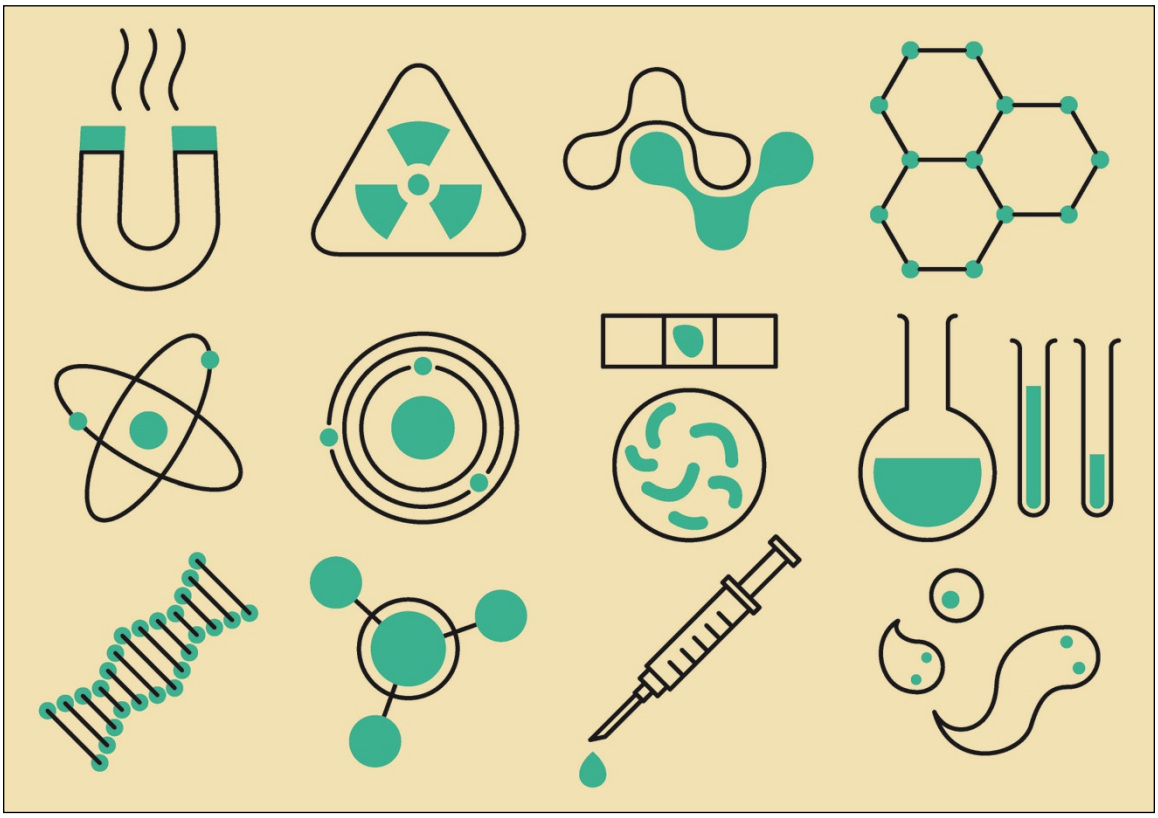
WASHINGTON STATE UNIVERSITY

SCHOOL OF BIOLOGICAL SCIENCES



GRADUATE STUDENT HANDBOOK

Updated December 4, 2018

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1.0 INTRODUCTION

The School of Biological Sciences (SBS) at Washington State University (WSU) offers graduate programs leading to the MS and PhD degrees. Our graduate programs are an important part of the overall research program in plant and animal sciences at WSU. The state-of-the-art school and campus facilities and the collegial atmosphere of SBS and the university provide an ideal setting for the dedicated student to obtain interdisciplinary training in modern science, as well as mastery of his or her own specialty. The school provides students with opportunities and support to work closely with leaders of their areas in both laboratory and field settings. This handbook is designed to acquaint students with the **two** sets of regulations and procedures that will guide them to their graduate degrees:

- the university-wide policies of the **Graduate School** and
- the departmental policies of the **School of Biological Sciences**. Failure to adhere to these regulations and to observe the degree requirements inevitably results in complications and could delay completion of the degree.

