 calendar years after passing the Preliminary Oral Examination.

A. REQUIRED COURSES – PH.D.

Course requirements for Ph.D. students include the courses listed below, 24 thesis credits and 12 credits in the minor or supporting field.

PBIO 5960 (SEC 002) Itasca PBS Graduate Student Experience (orientation) – 1 credit

All incoming students are expected to register for and attend the Itasca Orientation Workshop held each year before the beginning of fall semester. The goals of the workshop are to foster interactions among students and faculty; and to introduce the students to research design and techniques; and to provide orientation and advising for new students.

PBS 8081 – Integrative Plant Biology: Connecting Molecules to Ecosystems - 3 credits (fall only)

PBS 8900 (SEC 001) PBS Colloquium – 1 credit (register 1st semester)

Regular attendance at the Plant Biological Sciences Colloquium is expected. (Held every Tuesday from 3:30-4:30 during the academic year).

PBS 8900 (SEC 003) – Graduate Student Seminar - 2 credits (taken 1st and 5th semester; 1 credit per semester – offered fall semester only)

The goal of this seminar is to foster interaction among the students AND to expose students to the breadth of research in plant biology. First-year students take seminar to listen to other students' research. Third-year students present their thesis proposals in this seminar.

PBS 8901 Preparation of Research Proposal – 1 credit (take 3rd semester; offered in fall only). This course prepares students for the Preliminary Written Examination by providing instruction and feedback for the writing of an original research proposal.

PBS 8123 - Research Ethics in Plant and Environmental Sciences – 0.5 credit (offered spring semester only)

PBS 8888 – Doctoral Thesis Credits (24 credits); register for these the two semesters after passing the preliminary oral examination

PBS 8444 – FTE Doctoral (1 credit); register for this after completing the 24 thesis credits

PBS 8994 Directed Research (1-5 credits; A-F grade option) register first semester while conducting rotations

Grad 8101 - Teaching in Higher Education- 3 credits (A-F grade option). This course must be taken prior to or concurrent with students fulfilling their teaching requirement.

Optional PBS course

PBS 8910 Journal Club (offered at least once per academic year)

Courses taken as part of the MS degree requirements at the University of Minnesota or at another institution may be used to meet the 12 credits required for the minor or supporting field. Only courses with grades of “S”, “C”, or better may be included on any degree program form. Only two 4000 level courses can be applied toward the Ph.D. degree course requirements; however, exceptions may be granted with approval of all members of a student's advisory committee and the DGS. The Advisory Committee must approve the coursework section of the degree program first before the student can submit the official Degree Program/Transmittal Forms (GS89a/b) to the DGS and Graduate School. The student must submit the official Degree Program/Transmittal Forms no later than the 3rd semester of registration.

B. LABORATORY ROTATIONS

First year Ph.D. students supported on Plant Biological Sciences Research Assistantships will be required to conduct two to three laboratory rotations. Laboratory rotations, in the first semester only, must be taken for credit, and students should register for 1-5 credits in PBS 8994, Directed Research (A-F grade option). A permission number is required for this course, and you will receive this from the PBS coordinator. Laboratory rotations are designed by the participating faculty to expose graduate students to different research areas, specialized techniques and approaches, and to assist in identifying thesis research projects and advisors as well as potential committee members.

C. DEGREE PROGRAM FORM

Students are expected to file an official program for the degree during their second year of study. Students should submit their completed degree program form (GS89a/b) to the Graduate School at least one semester before the term in which they plan to take the preliminary oral examination. The form should list all coursework, completed and proposed, that will be offered in fulfillment of degree requirements in the major field and in the minor field or supporting program, including any transfer work. It is recommended that coursework that is planned to be taken, but that is *not specifically required for fulfillment of degree requirements*, be left off the form.

D. PRELIMINARY WRITTEN EXAMINATION – Original Thesis Proposal

During fall semester of the second year, all Ph.D. students are required to take PBio 8901, "Thesis Proposal Writing Course," a one-credit course focused on the preparation of research proposals. This course will provide instruction on techniques for writing effective proposals, but will also facilitate peer evaluation of ideas and proposals during their development.

The Preliminary Written Examination shall consist of an original research thesis proposal written by the student. The proposal will focus on the student's doctoral dissertation research. The proposal shall (1) set forth an original hypothesis on an unsolved problem or state the questions to be addressed or analyses to be performed (for discovery research that is not hypothesis-driven), (2) provide a critical review of the relevant literature leading to the hypothesis or to the questions posed or proposed analyses, (3) state the significance of the problem or the need for the research, (4) outline the specific goals, and (5) provide an effective experimental design to test the hypothesis or analyze the data collected, including a discussion of expected outcomes and alternative possibilities. In their Preliminary Written Examination proposal, students are encouraged to use several approaches, if feasible, to evaluate the validity of the hypothesis or to provide the desired information. The proposed research must be of sufficient breadth and importance to produce an acceptable Ph.D. dissertation. The total length of the proposal is limited to 15 pages of double-spaced 12-point type including figure legends and tables but excluding figures and references.

Since this is an examination, the proposal must be of the student's own creation. Students may **not** use material from any research grant applications written by their adviser(s) in preparing the proposals. However, the proposals should focus on or be related to the student's dissertation research. **Students should consult with their advisers, members of their laboratory, their advisory and examining committee members, and other students and faculty when developing background materials, the general concepts, experimental designs, and the outline for their Preliminary Written Examination proposal.** However, each Preliminary Written Examination proposal must be a unique formulation of ideas prepared solely by the student. **To ensure this intellectual independence, a student's primary adviser(s) may not read or edit the proposal prior to submission.** (A student's actual dissertation research will be determined jointly by the student and the adviser, with input from the student's advisory committee.)

For students working in areas where National Science Foundation Doctoral Dissertation Improvement Grants are available (for example, population biology, evolution, and ecology), the proposal may be written in the format required by NSF for submission of Doctoral Dissertation Improvement Grant Applications (see <http://www.ehr.nsf.gov/dge/programs/grf/>, <http://www.nsf.gov/pubs/2001/nsf98151/nsf98151.htm> and <http://www.nsf.gov/bfa/cpo/gpg>

For students in other areas, the proposal can be written as a NSF research proposal (http://www.nsf.gov/home/grants/grants_prep.htm). Students are encouraged to submit these proposals to NSF when their Preliminary Written Examining Committee members agree that the proposal is competitive for funding.

The Preliminary Written Examination proposal should be submitted to the PBS office along with the names of the student's examining committee members by January 30 of the Spring semester of the second year, unless a different date is designated by the student's Preliminary Written Examination Committee and approved by the Director of Graduate Studies. By the time of proposal submission the student should have filed the Graduate School's Degree Program Forms (GS89a), which includes assignment of the student's Preliminary Oral Examining Committee.

Preliminary Written Examining Committee and Proposal Evaluation

The student, student's adviser, and the student's Advisory Committee need to identify the Preliminary Written Examining Committee members. The Preliminary Written Examining Committee normally includes four **voting** members (not including the student's adviser); two members from the major field and two from the minor field or supporting program. In cases where a student is co-advised, the examination committee may consist of as few as three voting members at least one of whom is from a minor field or supporting program. **The student's adviser and their co-advisers, serve as non-voting members of the Preliminary Written Examining Committee.** Members of the student's Advisory Committee may, and typically do, serve on this committee. The Preliminary Written Examining Committee members will evaluate the proposal and decide on one of the following outcomes.

a. Acceptable: If all voting members of the student's Preliminary Written Examining Committee vote that the proposal is acceptable, the student passes the examination.

b. Acceptable, in principle, but needs revision: The general problem and approach are reasonable, but significant flaws exist that need to be corrected before the proposal is acceptable. If revisions are required, the committee must meet together with the student and the advisor to discuss the proposal. The chair should summarize the expectations of the committee in a letter to the student (send copy to PBS program office). At the discretion of the Examining Committee, the student may be allowed to exceed the 15-page limit in the revised proposal. **As a non-voting member of the exam committee, the role of the advisor(s) is to read the proposal, meet with the committee, and contribute to the committee's instructions to the student regarding revision of the proposal.**

If the majority of the Committee agrees that the revised proposal is acceptable, the student passes the examination.

If the majority of the Committee rates the revised proposal not acceptable, the student fails the examination and will not be allowed to continue in the Ph. D. program.

c. Unacceptable: The proposal contains fundamental flaws that cannot be remedied by a rewrite. If the majority of the Committee votes that the proposal is unacceptable, the student fails the examination and will not be allowed to continue in the Ph.D. program.

Preliminary Written Examination Suggested Timeline

Fall semester second year – register for PBS 8901, Preparation of Research Proposals

January 30 spring semester of second year – unless an alternative schedule has been pre-approved by the student's Preliminary Written Examination Committee and approved by the DGS, turn in the Prelim Written Exam Thesis Proposal to PBS program office (hard copy and electronic) by this date. The committee reviews the proposal over the next two weeks.