Faculty within SBS value graduate study as a period of academic growth and professional development. We facilitate and encourage students to obtain a broad working knowledge of their chosen areas. We wish you every success with your graduate program and in your future career.

2.0 NEW STUDENT INFORMATION

2.1 ORIENTATION

The Associate Director for Graduate Studies of the School of Biological Sciences will facilitate an orientation event for new students during the week before their first semester begins. During this orientation, students will review school and university regulations, begin a course in teaching training, receive training in lab and course safety and become familiar with faculty research programs, the School's facilities, staff and expectations of their graduate program. During this time, the Associate Director will also meet each new student as needed to discuss degree requirements including any prerequisites or undergraduate deficiencies, transfer credits from previous MS degrees, graduate seminars, and special topics course requirements, and to answer any questions new students

2.2 OFFICE AND DESKS

The School of Biological Sciences will provide desk and office space for all graduate students in the school, as long as space is available. Contact the Associate Director for your assignment. Please note that moving among offices can only be done with permission of the Associate Director.

2.3 KEYS

The Principle Assistant in the main SBS office will issue keys. To receive keys you will be required to sign an agreement that states that you will obey all WSU rules regarding keys. There is no charge for keys; however, you may be subject to costs of key replacement and rekeying if you lose or fail to return the keys when you leave. Please assume responsibility for locking all office, classroom, and laboratory doors.

2.4 BUILDING PASS

Graduate students are required to have a valid student identification card in their possession during hours when the buildings are closed and to present your card to security personnel upon request. Student ID cards may be obtained from the

Cougar Card Center in the bottom floor of the CUB or by calling 509-335-CARD (2273).

2.5 Mail

Students will be assigned a mailbox in Abelson 320. Mail sent from and received at the University should only be official correspondence. Personal mail should be delivered to private residences. Business correspondence can be left in the SBS main office for mailing. Letters should not be stamped and must have the return address of the school with the +4 zip code (4236).

2.6 Telephones and Fax

Telephones are available for local calls. Graduate students should work with their advisors in case of a need for work-related long-distance calls. Personal long-distance telephone calls are prohibited. For long-distance faxes, you will need a long-distance access code. Please see the Finance Manager for additional information.

2.7 Computer Use

A WSU network account, including an email address, is opened for all graduate students upon admission. Roving IP addresses are also available through IT for connecting laptop computers to the internet. Official WSU correspondence should only be sent from, or to @wsu.edu email addresses.

Students have access to facilities in the Science Learning Instructional Center (SLIC, Abelson 227). Computers in SLIC are situated in three laboratories and students are free to use these computers when the laboratories are not reserved for classes. Computers are also available for graduate student use in Abelson 324. In addition, laptop computers and projectors for presentations; scanners; digital topographical maps for Idaho, Oregon, and Washington; and limited amounts of software are available through the School of Biological Sciences. A sign out sheet for computers and projectors is located in Abelson 301. For other equipment and software, students should check with faculty or staff concerning their availability.

2.8 Photocopying

There are three copiers available to SBS graduate students. Two of these are in Abelson 324 and one in Abelson 301. You will be assigned a copier code (usually the first 4 digits of your Social Security #) to be used for your educational endeavors. Copies will be charged (@ $0.03/copy) against your annual graduate allocation (which varies from year to year; contact your advisor for the current limit). There is a separate copier code for copying related to your TA responsibilities. Please see the Finance Office for the appropriate code.

2.9 Academic Coordinator

Your Academic Coordinator is available for assistance with university forms, grant and scholarship applications, and general questions. All graduate paperwork must be routed through the Academic Coordinator.

2.10 Research Supplies

Students usually receive an annual allocation from the School for research-related costs (books are not allowed). Check with the finance office on availability of funds and to facilitate purchases.