February 15 spring semester of second year – committee provides the results of the examination to the student.

March 15 - If revisions are needed, the student will have one month to revise the proposal, unless the student's Preliminary Written Examination Committee assigns a different schedule and it is approved by the Director of Graduate Studies. The student should give a paper copy of the revised proposal to the PBS program office and should send the revised electronic proposal to the committee members.

Deviations from the time schedule will typically be granted for legitimate reasons provided the request for deviation is submitted at least 2 weeks in advance of the January 30 deadline and the request is submitted by the student with the signed approval of the examination committee. The DGS, may approve or reject the request for deviation. The DGS will inform the student of the decision, typically within 3 days of receiving the request, or will call a meeting of the student's Preliminary Written Examination Committee if the reason requires additional consultation.

Concerns about the Written Preliminary Examination Outcome. If a student believes the Written Preliminary Examination was not conducted fairly, they can petition the Director of Graduate Studies to address their concerns. Further action will be taken at the discretion of the DGS but will most likely involve submitting the proposal to an independent *ad hoc* Examining Committee for reevaluation.

E. PRELIMINARY ORAL EXAMINATION

The Preliminary Oral Examination should be scheduled soon after passing the Preliminary Written Examination, no later than the end of the third year of residency. The examination is administered by a committee appointed by the dean of the Graduate School on recommendation of the faculty in the major field at the time the student's official doctoral degree program is approved. The student, student's advisor, and the student's Advisory Committee need to identify and recommend members and a chair of the Preliminary Oral Examining Committee. The Preliminary Oral Examining Committee includes a minimum of five members; three (including the student's advisor) from the major field and two from the minor field or supporting program. Committee members cannot represent more than one field simultaneously. Members of the student's Advisory Committee or Preliminary Written Examining Committee typically serve on the oral examination committee, but this is not required.

The Preliminary Oral Examination is generally designed to evaluate the student's comprehension of his/her area of specialization; however, it may include broader concepts, such as relationships among disciplinary areas within plant biological sciences. After passing the Preliminary Written Examination, the student may revise the proposal after consulting with her or his adviser. The revised thesis research proposal may be presented and defended at the Preliminary Oral Examination, with the consent of the Preliminary Oral Examining Committee. The Committee

may choose to change the format of the Preliminary Oral Examination at any time, either prior to or during the examination, as it deems necessary, to most effectively evaluate the student's competency in the field of plant biology.

Candidacy for the degree is established after the Preliminary Oral Examination has been passed.

F. TEACHING EXPERIENCE

All Ph.D. students are required to participate for 1 semester (a minimum quarter time, approximately 10 hrs/week, assignment) in a teaching or training experience. During the teaching experience, students may be appointed to a teaching assistant position but this is not necessary and they may continue on a research assistantship or fellowship. Prior to or concurrent with the student's involvement as a teaching assistant, he/she will be required to take one teaching improvement course (Grad 8101, Teaching in Higher Education; A-F grade option). Students with an equivalent prior teaching experience may petition the DGS to waive or modify the course or teaching experience requirement upon recommendation of the Advisory Committee. The requirement for MS students counts towards the Ph.D. teaching requirement.

University of Minnesota policy requires that all international students must pass the English oral proficiency tests (Test of Spoken English or the SPEAK Test) and, if necessary, complete one or more semesters of the TA English Program's course in Classroom Communication Skills for TAs and pass the readiness-to-teach test before they can be assigned to teaching duties. It is recommended that all international students take their SPEAK test before the start of the first semester or within the first semester. Visit the Center for Teaching and Learning Services website at <http://www1.umn.edu/ohr/teachlearn/index.html>.

G. SEMINAR REQUIREMENT

All Ph.D. students are required to present a one-credit seminar in PBS 8900 (SEC 003) (S/N only). The seminar is to be presented in the student's 5th semester and will deal with the subject matter of the thesis proposal.

H. FINAL ORAL EXAMINATION

The Final Oral Examination will be held after completion of the thesis research. A public seminar presentation of the research project is a required part of the final exam. Schedule your final seminar with the PBS coordinator.

The chair and other members of the Final Oral Examining Committee are appointed by the dean of the Graduate School upon recommendation of the faculty in the major field at the time the student's thesis proposal is approved. The student, student's advisor, and the student's Advisory Committee need to identify and recommend who the Final Oral Examination Committee members will be. The committee must consist minimally of five members: three (including the

student's adviser) from the major field and two from the minor field or supporting program. At least one committee member from the minor field or supporting program should represent a graduate program and budgetary unit other than that of the student's major. Committee members cannot represent more than one field simultaneously.

Although the student's adviser serves as a member of the Final Oral Examining Committee, another member of the committee is designated as the chair and functions in this capacity at the final oral examination. The chair must be a full member of the graduate faculty and may be from either the major field or the minor field or supporting program.

A bound copy of the thesis must be submitted to the PBS program office.

Doctoral Degree Requirements for Graduation

Graduate School requirements for graduation are listed below. Unless stated otherwise, you should submit all forms to 316 Johnston Hall. Forms may be downloaded from <http://www.grad.umn.edu>
Note: all students must submit an Application for Degree to 200 Fraser Hall or 130 Coffey Hall on or before the first working day of the intended month of graduation.

1. Degree Program submission is based on PBS program requirements, but must be filed with the Graduate School *no later than one term* prior to your Preliminary Oral Exam.
2. After completion of all Preliminary Written Exams and *at least* one week before the Preliminary Oral Exam, submit the Preliminary Written Examination Report form.
3. Schedule the Preliminary Oral with The Graduate School *at least* one week in advance of the exam. The Prelim Oral must take place at least one academic term (15 weeks) before the Final Oral Defense.
4. Within one working day of completion of the Prelim Oral exam, the student must submit the signed Preliminary Oral Examination Report form.
5. One term after passing the Preliminary Oral Examination submit a Thesis Proposal form.
6. Anytime after the Thesis Proposal has been approved by The Graduate School, request a [graduation packet](#) either online or by visiting 316 Johnston Hall. The Thesis Reviewer's Report form will be issued at that time.
7. Submit an Application for Degree to 200 Fraser or 130 Coffey by the *first* working day of the intended month of graduation.
8. Submit Final Oral Defense Scheduling Form *at least* one week prior to the exam.
9. Return the signed Final Oral Examination Report form no later than one working day following completion of the Final Oral Defense.
10. Submit a copy of the dissertation abstract and a copy of the dissertation (all signed by the advisor[s]) plus the Microfilm Agreement Form and the Survey of Earned Doctorates by the last working day of the intended month of graduation.

[Electronic Dissertation Submission](#) is a new option. See the most recent requirements from the graduate school at the time of thesis writing, as this option is in a state of development.

[Formatting Guidelines for the Doctoral Dissertation](#)

Graduate School registration requirement: As a Graduate School student you are required to register ***every fall and spring term*** to maintain your active status up through and including the term in which you will officially complete your degree. Failure to maintain your active status will result in the discontinuation of your student status and require applying for readmission.

Ph.D. DEGREE PROGRAM TIMELINE FORM – for student use

Student name: _____

Advisor: _____

Starting date: _____

Advisory Committee: _____

	<u>Projected date</u>	<u>Date completed</u>
<u>ACTION BY DGS</u>		
A. Advisory Committee established ¹	_____	_____
<u>ACTION BY STUDENT AND ADVISORY COMMITTEE</u>		
B. First meeting of Advisory Committee ²	_____	_____
C. Degree Program/Trans. Forms approved & submitted ³	_____	_____
D. Thesis proposal approved ⁴	_____	_____
E. Teaching experience identified and scheduled ⁵	_____	_____
F. Annual evaluation of progress ⁶	_____	_____
G. Thesis proposal seminar presented in PBio 8900 ⁷	_____	_____
H. Research seminar ⁸	_____	_____
I. SPEAK or ESL requirements ⁹	_____	_____

ACTION BY DGS AND/OR GRADUATE SCHOOL

A. Degree Program/Trans. Forms approved & submitted ¹⁰	_____	_____
B. Preliminary Written examination ¹¹	_____	_____
C. Preliminary Oral examination ¹²	_____	_____
D. Tuition status changed		
E. Thesis title proposal filed ¹³	_____	_____
F. Thesis title page submitted ¹⁴	_____	_____
G. Final oral examination ¹⁵	_____	_____
H. Degree completed within 4 to 5 years	_____	_____

¹within first two weeks of entering program

²within first month of entering program

³by end of 3rd semester

⁴during spring semester of second year

⁵before fulfilling teaching requirement

⁶each year, middle of spring semester

⁷during fall semester of 3rd year

⁸near the end of the research

⁹Non-English language students only; as soon as possible after entering program

¹⁰by end of 3rd semester

¹¹at the end of spring semester of the students' second year

¹²by end of second summer in the program

¹³no later than 1st semester after passing preliminary oral exam

¹⁴at the end of 3rd year; after passing preliminary oral exam

¹⁵after examining committee (readers) certify thesis is ready for defense

The DGS monitors progress of each student and may place a hold on registration after the first full semester of delinquency if progress is not satisfactory.