3.0 SCHOOL OF BIOLOGICAL SCIENCES GUIDELINES

3.1 STUDENT APPOINTMENTS

To ensure that all necessary paperwork has been completed, all graduate students should report to the School main office in Abelson Hall 301 prior to August 16 (or January 1 for spring appointments); responsibilities related to assistantships formally begin on this date. Students on teaching assistantships (TA) are assigned teaching responsibilities within the School of Biological Sciences. Teaching assistantships are assigned by the Associate Director for Graduate Studies based on a combination of the student's expertise and the needs of the department. As much as possible, we try to match assignments to student and/ or faculty requests, but these are not guaranteed. Students receiving a TA should report to the Instructional Support Supervisor in Abelson 216 with a schedule of availability. All TA and RA appointments are either for the academic semester (8/16 to 12/31 or 1/1 to 5/15) or the academic year (8/16 to 5/15).

Students in a Master's degree program will receive a TA I (step 42) salary for the academic year (9 months) and Doctoral students with a Master's degree will receive a TA II (step 47) salary for the academic year. Doctoral students without a Master's degree will be paid at the lower rate (TA I) until they advance to PhD candidacy (i.e., after they complete their preliminary examination), and from then on, they will be paid at the higher rate (TA II).

Paychecks are mailed on the 10th and 25th of the month and cannot be forwarded. It is recommended that students sign up for direct deposit, which can be done through the finance office. To report changes of address, go online to MyWSU.

The maximum time for guaranteed financial support under graduate appointments is two years for a Master's student, five years for a Doctoral student who possesses a Master's degree, and six years for a Doctoral student admitted without a Master's degree. In extenuating circumstances, the graduate student's advisor may submit a request, using the procedures outlined in the SBS policy on extensions, to the Associate Director for Graduate Studies and the Graduate Programs Committee (GPC) for a one-semester extension of appointment as a "Temporary Teaching Assistant." Each case will be evaluated individually considering the student's record and special circumstances of the

request. Extension requests are dealt with one semester at a time. Requests for an extension of appointment beyond one year need to be brought to the faculty by the student's advisor. In general, priority of extension requests will be as follows: PhD students enrolled in a SBS degree, MS students enrolled in a SBS degree, MPS students under the guidance of an SBS advisor. First extensions have priority over second extensions, and so on.

IMPORTANT: SBS extensions are *separate* from the Graduate School's extensions and are handled differently. Note in particular that a PhD student has 6 semesters to graduate after passing their qualifying exam per Graduate School policy. Thus, for example, a PhD student who enters the program without a MS degree and passes their qualifying exam during their second year of study would not need an extension of TA support to continue into their (guaranteed) 6th year of support from SBS, but *would* need *an extension* from the Graduate School. More details on Graduate School extensions can be found in the Graduate School Policies and Procedures manual located here: https://gradschool.wsu.edu/chapter-six-f/

Graduate students on appointment enter into an agreement with the University that both parties are expected to honor. University policy requires graduate appointees to work 20 hours per week and to be at work each workday, including periods when the University is not in session with the exception of legal holidays (see WSU Holidays). To maintain an assistantship, a student must be enrolled in a minimum of 10 credits for the entire semester. With satisfactory performance and the availability of funds, the school will continue to provide the student with financial support.

3.1a *Summer Teaching Assistantships*

To apply for summer teaching assistantships, a student must provide the Academic Coordinator with a letter from their advisor that states they have no other means of summer support. Applications will be ranked based on the following criteria (in decreasing order of importance):

1. TA experience in one or more of summer courses offered;
2. prior TA evaluation scores;
3. a demonstrated lack of prior summer TA support;
4. degree sought; PhD students will have priority over MS students;
5. whether a student is progressing on time to complete his or her degree (students on extensions are not eligible);
6. whether the student has submitted all relevant paperwork to the graduate school based on time in residence.