IV. DEGREE REQUIREMENTS FOR MASTER OF SCIENCE - PLAN A, THESIS

A. GENERAL

Students pursuing a M.S. degree must identify their advisors, research project, and sources of support before entering the PBS program. Students must satisfy the general requirements stated in the current Graduate School Bulletin for the Master's Degree with Thesis (http://www.grad.umn.edu/current_students/degree_completion/masters/index.html) 20 credits of which 14 are from the major, 6 from the minor or supporting program and 10 Master's thesis credits (PBS 8777). The program should be completed in approximately 2 to 2.5 years, with a minimum GPA of 3.0. At least two-thirds of the course credits included in the degree program must be taken A-F. A final oral examination is required.

The student must file an official course program no later than the end of the second semester of residency. All requirements must be completed within 7 years, starting with the oldest work listed on the official Degree Program/Transmittal Forms (GS89a/b). Degree Program/Transmittal Forms are planned by the students in consultation with the student's Advisory Committee. The Advisory Committee must approve the course program before the student can submit an official Degree Program /Transmittal Forms (GS89a/b) to the DGS and Graduate School.

B. REQUIRED COURSES – M.S. PLAN A

4 courses from the discipline areas – suggestions of courses listed in Table 1 at the end of the handbook
6 credits in minor or supporting field

PBIO 5960 (SEC 002) Itasca PBS Graduate Student Experience (orientation) – 1 credit

All incoming students are expected to register for and attend the Itasca Orientation Workshop held each year before the beginning of fall semester. The goals of the workshop are to foster interactions among students and faculty; and to introduce the students to research design and techniques; and to provide orientation and advising for new students.

PBS 8081 – Integrative Plant Biology: Connecting Molecules to Ecosystems - 3 credits (fall only)

PBS 8900 (SEC 001) PBS Colloquium – 1 credit (register 1st semester)

Regular attendance at the Plant Biological Sciences Colloquium is expected. (Held every Tuesday from 3:30-4:30 during the academic year).

PBS 8900 (SEC 003)– Graduate Student Seminar – 1 credit (usually taken 1st semester)

The goal of this seminar/journal club is to foster interaction among the students AND to expose students to the breadth of research in plant biology. First-year students take seminar to listen to other students' research. Third-year students present their thesis proposals in this seminar.

PBS 8123 - Research Ethics in Plant and Environmental Sciences – 0.5 credit (register 2nd semester)
spring only

PBS 8777 – Master Thesis – 10 credits

Grad 8101 - Teaching in Higher Education- 3 credits (A-F grade option – take before fulfilling teaching requirement)

Optional PBS courses:

PBS 8901 Preparation of Research Proposal – 1 credit (take 3rd semester; offered in fall only). This course prepares students for writing proposals by providing instruction and feedback by peers and faculty.

PBS 8910 – Journal Club (offered at least once per academic year)

Only one 4000 level course can be applied toward the MS degree course requirements; however, exceptions may be granted with the approval of all members of a student's advisory committee and the DGS. A typical program could include: PBio 5412 Plant Physiology; PBio 5516 Plant Cell and Molecular Biology; PBio 5416 Plant Morphology, Development, and Evolution; and EEB 4014 Ecology of Vegetation. Other suitable courses or previous coursework in these areas may fulfill this requirement. One or more additional courses from the primary area of specialization are required.

Requirements for a minor: PBS graduate students should check with Director of Graduate Studies for specifics on requirements for any minor they propose. For students majoring in other fields, a minor in Plant Biological Sciences for MS students may be obtained by completing 6 credits selected from the four disciplinary areas. The DGS in Plant Biological Sciences must approve and sign the coursework section of the Degree Program /Transmittal Forms (GS89b) of students with a minor in the program.

C. THESIS PROPOSAL

A written thesis proposal is required. The student will work with the advisor and the Advisory Committee to prepare an appropriate, defensible proposal prior to starting the major portion of the research. M.S. students may register for PBS 8901; Preparation of Research Proposal, to gain experience with proposal writing.

D. TEACHING EXPERIENCE

All M.S. students are required to participate for 1 semester (at least a quarter time, approximately 10 hrs/week, assignment) in a teaching or training experience. During the teaching experience, students may be appointed to a teaching assistant position but this is not necessary and they may continue on a research assistantship or fellowship. Prior to or concurrent with the student's involvement as a teaching assistant, he/she will be required to take one teaching improvement course such as (see Grad 8101 Teaching in Higher Education; take A-F grade option). Students with an equivalent prior teaching experience may petition the DGS to waive or modify the course or teaching experience requirement upon recommendation of their Advisory Committee.

E. RESEARCH SEMINAR

A seminar dealing with the results of the thesis research is required of all candidates. If scheduling permits, the student has an option to present the research seminar as the initial part of the final oral exam. Contact the PBS coordinator to schedule a room for your seminar.

F. FINAL ORAL EXAM

The final oral exam will be held after completion of the thesis research to examine the student on the thesis research and other related areas in plant biology. The committee typically consists of the advisor and one other member from the major and a third member from the minor or related area.

A bound copy of the thesis must be submitted to the PBS program office.

MS DEGREE PROGRAM TIMELINE FORM – PLAN A – for student use

Student name: _____

Advisor: _____

Starting date: _____

Advisory Committee: _____

	<u>Projected date</u>	<u>Date completed</u>
<u>ACTION BY DGS</u>		
A. Advisory Committee established ¹	_____	_____
<u>ACTION BY STUDENT AND ADVISORY COMMITTEE</u>		
A. First meeting of Advisory Committee ²	_____	_____
B. Degree Program /Trans. Form approved & submitted ³	_____	_____
C. Thesis proposal approved ⁴	_____	_____
D. Teaching experience identified and scheduled ⁵	_____	_____
E. Annual evaluation of progress ⁶	_____	_____
F. Research seminar ⁷	_____	_____
G. SPEAK or ESL requirements ⁸	_____	_____
<u>ACTION BY DGS AND/OR GRADUATE SCHOOL</u>		
A. Degree Program /Trans. Form approved & submitted ⁹	_____	_____
B. Tuition status changed	_____	_____
C. Final oral examination ¹⁰	_____	_____
D. Degree completed within 2 to 2.5 years	_____	_____

¹within 1st two weeks of entering program

²within 1st month of entering program

³by end of 2nd semester

⁴by end of 1st year

⁵preferably before start of fall semester of 2nd year

⁶each year, middle of spring semester

⁷prior to final oral exam

⁸Non-English language students only; as soon as possible after entering program

⁹by end of 2nd semester

¹⁰after examining committee (readers) certify thesis is ready for defense

The DGS monitors the operational records for each student and may place a hold on registration after the first full semester of delinquency if progress is not satisfactory.

V. DEGREE REQUIREMENTS FOR MASTER OF SCIENCE - PLAN B, WITHOUT THESIS

A. GENERAL

Students pursuing a M.S. degree must identify their advisors, research project, and sources of support before entering the PBS program. Students must satisfy the general requirements stated in the current Graduate School Bulletin for the Master's Degree without Thesis (http://www.grad.umn.edu/current_students/degree_completion/masters/index.html)

The program should be completed in approximately 2 years, with a minimum GPA of 3.0. At least two-thirds of the course credits included in the degree program must be taken A-F. A Final Oral Examination is required.

The student must file the official Degree Program/Transmittal Forms (GS89a/b) no later than the end of the second semester of residency. All requirements must be completed within 7 years, starting with the oldest work listed on the official course program. The Degree Program /Transmittal Forms (GS89a/b) are planned by the students in consultation with the student's Advisory Committee. The Advisory Committee must approve the course program before the student can submit the official Degree Program /Transmittal Forms (GS89a/b) to the DGS and Graduate School. The course program must have at least 30 credits.

B. REQUIRED COURSES – M.S. PLAN B (must total 30 credits)

4 courses from the discipline areas – 14 credits (listed at the end of the handbook)

6 credits in minor or supporting field

PBIO 5960 (SEC 002) Itasca PBS Graduate Student Experience (orientation) – 1 credit

All incoming students are expected to register for and attend the Itasca Orientation Workshop held each year before the beginning of fall semester. The goals of the workshop are to foster interactions among students and faculty; and to introduce the students to research design and techniques; and to provide orientation and advising for new students.

PBS 8081 – Integrative Plant Biology: Connecting Molecules to Ecosystems - 3 credits (fall only)

PBS 8900 (SEC 001) PBS Colloquium – 1 credit (register 1st semester)

Regular attendance at the Plant Biological Sciences Colloquium is expected. (Held every Tuesday from 3:30-4:30 during the academic year).

PBS 8900 (SEC 003)– Graduate Student Seminar – 1 credit (usually taken 1st semester)

The goal of this seminar/journal club is to foster interaction among the students AND to expose students to the breadth of research in plant biology. First-year students take seminar to listen to other students' research.

Third-year students present their thesis proposals in this seminar. **Grad 8101** - Teaching in Higher Education- 3 credits (must take before fulfilling teaching requirement)

PBS 8123 - Research Ethics in Plant and Environmental Sciences – 0.5 credit (register 2nd semester) spring only

Grad 8101 - Teaching in Higher Education- 3 credits (A-F grade option – take before fulfilling teaching requirement)

Optional PBS courses:

PBS 8901 Preparation of Research Proposal – 1 credit (register 3rd semester; offered in fall only). This course prepares students for writing proposals by providing instruction and feedback by peers and faculty.

PBS 8910 – Journal Club (offered at least once per academic year)

If a minor is selected, 6 or more credits are required in a single field, and the course program must be approved by the DGS of the minor field.

C. PROPOSAL PAPER

While a research thesis project is not required, all Plan B candidates shall develop a research proposal paper on a topic of interest to the student. The proposal paper shall be a scholarly development of the research area and should include identification of the problem, survey of the literature, materials and methods, experimental design, and anticipated achievements and their potential significance in relation to the problem of study. If scheduling permits, the student has an option to present the research proposal as the initial part of the final oral exam.

D. TEACHING EXPERIENCE

All M.S. students are required to participate for 1 semester (at least a quarter time, approximately 10 hrs/week, assignment) in a teaching or training experience. During the teaching experience, students may be appointed to a teaching assistant position but this is not necessary and they may continue on a research assistantship or fellowship. Prior to or concurrent with the student's involvement as a teaching assistant, he/she will be required to take one teaching improvement course such as

(see Grad 8101, Teaching in Higher Education; take A-F grade option). Students with an equivalent prior teaching experience may petition the DGS to waive or modify the course or teaching experience requirement upon recommendation of the Advisory Committee.

E. FINAL ORAL EXAMINATION

The final oral exam will be held after completion of the coursework and proposal paper to examine the student on the proposal and other related areas in plant biology. The committee typically consists of the advisor and one other member from the major and a third member from the minor or related area.

Requirements for a minor: PBS graduate students should check with Director of Graduate Studies for specifics on requirements for any minor they propose. For students majoring in other

fields, a minor in Plant Biological Sciences for MS students may be obtained by completing 6 credits selected from the four disciplinary areas. The DGS in Plant Biological Sciences must approve and sign the coursework section of the Degree Program /Transmittal Forms (GS89b) of students with a minor in the program.

MS DEGREE PROGRAM TIMELINE FORM – PLAN B – student use only

Student name: _____

Advisor: _____

Starting date: _____

Advisory Committee: _____

	<u>Projected date</u>	<u>Date completed</u>
<u>ACTION BY DGS</u>		
A. Advisory Committee established ¹	_____	_____
<u>ACTION BY STUDENT AND ADVISORY COMMITTEE</u>		
A. First meeting of Advisory Committee ²	_____	_____
B. Degree Program /Trans. Form approved & submitted ³	_____	_____
C. Research proposal paper approved ⁴	_____	_____
D. Teaching experience identified and scheduled ⁵	_____	_____
E. Annual evaluation of progress ⁶	_____	_____
F. Research seminar ⁷	_____	_____
G. SPEAK or ESL requirements ⁸	_____	_____
<u>ACTION BY DGS AND/OR GRADUATE SCHOOL</u>		
A. Degree Program /Trans. Form approved & submitted ⁹	_____	_____
B. Tuition status changed	_____	_____
C. Final oral examination ¹⁰	_____	_____
D. Degree completed within 2 to 2.5 years	_____	_____

¹within 1st two weeks of entering program

²within 1st month of entering program

³by end of 2nd semester

⁴by end of 1st year

⁵preferably before start of fall semester of 2nd year

⁶each year, middle of spring semester

⁷prior to final oral exam

⁸Non-English language students only; as soon as possible after entering program

⁹by end of 2nd semester

¹⁰after examining committee (readers) certify final paper is ready for defense

The DGS monitors the operational records for each student and may place a hold on registration after the first full semester of delinquency if progress is not satisfactory.

Master's Degree Requirements for Graduation

Graduate School requirements for graduation are listed below. Unless stated otherwise, you should submit all forms to 316 Johnston Hall. Note: all students must submit an Application for Degree to 200 Fraser Hall or 130 Coffey Hall on or before the first working day of the intended month of graduation.

Masters Plan A

- Degree Program submission is based on PBS Graduate Program requirements, but must be filed with the Graduate School ***no later than one term*** prior to graduation.
- Once the Degree Program has been approved by The Graduate School and the thesis is ready to go to the reviewers, request a [graduation packet](#) online, or by visiting 316 Johnston Hall. The Thesis Reviewers Report form will be issued at that time. Remember to allow your committee *at least 2 weeks* to read the thesis.
- Submit the Application for Degree to 200 Fraser or 130 Coffey by the ***first*** working day of the intended month of graduation.
- Submit the signed Thesis Reviewer's Report form to 316 Johnston Hall. The Final Examination Report Form will be issued at that time. You must have the Final Exam Form before you report for the exam.
- Return the Final Examination Report form by the last working day of the intended month of graduation.
- Submit two *unbound* copies of your thesis, both signed by your adviser(s), by the last working day of the intended month of graduation. Be sure to check [Formatting Guidelines for the Master's Thesis/Project](#)

Masters Plan B/Coursework Only

- Degree Program submission is based on PBS Graduate Program requirements, but must be filed with The Graduate School ***no later than one term*** prior to graduation.
- Once the Degree Program has been approved by The Graduate School, pick up the Final Examination Report form and the [graduation packet](#) prior to the final oral examination. You must have the Final Exam Form before you report for the exam.
- Submit an Application for Degree to 200 Fraser or 130 Coffey by the ***first*** working day of the intended month of graduation.
- Return the Final Examination Report form by the last working day of the intended month of graduation.

Graduate School registration requirement: As a Graduate School student you are required to register ***every fall and spring term*** to maintain active status up through and including the term in which you will officially complete your degree. Failure to maintain your active status will result in the discontinuation

of your student status and require applying for readmission.

VII. PROCEDURES TO MONITOR STUDENT DEGREE PROGRESS

A. FORMAL ANNUAL EVALUATION

Graduate students will be provided with (at minimum) an annual written evaluation of his or her academic progress, as measured against the published performance expectations of the graduate degree program and the Graduate School. The annual review should be occur during Spring semester and should be conducted during a meeting with the advisor(s) and the student's Advisory Committee. The evaluation should include a review of academic performance, timeliness in meeting Program and Graduate School guidelines for submitting course programs, thesis proposals, etc., satisfactory progress on thesis research, professional development, and adequate performance of assistantship activities (Plant Biological Sciences Graduate Student Annual Evaluation Form). Students are responsible for scheduling the review meeting. Students will receive notice in the first week of February to arrange an annual review with their advisor(s) and advisory committee. Plant Biological Sciences faculty members will be notified at the same time of the pending annual review process so they can anticipate and deal appropriately with scheduling and review issues. Students will need to have the Plant Biological Sciences Annual Graduate Student Evaluation Form completed, signed and submitted to the Program Coordinator by the first Thursday in April (April 1, 2010) in order to be reappointed to their Assistantship or Fellowship. Failure to be annually reviewed may result in a termination of employment at the end of Spring semester (in May 2010).

Graduate students that are not making adequate progress will be notified in writing of their deficiencies and the specific actions and/or performance objectives for completion by the student within a specified time period. Responsibilities of both the student and the advisor(s) to meet the expectations of the Plant Biological Sciences Graduate Program will be contained in the deficiency letter. Failure to correct these deficiencies may result in the revocation of the student's Research Assistantship/Fellowship. Graduate students that will not be reappointed the following academic year will be notified at least one month prior to termination of appointment.

B. ADVISORY COMMITTEE MEETING FOR STUDENTS NEARING DEGREE COMPLETION

A goal of the PBS program is that Ph.D. students complete the degree within five years. The program has the responsibility to ensure that students meet regularly with their advisory committee to facilitate timely completion of research and thesis writing. During the first four years, students are required to meet with the committee at least once each year for annual evaluation. After completing four years in the Ph.D. program, students are required to meet with the advisory committee at least once each semester. To prepare for these meetings, the student should provide the committee with a brief (~2 page) written report summarizing research/writing progress and outlining objectives yet to be completed. At the committee meeting, faculty should review progress and give advice with the aim of helping the student to reach timely completion of the degree. In a letter to the student, committee, and DGS, the committee chair should summarize the results of the meeting. Failure to arrange these committee meetings each semester may result in the DGS placing a hold on student registration.

LEAVE OF ABSENCE

Contact the Director of Graduate Studies for a leave of absence request. These are considered on a case-by-case basis and must be justified by exceptional circumstances.

Director of Graduate Studies Signature: _____

C. REGISTRATION – Maintaining Active Status (from the graduate school web site)

All Graduate School students will be required to register in the Graduate School every fall and spring term in order to maintain active status.