3.2 Residency

Students with at least half-time appointments as research or teaching assistants may qualify for a waiver of tuition by establishing residency in Washington State. Information and the application form are available online here. The deadline for submission of the questionnaire and documentation is the **30th calendar day** of the third semester. However, it is to your advantage to submit your file prior to the beginning of the semester to be considered for a change of residence status by the tuition due date. Allow 3–4 weeks review time. After reading the requirements, students should discuss any questions regarding their residency with the Graduate School. Failure to promptly establish residency places the non-resident tuition waiver in jeopardy and may subject the student to full non-resident fees.

3.3 Handling Classroom Disturbances

The College of Arts and Sciences recommends the following guidelines to teaching assistants on handling classroom disruptions:

Instructors must be prepared to handle the unexpected. One unpleasant task that confronts all instructors at some time is handling a disruptive student. Each instructor has his or her own personal approach to such problems, but a few guidelines are described here in an effort to provide some direction for teaching assistants.

1. Since classroom disruptions come in many sizes and forms, no general policies can be applied to every situation. The cardinal rule, however, is for the instructor to remain as calm as the situation warrants. The instructor should remember that he/she is serving as a University official, and thus has authority supported by the State of Washington Administrative Code.

2. Most disruptions can be handled within class. Most students will not repeat disruptive behavior if it is pointed out to them. The instructor's personal style will determine the approach to be taken in informing the student of the inappropriate behavior and of the admonition to cease and desist.

3. In cases of repeated disruptive behavior that is not serious enough to cause immediate risk to the class, the teaching assistant should inform the course faculty instructor, who should then undertake corrective action.

4. In case of a serious incident that causes physical or verbal intimidation of the instructor or students and that cannot be handled within the classroom, the teaching assistant should leave the room and contact the course faculty instructor for assistance. If the faculty instructor is not available, the director or another faculty member should be immediately notified (for night time labs, the campus police may be contacted).

5. In extreme cases of disruptive behavior where the teaching assistant perceives there to be an immediate threat to the safety of persons or to the continuation of orderly instruction, the teaching assistant may leave the classroom and contact the campus police for assistance.

6. The university simply does not tolerate cheating. Cases of cheating should be immediately documented and taken to the faculty member responsible for the course.

3.4 Graduate Student Evaluations

The Graduate School requires an annual review of each graduate student. Students will be provided with an evaluation form by December 15. Forms should have both student and major advisor comments complete and turned back into the Graduate Coordinator *no later than* **February 1st** of each year. **Any student who fails to submit an evaluation form, complete with student *and* advisor comments, by the deadline will be ineligible for intra-departmental fellowship funding (e.g., Elling and Higinbotham awards).**

The Graduate Programs Committee reviews each student's performance, including performance as teaching assistants, for those on TA appointments. The Associate Director for Graduate Studies will provide comments on the evaluation and return it to the student for the student's comments and signature. A digital copy will be placed in the students online file and additional copies will be distributed to the student and their thesis advisor. If a student's progress is unsatisfactory, their thesis committee will be consulted to determine whether continuation of graduate student's program is warranted. The Associate Director for Graduate Studies will notify the student in writing of the committee's

recommendation and forward a copy of the report to the Graduate School. In the case of two unsatisfactory annual reviews in subsequent years, the student may be dismissed from the graduate program.

Teaching assistants are also evaluated by student questionnaires each semester. The Associate Director will summarize the teaching evaluations and comments and will make a copy of the summary available to the TA, the instructor of the course, and the Scientific Instructional Technician. If a TA's performance is unsatisfactory, the Associate Director can, in consultation with GPC, make a recommendation to the Director of the School of Biological Sciences to terminate the appointment.

3.5 Travel

Authorization for all off-campus travel must be obtained before leaving campus to be eligible for accident insurance or reimbursement of expenses. Graduate students must obtain approval from their supervisors and the Director of the School of Biological Sciences before all trips. If travel is to be reimbursed, travel advances can be obtained by submitting a request at least ten working days before the trip. Additional travel information is available at WSU Travel Services.

Graduate students are encouraged to attend professional meetings. Support is available for travel and includes student-training grants (see scholarships *Section 6.0*), individual and block grant travel programs, and travel support from faculty grants. Assistance with locating funding is available through the Office of Research Support and Operations.