Maintaining active status is critical and is required in order to participate in the University community as a Graduate School student. Participating in the University community includes registering for coursework, taking examinations, submitting milestone forms, or filing for graduation. Students not registered every fall and spring term are considered to have withdrawn; their Graduate School records are deactivated. Those who wish to resume graduate work must request readmission to the Graduate School (and if readmitted, must register) to reactivate their status.

Grad 999 - a zero-credit, zero-fee, non-graded registration option - will be an option for those Graduate School students who must register solely to meet the Graduate School's registration requirement. Students should check with their department office for eligibility.

If your last Graduate School registration was prior to Spring 2005, you will be required to seek readmission. Change of Status/Readmission forms are available in the Graduate School office (309 Johnston; 612-625-8060); graduate program offices; and online. If your request for readmission is approved you will be required to register the term for which you are readmitted and every subsequent fall and spring term until you complete all degree requirements and graduate.

Confer with your adviser and/or DGS to determine what you should register for each term. You should consider the following in addition to any criteria outlined by your adviser and/or DGS:

- * Do you have course credits or thesis credits that must be taken to complete graduate program and/or Graduate School degree requirements?
- * Do you have to be registered part-time or full-time to meet any internal/external registration requirements in addition to the Graduate School's fall/spring registration requirement (for example, obtaining financial aid; holding an assistantship; maintaining legal visa status; deferring loans)? What number of credits (and what type of credits) will meet the requirements of those internal/external departments or agencies?
- * If you have completed all coursework and (if applicable) thesis credit requirements, and you do not have to be registered to meet any requirement other than the Graduate School's fall/spring registration requirement to maintain active status, you may wish to confer with your adviser/DGS about Grad 999 (see next page).

For questions about the readmission process, please contact Graduate School Admissions in 309 Johnston or by phone at 612-625-8060.

For questions about how the registration requirement will impact you, please contact the Graduate Student Services and Progress Office in 316 Johnston. Master's students may call 612-625-4019 or email gsmast@umn.edu ; doctoral students may call 612-625-0168 or email gsdoc@umn.edu .

Restrictions to Grad 999 registration: The Graduate School does not restrict the number of terms for which students register for Grad 999 nor does it impose any eligibility requirements other than those described above. However, individual graduate programs may establish their own criteria and are strongly encouraged to monitor their students' use of Grad 999.

The PBS program only allows students to register for two semesters of Grad 999. Prior to any additional 999 registrations, the student needs to meet with his/her Advisory Committee and get signed approval from their committee and the DGS.

Monitoring Grad 999 registrations: The Graduate School will send a Grad 999 registration report every fall and spring to DGS. Students' names, and the number of times they registered for Grad 999, will appear on the Grad 999 report. If a student exceeds his/her graduate program's limits for Grad 999 registrations, the DGS can make a written request to have the Graduate School place a hold on the student's record.

Graduate students can register for Grad 999 online. If you need clearance for GRAD 999 during the second week of the semester, please call 612-625-2306. All registration deadlines and late fees will apply.

How Grad 999 will appear on the transcript: Grad 999 will appear on the Graduate School student's record as "Grad 999 Graduate School Active Status". There are no credits or grades for Grad 999.

Grad 999 and the Student Services Fee: Students who register for Grad 999 are not required to pay the Student Services fee; however, they may do so if they so choose. (Please be advised that those who pay the Student Services Fee must have their own health insurance to be covered when they use Boynton Health Service. Also, paying the Student Services Fee does *not* render students eligible to buy University-sponsored hospitalization insurance.)

Termination of Graduate Status

Graduation or withdrawal from the program Upon graduation, students should notify the program office and the Director of Graduate Studies of the effective date of termination of student status.

Students who decide to withdraw from the program should give written notice to the Director of Graduate Studies as soon as the decision has been reached. The notice should indicate the effective date of termination. A student may be liable for substantial tuition and other fees in the case of a mid-semester termination.

REQUIREMENTS FOR A MINOR IN PLANT BIOLOGICAL SCIENCES

A minor in Plant Biological Sciences may be obtained by completing 6 credits (for MS students) or 12 credits (for Ph.D. students) selected from the four disciplinary areas. The DGS in Plant Biological Sciences must approve and sign the coursework section of the Degree Program /Transmittal Forms (GS89b) of students with a minor in the program.

PART TWO: PROGRAM STRUCTURE AND ADMINISTRATION

I. GOALS

The goals of the graduate program in Plant Biological Sciences are to provide graduate students:

- an integrated framework and cognitive structure for understanding plant biology;
- skills for the synthesis of information and the recognition of researchable problems of significance;
- the capabilities for independent scholarship and attributes necessary for professional development.

The program intends to maintain high standards for admitted students through a rigorous, fair selection process and to provide them the programmatic foundation for forming individualized career paths. The program currently emphasizes preparation for academic and research careers. It is expected that there will be increased interest on the part of students as well as increased career opportunities in other segments of society for graduates who have broad training in plant biology coupled with expertise in more focused scientific inquiry. The program will monitor the types of employment our graduates are receiving and, if necessary, modify the educational experience the program provides. The origins and backgrounds of students entering the program will need similar evaluation.

II. ANNUAL RETREAT

The PBS program holds an annual retreat (usually during May); all PBS students and faculty are strongly urged to attend. The retreat provides opportunities for interactions among students and faculty, for discussion of program issues, and for highlighting student research.

III. CHANGES IN PROCEDURES AND POLICIES

All procedures, policies, and elections described in the Plant Biological Sciences Graduate Program Handbook shall be subject to approval by a majority of the current program graduate faculty. This majority is defined as a simple majority of those voting on a given issue. Voting may take place during a duly called meeting of the graduate faculty or by paper ballot or Email.

IV. ADMINISTRATIVE STRUCTURE

A. DEPARTMENT OF PLANT BIOLOGY

The Department of Plant Biology has administrative responsibility for the Plant Biological Sciences Graduate Program. The Department provides a Program Coordinator to assist with handling applications, communicating with current students and faculty, and administering budgets from internal departmental or collegiate funds, Graduate School block grants, or from external grants or gifts. Candidates for Associate DGS are identified by the Head of the Department of Plant Biology in consultation with Heads of other affiliated departments or, at the Head's designation, by an *ad hoc* nomination committee.

B. ELECTED POSITIONS

Director of Graduate Studies

The Director of Graduate Studies (DGS) is a member of the Plant Biological Sciences graduate faculty and is elected by a majority of the graduate faculty who vote. Typically the DGS will have been elected to and have served two years as the Associate DGS before serving two years as DGS. The primary administrative responsibility for the conduct of program affairs is vested in the DGS. The DGS consults with the Associate DGS and the Steering Committee on matters that require a broad base of input from the various areas of specialization within the program.

Associate Director of Graduate Studies

The Associate DGS is a member of the Plant Biological Sciences graduate faculty and is elected to an overall four-year term; a two-year term as Associate DGS and then rotating into a two-year term as DGS. The primary responsibility of the Associate DGS is to work with the Admissions committee to: recruit high caliber students, make admissions decisions, and nominate students for Graduate School fellowships. The Associate DGS will also work with the recruitment committee. At their discretion, the DGS and Associate DGS may divide other responsibilities of the program.

A faculty member may not serve two consecutive four-year terms as Associate DGS and DGS.

Steering Committee

The Steering Committee consists of the DGS, the Associate DGS, a graduate student member elected by the graduate students in the program and four graduate faculty members elected to represent each of the disciplinary areas. The Program Coordinator serves as an *ex officio* member of the committee but does not vote.

The disciplinary areas are:

- Cell and Molecular Biology
- Plant Physiology
- Plant Structure, Diversity and Development
- Ecology, Systematics and Evolution

Prior to an election of faculty members of the committee, nominations are solicited from the entire graduate program faculty for each of the four areas. The two faculty members receiving the most nominations in each area are asked to stand for election; the person with the most votes then is elected to a two-year term. Typically two new Steering Committee members are elected each year so that only half the committee is new each year. The Steering Committee consults with and advises the DGS and Associate DGS on graduate program procedures and policies, votes on nominations to the Plant Biological Sciences program graduate faculty, periodically reviews faculty participation in the program, and assists in various aspects of the program as requested.

C. APPOINTED PROGRAM GOVERNANCE COMMITTEES

The following standing program committees are appointed by the DGS or Associate DGS with the consent of the appointee. In general, each committee has faculty representation from different areas and committee members serve staggered two-year terms so that a level of experience is maintained within each committee.

Admissions Committee

The Admissions Committee consists of four faculty members appointed by the DGS to represent the broad spectrum of the graduate program. The Associate DGS serves as an ex officio member. The Admissions Committee works closely with the Program Coordinator in maintaining new and current application files and is responsible for their prompt initial review when complete (application for admission to the Graduate School and/or application for financial assistance, 3 letters of recommendation, transcripts, GRE score, TOEFL score [if required], statement of goals and experience). The applications are evaluated according to criteria established by the Plant Biological Sciences Graduate Program.