3.6 Leave

Students on appointment at WSU do not earn vacation or sick leave. Any absence must be arranged in advance with the RA supervisor or TA instructor of record, as well as the Director of the School of Biological Sciences.

3.7 Consensual Relationships

Graduate students may righfully develop consensual relationships. As a matter of sound judgment, graduate teaching and research assistants in the University

community accept responsibility to avoid and apparent or actual conflict of interest between their professional responsibilities and personal relationships with students or those whom they supervise, evaluate, or exercise other relationships of power or authority. If any questions arise regarding consensual relationships, please see the WSU policy.

3.8 Exit

Before departing from WSU, students should return all teaching and research materials and keys, leave a forwarding address, and consult with their advisor about management and archiving of their thesis data, cleaning up samples, chemicals, etc., from their research. Students also need to meet with the Director of Graduate Studies for an exit interview.

3.9 Future Employment

The ability of graduate students to gain employment in their chosen field is of great interest to the faculty. During the course of training, graduate students are strongly encouraged to attend scientific meetings, present and publish their research work, and meet scientists in their field of interest. Students will also become aware of positions in their fields through meetings, and announcements in society newsletters, and scientific journals. Information on positions available to MS and PhD graduates is posted on second floor of Abelson Hall.

3.10 Safety Program

3.10.1 Safety Training

Safety training is required of every new graduate student regardless of prior training. A safety training session will be presented by permanent members of the Safety Committee during graduate student orientation in August, before the beginning of fall semester. Students arriving at other times of the year will be individually instructed before they begin work. This training will include both general safety and laboratory safety. The safety orientation will be documented on appropriate forms to be signed by the employee. These forms are to be kept in the employee's permanent file.

A graduate student's supervisor will be responsible for furnishing more site-specific information. This will include the following items:

1. location of the Laboratory Safety Manual
2. location of the nearest Material Safety Data Sheets
3. location and use of the chemical spill kit
4. location and update procedure for the chemical inventory
5. location and use of personal protective equipment and other safety equipment
6. lab-specific standard operating procedures
7. lab-specific chemical storage plan
8. lab-specific disposal procedures for sharps, glass, biohazards, chemical waste, and radioisotopes
9. other lab-specific practices

Employees are responsible for conforming to the Washington Industrial Safety and Health Act regulations, which include: 1) studying and observing all safety practices governing their work; 2) offering safety suggestions contributing to a safer work environment; 3) applying the principles of accident prevention in their daily work and using proper safety devices and protective equipment as required by their employers or employment; and 4) reporting to their immediate supervisor each industrial injury or occupational illness, regardless of the degree of severity.

3.10.2 Safety Committee

The committee consists of five permanent members and two rotating faculty positions. The faculty will serve two-year terms and act as chair during their second year. The functions of the Safety Committee are:

1. to act as a two-way communication link for safety matters between University administration and the School of Biological Sciences
2. to formulate safety policies for the School of Biological Sciences

3.10.3 Accident Reporting

Graduate students should promptly report *all* accidents, occupational illnesses, and near misses immediately to their supervisors. The supervisor will fill out a report within 24 hours and have the employee sign it. Teaching assistants are to promptly fill out an Incident Report form to report incidents involving students in teaching laboratories. Report forms are available next to the First Aid Kits in all laboratories. Incident Reports are available online.

For fire, police, and ambulance emergencies and hazardous material spills--call 911. In the event of radiation contamination or spill call the Radiation Safety Office at 509-335-8916.

4.0 SCHOOL OF BIOLOGICAL SCIENCES FACILITIES

4.1 INTRODUCTION

Opportunities at WSU for basic research in the School of Biological Sciences are especially strong in plant and animal physiology, modern structural plant science, ecology and evolutionary biology, systematics, and the health sciences. Each of these disciplines provides many opportunities for careers in academics, agriculture, government, and industry in the U.S. and abroad.

4.2 RESEARCH FACILITIES

The School of Biological Sciences is well equipped for many modern research procedures in the life sciences, including cloning, sequencing, and characterization of genes, gel electrophoresis, DNA restriction fragment analysis, *in situ* hybridization, microautoradiography, image analysis, cell culture, isotope ratio by mass spectrometry, and plant gas exchange and fluorescence measurements. The school has excellent growth chamber, greenhouse, and darkroom facilities. In addition, it manages several major University facilities, such as the Marion Ownbey Herbarium, which contains more than 300,000 mounted specimens of vascular plants and cryptogams. The Conner Museum contains more than 60,000 specimens for zoological study. Other major facilities include the Franceschi Microscopy and Imaging Center, which is housed in Abelson hall within the School of Biological Sciences. Students interested in field-oriented projects have access to the Smoot Hill Biological Reserve and experimental garden space on Observatory Hill and on Airport Road. Vivarium facilities are available for students whose research will involve the use of live animals. However, it is crucial that protocols for research involving vertebrates be submitted to and approved by the Institutional Animal Care and Use Committee (IACUC) before *any* work is undertaken (this includes both field and laboratory research). Students must also take an animal handling course. Further information may be obtained from the IACUC's website. The Owen Science and Engineering Library, adjacent to the Life Sciences Complex, contains one of the foremost collections of library materials in western North America.

4.3 PLANT GROWTH SPACE

The school has a 4,000 sq. ft., 9-compartment greenhouse on the 7th floor of Abelson Hall and a 2,800 sq. ft., 4-compartment greenhouse at the Steffen Center. Both greenhouses are used for teaching and research. In addition, 23 plant growth chambers and 4 tissue culture chambers are located in Eastlick Hall (B93, B95, and B97) and one large growth room in Heald Hall (302C). These are used primarily for research. All requests for space must be approved by the student's major advisor and submitted early in the fall semester to the Plant Growth Facilities Manager on the space request form (4.3.A). Space assignments will be made jointly by the Plant Growth Facilities Manager and the Director of the School. Consult the Plant Growth Facilities Manager should your space needs change at any time during the year.

Ultimately, the care of plants in the greenhouses and growth chambers will be the student's responsibility. Routine watering, fertilization and pest control in the greenhouse are performed by the greenhouse staff. Routine watering and fertilization of growth chamber plants are the responsibility of the student. Temperature, photoperiod and ventilation adjustments, fumigation, spray of pesticides, and general care of the greenhouse and growth chambers are the responsibility of greenhouse personnel. Students should not perform any of these jobs, except under direct supervision. Students must be checked out of greenhouse or growth chamber space by the Plant Growth Facilities Manager when their studies are completed. Work areas must be cleaned, pots washed and growing media disposed of as directed by greenhouse personnel. Report immediately any malfunctions or problems to greenhouse personnel. Should problems arise during off-hours, call Chuck Cody at 509-332-3855. If he is unavailable, call the Physical Plant at 509-335-9000 for immediate assistance.

5.0 REQUIREMENTS FOR DEGREES

5.1 Introduction

With the assistance of your advisor and by the end of your first fall semester if you are an MS student and end of your first spring semester if you are a PhD student, you must establish a research advisory committee and submit a Program of Study (which outlines your planned coursework to complete your degree) to the graduate school. You should also begin to develop a research proposal modeled after the federal NSF, USDA, or NIH grant proposal formats. Typically, MS students present this proposal to the research advisory committee during the second semester, and PhD students by the beginning of the fifth semester.

5.2 Thesis Advisor

Normally the thesis (i.e., major) advisor for a degree program is identified before admittance into the program and the award of a TA or RA. The thesis advisor is the graduate student's primary contact concerning all matters related to his or her program of study and thesis research. The advisor assists in selection of the thesis committee, development of a program of study, and thesis research proposal, and is responsible for facilitating and monitoring the student's academic and professional growth, reviewing program changes, and arranging for graduate student support. The student should consult with his or her advisor before registering for courses each semester.

5.2.1 Change of Advisor

Under certain circumstances a student may wish to change graduate advisors during the course of study. If such a change is feasible, the student should discuss this matter with his or her current advisor, the new advisor, and the Associate Director for Graduate Studies.