The Associate Director of Graduate Studies works closely with this committee to identify high quality applications for further consideration by the graduate faculty. The Committee prepares a brief summary of each qualified applicant's record and interests, which is then distributed by e-mail to all program faculty members to determine potential advisors and/or RA support.

Applicants, for whom a potential advisor is identified, based on a match of applicant's and faculty member's research interests, will be offered Teaching Assistantships, Research Assistantships or possibly Fellowships from external sources as available. Only these applicants are formally recommended for admission into the graduate program. The Graduate School issues an official letter of acceptance. Admitted students are sent a letter from the DGS and appropriate department with the details of their financial offer. Except for unusual circumstances, all admitted PhD. students receive a half-time RA or an equivalent fellowship during their first academic year.

Curriculum Committee

The Curriculum Committee consists of four faculty members appointed by the DGS to represent the broad spectrum of the curriculum within the graduate program. One or more graduate students participating on this committee may be elected by members of the Phytograd Club. The Curriculum Committee has responsibility for any necessary review of program courses as well as the overall curriculum. The committee periodically evaluates whether the courses offered effectively facilitate the passing of the preliminary written and oral exams and preparing students for a career in plant biology.

Financial Aid Committee

The Financial Aid Committee is responsible for distribution of program funds for student travel and for summer stipends. The DGS may ask the committee to select nominees for Doctoral Dissertation Fellowships and other awards. The committee may be asked to help identify external funding possibilities such as training grants and to help prepare applications for these funds.

Colloquium Committee

The Colloquium Committee consists of three to four faculty members appointed by the DGS and one to two graduate students elected by the Phytograd Club. The committee is responsible for organizing a weekly seminar series. The series provides for invited presentations by outside speakers, program graduate faculty, and graduate students.

Recruitment Committee

The Recruitment Committee is chaired by the Associate DGS and consists of three faculty members appointed by the DGS and one or more graduate students. Graduate students serving on this committee may be elected or appointed by members of the Phytograd Club. The committee is responsible for maintenance and updating of all recruitment materials and information, including the PBS website, recruitment posters, postcards and other materials. The committee will advise the DGS and PBS faculty of recommendations and initiatives that will streamline recruitment of prospective graduate students.

Other ad hoc Committees

Other committees may be appointed for a limited period. Any additions to the standing committees shall first be approved by vote of the program faculty.

STUDENT PARTICIPATION IN PROGRAM GOVERNANCE COMMITTEES

Graduate students are members of the following standing committees of the program: Steering (1-2 reps); Curriculum (1 rep); Colloquium (1-2 reps); Recruitment (1-2 reps). These individuals are selected by the Phytograd Club, which is lead and organized by the graduate students. The Phytograd Club is open to all students currently active in the Program. Students also are automatically notified of graduate program meetings and encouraged and expected to attend and make their views known on various program issues.

V. GRADUATE FACULTY

A. MEMBERSHIP

Members of the graduate faculty for Plant Biological Sciences Graduate Program are from a broad array of administrative units within the University of Minnesota. The graduate faculty subscribes to the goals of the graduate program and new members are chosen to maintain program excellence and focus in the basic plant sciences.

1. Application Procedure for New Members

A prospective faculty member should send a letter to the current DGS indicating the rationale for interest in the program, as well as a willingness to participate in the program and to fulfill the responsibilities of a graduate faculty member. The DGS forwards the nomination materials and a ballot to the Steering Committee who is authorized to make a decision on behalf of the program faculty. At least three of the four Steering Committee members must favor the nomination.

Information to support the nomination must include:

- a completed, "Notification of Appointment to the Graduate Faculty/Limited Teaching Status"
- a current curriculum vitae

Depending on the level of appointment sought, it may also be advisable for the applicant to present a seminar in the Colloquium Series and/or to supply reprints of recent papers or reprints of manuscripts accepted for publication.

The levels of appointment (Senior member, Member, and Affiliate Member) are consistent with the guidelines established by the Biological Sciences Policy and Review Council (2/03). New appointments as Senior members of the graduate program faculty are based on evidence of independent research with 4 or more peer-reviewed publications in journals or books. Normally,

newly hired faculty members in a tenure-track position would qualify for Senior membership. For Affiliate membership, a record of scholarly research and publication is required, and advising is limited to MS students.

2. Criteria for Continued Membership

The Steering Committee reviews each program faculty member's activities every 5 years from the time of initial appointment. To maintain program faculty status at the different membership categories, individuals must be active in one or more of the following responsibilities specific to that membership category as outlined in the following table.

Responsibility	Membership Category			
	Senior Member (SM)	Affiliate Senior Member (ASM)	Member (M)	Affiliate Member (AM)
Teach courses for graduate credit within the graduate program	A ¹	A	A	A
Serve on student examination committees for Minor Only and Post-Baccalaureate Certificate programs	A	A	A	A
Serve on student examination committees for Master level degrees and as a thesis reviewer	A	A	A	A
Serve as an advisor for students pursuing Master's-level degrees	A	A	O ²	O
Serve as a co-advisor for Doctoral degrees in the graduate program	A	A	O	O
Serve on student examination committees for Doctoral Degrees and as a thesis reviewer	A	A	O	O
Chair student examination committees for Doctoral degrees	A	A		
Serve as an advisor for students pursuing Doctoral degrees in the graduate program	A	A		
Participate in the governance of the graduate program and in the governance of the Graduate School	A		A	

¹Automatic. ²Optional; when granted appointments become Member/Advising (M2) and Affiliate Member/Advising (AM2).

The Steering Committee tracks and may request documentation of these activities in the program. If a faculty fails to participate and contribute to the program for a period of five years, a recommendation shall be made to the Dean that the faculty member's Graduate School appointment be terminated or

their membership status modified.

3. Identification of Faculty Specialization Areas

Upon appointment to the graduate faculty each member will identify their area(s) of specialization from the following:

- Cell and Molecular Biology;
- Plant Physiology;
- Plant Structure, Diversity and Development; and
- Ecology, Systematics and Evolution.

No more than two areas may be selected. Identification with a specific interest area makes one eligible for serving as a committee representative for that area.

B. PROGRAM FACULTY MEETINGS

The program faculty meet two times each academic year; once in September and once during spring semester. Additional meetings can be called at any time as needed.

PART THREE: GENERAL INFORMATION

VI. INTRODUCTION

This section of the Plant Biological Sciences Graduate Program handbook contains a partial listing of other policies, contacts and sources on information and services. Much of this information could change without involvement of the Plant Biological Sciences Graduate Program, so the most current information should be sought directly from the source.

A. EMPLOYMENT AND APPOINTMENT TYPES

Graduate students may hold appointments as a Teaching Assistant or Research Assistant. The duration, duties and other details of the appointment should be included and described in the initial letter of appointment provided by the appointing Department. In either case, students are generally appointed to a 50% Teaching Assistantship or a 50% Research Assistantship appointment and are expected to spend at least 20 hours per week engaged in their teaching assignment or research study. Research Assistants can be funded in a number of ways: They may be paid from grant funds in their mentor's laboratory or they may be funded by other Fellowships or Scholarships. Some fellowships are funded from external sources (e.g., Howard Hughes or NSF pre-doctoral fellowships) and students apply individually for the funding, usually during their first year in the graduate program, by writing a proposal. Other Fellowships (e.g., USDA National Needs Fellowships) are awarded to the program and the program then awards them to students who are eligible for them. In addition, there are the 1-year grants from the

Graduate School: fellowships for first-year students and Ph.D. Dissertation Fellowships. There are a few special 1-year fellowships for underrepresented minority students, also, and the list of special fellowships (Brand, etc.) that are listed in the Graduate School Bulletin.

Graduate Assistant Employment's web site

http://policy.umn.edu/categories/hr/policy/GradStudentEmployment_pol.cfm

B. LENTH OF STAY IN THE PROGRAM AND FUNDING PRIORITIES

Previously, the PBS program has been able to provide TA support for all students who request it. While program staff will continue to strive to place all students in suitable appointments, it may not always be possible to support all students requesting TA appointments. In this case, student requests will be prioritized. Students who are making good progress toward degrees and have been in the program for five or fewer years will take higher priority than students in the sixth year and beyond. Also, students who have received relatively little TA support in the past will be prioritized over students who have received more support.

C. GRIEVANCE POLICY AND PROCEDURES

In all cases, grievances and unsettled issues should be resolved as quickly as possible and at the lowest possible level between the affected parties. The DGS and/or appropriate Department Head may play a role in initiating such resolution. The Graduate Student Affairs Committee also may provide assistance. The Student Dispute Resolution Center, 321 Coffman Union, 612-625-5900 is also another resource. The staff at SDRC provides a full range of services to students with campus-based complaints or concerns. Their website address is:

<http://www.tc.umn.edu/nlhome/g051/sos>

D. ACADEMIC AND EMPLOYMENT ISSUES

Graduate assistants have the right to fundamental fairness regarding complaints arising from their appointments, without prejudice to other rights and/or privileges. If you have a complaint, you should first seek informal resolution through your Director of Graduate Studies, faculty advisor, or department/unit head. If your employment problem is still unresolved, contact Graduate Assistant Employment, 170 Donhowe Bldg; 612-624-7070; email: gaoinfo@tc.umn.edu; website: <http://www.umn.edu/ohr/gao>.

Graduate assistants with employment grievances are also covered by the University Grievance Policy, which is a free-standing and separate process to which graduate assistants can turn. The policy and form for filing a complaint may be obtained from the University Grievance Office, 658 Mgmt/Econ, West Bank, 612-624-1030; website: <http://www.umn.edu/ugo>.

There is also an academic grievance policy, for complaints brought by students regarding the University's provision of education and academic services affecting their role as students. It is the goal of this policy to provide a simple and expeditious process, allowing for both informal and formal resolutions of conflicts. The academic grievance procedure is described on the

Senate website: <http://www1.umn.edu/usenate/policies/stugrive.html>.

Strict confidentiality is maintained in both employment and academic grievances.

E. GRADUATE ASSISTANT PERFORMANCE ISSUES

The Office of Human Resources, Graduate Assistant Employment and Services, with the assistance of the Office of the General Counsel has prepared guidelines for notifying graduate assistants of substandard performance which may lead to termination of an appointment. Please notify the PBS program office immediately when a circumstance of this nature arises and also go to the link below for guidance on proper procedures:

http://policy.umn.edu/groups/hr/documents/procedure/gradstudentemployment_proc2.cfm

F. STUDENT CONDUCT CODE

It is the policy of the University of Minnesota that certain minimum standards of conduct are necessary to safeguard the rights, opportunities, and welfare of students, faculty, staff, and guests of the University of Minnesota community and to assure protection of the interests of the University as it seeks to carry out its mission. Please visit the following web site for the complete University of Minnesota Student Code of Conduct. http://www.grad.umn.edu/faculty-staff/governance/Policies/mutual_responsibilities.html

G. STATEMENT ON SEXUAL HARASSMENT

Sexual harassment is against the law. It is prohibited by Title VII of the 1964 Civil Rights Act and by the Minnesota Human Rights Act. Sexual harassment is broadly defined to include behavior that is not considered overtly sexual. Although not specifically prohibited, consenting sexual relationships between faculty and student, or supervisor and employee, are actively discouraged. The University of Minnesota has had a strongly enforced policy on sexual harassment since 1981, and encourages the reporting of violations. Call 624-9547 for additional information.

Instances or situations of alleged sexual harassment are handled only by the Office of Equal Opportunity and Affirmative Action (624-9547). Occurrences of sexual violence or threats should be reported immediately by calling 911 or University Police (624-3550). A 24-hour crisis line is available also (626-1300).

H. STATEMENT ON EQUAL OPPORTUNITY

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

I. DISCRIMINATION

Other than sexual harassment, complaints alleging discrimination in the University/student relationship may be handled either by the Student Academic Grievance Policy (see above) or by the Office of Equal Opportunity and Affirmative Action (624-9547) but not both.

J. Graduate Student Unpaid and Paid Leaves (from the Grad Asst Web site)

Graduate assistants are eligible for unpaid and paid leaves of absence to include the following:

Sick Leave: Graduate assistants are entitled to paid sick leave, not to exceed two weeks (10 days) consecutive pay for absences caused by occasional or serious illness or injury to themselves, their dependent child, or the dependent child of a registered same sex domestic partner. In the case of repeated absences due to illness, the responsible administrator/supervisor may request a healthcare provider's certification verifying the inability to work. For GAs on an hourly pay appointment, sick leave shall be unpaid except in the following circumstances: (1) work hours are fixed on a weekly basis, and the sick day falls on the day of the week normally scheduled for work; **OR** (2) the work schedule is variable with sick pay prorated for the work week.

Parental Leave: Graduate assistants may be eligible for parental leave, paid or unpaid. Refer to the Administrative Policies: *Parental Leaves for Academic Employees* and *Family & Medical - FMLA Leave*. http://policy.umn.edu/groups/hr/documents/policy/parental_pol.cfm

FMLA: Graduate assistants generally do not meet the minimum eligibility requirements (average 60 percent appointment) for FMLA. If a graduate assistant meets the FMLA requirements, they may be eligible for up to twelve weeks' absence during a fiscal year for reasons of:

1. the employee's own serious health condition;
2. the serious health condition of an employee's immediate family member; or
3. caring for a newborn or newly-placed adopted child or foster child.

Refer to the Administrative Policy: Family & Medical – FMLA Leave.

http://policy.umn.edu/groups/hr/documents/policy/fmla_pol.cfm

Bereavement Leave: Graduate assistants are provided, at the discretion of the department, up to three workdays paid bereavement leave upon death of an immediate family member. This leave is granted for purposes of (1) attending the funeral services, ceremonies, and/or interment; (2) making necessary arrangement; (3) travel related to the death; and (4) bereavement time. Responsible administrators/supervisors are encouraged to make special arrangement to accommodate granting of leave.

Vacation Leave: Graduate assistants do not receive paid vacation leave.

For the following leaves, please refer to the Administrative Policy: *Military, Court and Civic Duty Leaves*.

http://www.policy.umn.edu/groups/hr/documents/Policy/MilCourtCivicLeave_pol.cfm

Military Leave: Graduate assistants are entitled to fifteen days leave in a calendar year for active military duty; such leave falling within a paid appointment period shall be with pay. Verification of notice to report for duty (including dates of leave) shall be provided to the responsible administrator/supervisor. Refer to the Administrative Policy: Military, Court, and Civic Duty Leaves.

Jury Duty: Graduate assistants are entitled to paid leave for jury duty. A copy of the court notice shall be provided to the responsible administrator/supervisor. If released early from jury duty by the court administrator, the GA shall return to work.

Voting Leave: Graduate assistants are eligible for a paid leave of absence to vote in any state-wide general election or state-wide primary election, or in any election to fill a vacancy in the office of a United States senator or representative during the morning of the election day. Paid leaves to vote shall cover only those hours the employee is regularly scheduled to work and shall be reasonable in relation to voting site location and distance. As federal and state Work-Study regulations do not permit payment for hours not actually worked, work-study students must be granted upon request an unpaid leave of absence to vote in elections as described here.

H. Accident Reporting

Either the State of Minnesota Workers' Compensation Plan or liability insurance covers work-related accidents or injuries. All injuries (examples include chemical burns, open wounds and eye injuries) should be treated without delay (see guidelines below) and must be reported to the department and the victim's immediate supervisor as soon as possible (within 24 hours).

For a serious injury, call the emergency number 911. For a victim requiring critical care: render first aid and seek medical care at Boynton Health Service. For injuries occurring when Boynton Health Service is closed, use Fairview-University Medical Center Emergency Room, 420 Delaware Street SE (612-273-2700). For non-emergency medical attention you may use your own clinic or one of the University's approved clinics posted by all lab telephones.

All work-related accidents must be reported to the departmental safety administrative officer, Bill Gray, as soon as possible (within 24 hours), so that the appropriate forms can be completed and submitted.

I. Safety Training

Occupational Safety and Health Administration (OSHA) and Minnesota Pollution Control Agency (MnPCA) regulations require that all employees who work with hazardous materials and/or generate hazardous waste have training in Safety and Hazardous Waste Management. In CBS, this typically includes all employees who work in laboratories. This training must be renewed annually and must be documented in your department office. Failure to have this documented training may result in an OSHA and/or MnPCA citation to your employing department and a fine to the department.

A schedule of training sessions will be given to all graduate students before fall semester starts.

V. COUNSELING, MEDIATION AND OTHER SERVICES

- A. University Counseling and Consulting Services
109 Eddy Hall, Mpls Campus 612-624-3323
30 Coffey Hall,* St Paul Campus
*Must schedule through Eddy Hall.
<http://www.uccs.umn.edu/>
- B. Student Conflict Resolution Center
107 Eddy Hall, U of M East Bank 612-624-7272
<http://www.tc.umn.edu/sos/> fax: 612-626-0691
Email: sos@tc.umn.edu
- C. Office for Student conduct & Academic Integrity (OSCAI)
211 Appleby Hall, U of M East Bank 612-624-6073
- D. University Employee Assistance Program
319 15th Ave SE, B20 Donhowe, Mpls Campus 612-625-2820
fax: 626-0243
- E. Office of Human Resources
319 15th Ave SE, 200 Donhowe Mpls Campus 612-625-2000
www1.umn.edu/ohr/ fax: 624-6037
- F. Boynton Health Service
410 Church Street SE, Mpls Campus 612-625-8400
109 Coffey Hall, St. Paul Campus 612-624-7700
Crisis Connection 612-379-6363
Emergency Care
Fairview-University Medical Center 612-672-6402
<http://www.bhs.umn.edu>
- G. Office for University Women
185 Klaeber Ct, 320 16th Ave., SE 612-625-9837
www1.umn.edu/women/ fax: 624-9028
- H. University Student Legal Service (USLS)

160 West Bank Skyway, 219 19th Ave., S.
<http://www.umn.edu/usls>

612-624-1001
fax: 624-7351

VI. SOURCES OF OTHER INFORMATION AND PROGRAMS

- A. Office of the Registrar
One-Stop Student Services
<http://www.onestop.umn.edu/>
- B. Graduate Student Orientation Program
New Student Programs Office
www.ofyp.umn.edu/gradstudents
Email: gsorient@umn.edu
800-234-1979
612-624-1979
- C. Center for Teaching and Learning Services
Office of Human Resources
120 Fraser Hall, Mpls Campus
<http://www1.umn.edu/ohr/teachlearn/>
612-625-3041
- D. Council of Graduate Students (COGS)
405 Johnston Hall, Mpls Campus
<http://www.cogs.umn.edu/>
Email: cogs@tc.umn.edu
612-626-1612
- E. Graduate Assistant Office (GAO)
200 Donhowe Bldg., Mpls Campus
612-624-7070
fax: 625-9801
- F. International Student and Scholar Services
HHH Center, Mpls Campus
<http://www.iss.umn.edu>
612-626-7100
fax: 736-1190
- G. Institute of Linguistics and ESL
214 Nolte Center, 315 Pillsbury Dr. SE
<http://www.ilec.umn.edu>
iles@umn.edu
612-624-3331
fax: 625-2312
- H. Graduate Assistant Insurance Plan
N-323 Boynton Health Service, Mpls Campus
612-625-6936

- <http://www.bhs.umn.edu/insurance/graduate> fax: 626-5183
- I. Disability Services
 McNamara Alumni Cntr, Suite 180
www.ds.umn.edu
 612-626-1333
 fax: 626-9654
- J. Housing and Residential Life
 Comstock Hall - East
 210 Delaware St. S.E., Mpls Campus
<http://housing.umn.edu>
 Email: housing@umn.edu
 612-624-2994
 fax: 624-6987
- K. Employee Resource Guide (booklet available)
 Office of Human Resources
 200 Donhowe Bldg. 319 15th Ave SE
 612-625-2000
 fax: 624-6037
- L. Onestop Financial Aid
<http://www.onestop.umn.edu/onestop/financialaid.html>
 210 Fraser Hall, Mpls Campus
 612-624-1111
 1-800-400-8636
 fax: 624-9584
- M. Office of the Bursar
 145 Williamson Hall, Mpls Campus, East Bank
 612-625-7535
 fax: 624-0830
 101A Anderson Hall, Mpls Campus- West Bank
 612-625-1383
 fax: 626-4470
 107 Coffey Hall, St. Paul Campus
 612-625-8108
 fax: 625-7214
<http://www.oam.software.umn.edu/bursar>
- N. Recreational Sports
 108 Cooke Hall, Mpls Campus
 612-625-6800
 fax: 626-7708
 104 St. Paul Gym, St. Paul Campus
 612-625-8283
 fax: 624-3040
<http://www.recsports.umn.edu/>
 Email: recsport@umn.edu
- O. U-Card Office

U-Card Main Office 612-626-9900
Coffman Memorial Union, Rm G22 fax: 626-9911
300 Washington Ave SE

U-Card Office 612-625-6800
University Recreational Center
1906 University Ave SE

U-Card Office, St. Paul 612-625-8283
St. Paul Gym
1536 N. Cleveland Ave

<http://www.umn.edu/ucard>
Email: ucard@tc.umn.edu

Appendix A

1. Payroll

University employees (including graduate student employees) are paid on a delayed biweekly payroll system. Pay periods are 2-weeks long, beginning on a Monday and ending on Sunday, 14 days later. If you do not have direct deposit, and your faculty advisor is part of the Plant Biology Department, your paycheck will be put in your mailbox in the Plant Biology office every other Wednesday. To authorize automatic deposit go to <http://www.onestop.umn.edu> and choose the “Direct Deposit” link. Pay statements are available online at “My One Stop and the HRSS website (<http://hrss.umn.edu>) two days before payday.

2. Ordering Keys/Office

Students on rotation will be given a temporary office in the Biosci building until a faculty advisor is identified. Your advisor should then be furnishing you with an office, at which time you will give up your temporary office.

There is a \$5 charge (refundable) for office/lab and/or building keys. Please complete the key authorization slip, have your advisor sign it, and go to Room 262 Biosci to get your keys.

3. Photocopying

The Plant Biology Department does not allow staff to make personal copies. Copy machines and services are available in all major libraries, smaller ones, and many other locations on campus. For information on discount cards for campus library copiers, call 612-624-4043. Copies on Campus centers throughout campus offer low-cost, full-service and self-service copying.

4. Mail

All graduate students are assigned a mailbox in the Plant Biology Department’s main office, which is located in room 250 Biosciences Center. It is important that boxes are checked at least once daily. All PBS graduate program mail/correspondence will be put in this mailbox.

NOTE: Should your advisor be in another department other than Plant Biology, the information in Appendix A may not apply. Contact the department secretary in which your faculty is housed for their department rules.

Updated 7/2009

**Course Designator/
Number/Title**

Grad Required Courses

PBS 8081	Integrative Plant Biology – Connecting Molecules to Ecosystems
PBS 8123	Research Ethics in the Plant & Environmental Sciences
PBS 8910	Journal Club
PBS 8900	SEC 001 - PBS Colloquium
PBS 8900	SEC 003- Graduate Student Seminar
PBS 8901	Preparation of Research Proposals
PBS 8994	Directed Research

Graduate School

Grad 8101	Teaching in Higher Education
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PBIO

PBIO 4321	Minnesota Flora
PBIO 4511	Flower Plant Diversity
PBIO 5960 SEC 001	Itasca PBS Grad Stud Experience
PBIO 5960 SEC 003	Phylogenetic Analysis

Biology

Biol5485	Introductory Bioinformatics
Biol4601	Topics in Plant Biochemistry

Plant Cell/Molecular

PBio 5514	Plant Molecular Genetics & Development
PBio 5516	Plant Cell Biology
PBio 4516W	Plant Cellular Biology, Writing Intensive
Agro 8231	Cytogenetics
BioC 4332	Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression
GCD 5036	Molecular Cell Biology
PBio 5301	Plant Genomics
Agro 4401	Plant Genetics and Breeding
Agro 8241	Molecular and Cellular Genetics of Plant Improvement
BioC 8002	Molecular Biology and Regulation of Biological Process
BioC 8213/GCD 8213	Selected Topics In Molecular Biology
BioC 8216	Signal Transduction and Gene Expression

BioC 8002	Advanced Molecular Genetics
GCD 8131	Advanced Genetics
GCD 8151	Cell Structure and Function
GCD 8161	Advanced Developmental Biology
Hort 4071W	Applications of Biotechnology to Plant Improvement
PBio 5640	Discussions in Plant Molecular Biology

Plant Physiology

PBio 5412	Plant Physiology Biochemistry I: Structure, Catalysis, Metabolism and Bioenergetics of Biological Systems
BioC 4331	Advanced Metabolism and Its Regulation
BioC 5401	Biochemistry I: Structure, Catalysis and Metabolism
BioC 8001	Manipulation of Plant Growth and Reproduction
Hort 8044	Plant Responses to Environmental Stresses
Hort 8045	Plant-Microbe Interactions
PIPa 5103/8103	

Structure Development and Evolution

PBio 4404	Developmental Plant Anatomy
PBio 4511	Flowering Plant Diversity
Hort 8023	Evolution of Crop Plants
Biol 5409	Evolution
EEB 5011	Pollen Morphology
EEB 5013	Quaternary Plant Macrofossils
PBio 5109	Current Questions in Fungal Biology
PIPa 5203	Introduction to Fungal Biology
Soil 5611	Soil Biology and Fertility

Ecology and Evolution

EEB 4014	Ecology of Vegetation
Biol 5407	Ecology
EEB 4609W/5609	Ecosystem Ecology
EEB 4016	Ecological Biogeography
EEB 4814	Plant Community Ecology
EEB 5033	Population and Quantitative Genetics
EEB 5122	Plant Interactions with Animals and Microbes
EEB 4068/5068	Plant Physiological Ecology
EEB 5221	Molecular and Genomic Evolution
PBio 4321	Minnesota Flora
Agro 5321	Ecology of Agricultural Systems

Agro 4888	Issues in Sustainable Agriculture
EEB 5001	Spatio Temporal Dynamics of Plant Communities
EEB 5009	Quaternary Vegetation History and Climate
FR 5104	Forest Ecology
Hort 5071	Restoration and Reclamation Ecology
PIPa 8102	Epidemiology and Genetics of Host-Parasite Interactions
PIPa 5201	Biology of Plant Diseases