5.3 Masters or Doctoral Thesis Research Committee

The Masters or Doctoral Thesis Research Committee is decided jointly by the student and thesis advisor. The committee consists of the faculty advisor, who

serves as chair, and other faculty in the area of the student's research interest. The minimum number of WSU faculty members on a graduate student's thesis committee for both the MS and PhD is three. A **majority of committee members** (e.g., 2 of 3, 2 of 4, or 3 of 5) must be active members of the graduate faculty from the School of Biological Sciences and also tenure-track faculty in SBS. (Tenure-track faculty in SBS are not automatically members of its graduate faculty.)

The committee guides the student's research and approves a program of study. The program of study must include those courses required to fulfill curriculum requirements. The program of study must also include courses to correct any deficiencies (e.g., organic chemistry, calculus) as identified by the thesis research committee. Meetings of the Masters or Doctoral Committee to assess the research progress of the student is left to the discretion of the thesis committee. Nonetheless, it is required that the student will facilitate meetings of this committee **at least once per year**. The committee also administers the thesis proposal defense and final examination for MS students and the preliminary, thesis proposal defense, and final examinations for PhD students.

5.4 Program of Study

5.4.1 Introduction

All students should become familiar with the Graduate School course requirements as outlined at gradschool.wsu.edu. Forms for submitting MS and PhD paperwork are available online here. Milestones for the MS and PhD programs are outlined in Appendix sections 5.4.1.A and 5.4.1.B, respectively. The student plans the course program in concert with the advisor and thesis committee.

The program of study must be completed via use of this form and submitted to the graduate school by the end of the first semester of study for MS students and by the end of the first year of study for PhD students. If a student wishes to add committee members from outside of WSU, an exception to policy memo that justifies the need for this committee member may need to accompany their program of study submission, along with a CV of the external member to the graduate school.

The Graduate Coordinator is available to assist with completion of the Program of Study form. All Program of Study forms must be submitted to the Graduate Coordinator, who will directly submit them to the graduate school.

A flexible number of credits is allowed for research and thesis each semester. Students, with their advisor's approval, should register for Biol 700 or 800 to bring their credit load to 10 or more credits each semester.

This is a reminder regarding BIOLOGY 700/702/800 credits in myWSU: Faculty advisors are responsible for setting expectations each semester that a student is enrolled in research credits and provide an S or U grade at the end of the semester based on the student's performance in meeting those requirements. Note that two successive U grades may result in dismissal from the graduate program upon recommendation of the student's advisor. In extenuating circumstances, faculty may use the "X" grade to indicate continuing progress toward completion of those requirements. The "X" grade should be changed when the faculty member determines that the student has successfully met the requirements for that semester; the X grades should be changed by faculty no later than the semester of the final defense.

5.4.2 MS Programs in the School of Biological Sciences

Plant Biology and Biology Thesis MS Degrees:

Graduate School Requirements—a minimum of 21 graded credits at the 400- and 500 level is required for the thesis degree program (online here; p. 62). Timelines and deadlines for the thesis MS degree program can be found here.

School of Biological Sciences Requirements—a minimum of 9 graded credits from the School of Biological Sciences (**BIOLOGY**) is required for the thesis degree programs in Plant Biology and Biology. As a part of the graded credits from the school, MS students are expected to enroll in at least 1 credit of special topics seminar **BIOLOGY 589** (Advanced Topics in Biology), the 2 credit-hour grant writing course, **BIOLOGY 582**, and the graduate teaching in biology course, **BIOLOGY 585**. At the discretion of the Associate Director, students who have already taken similar courses at other universities may have one or both of these course requirements waived. In addition, MS students must enroll in **BIOLOGY 500 section 2**, which requires students to attend weekly SBS departmental

seminars (Mondays from 4:10-5 PM; attendance of a minimum of 10 seminars per semester is required for a S grade). MS students may waive this requirement for one semester during their degree program. Thesis MS students must **publicly present a seminar about his or her proposed research during their second semester** (can be during BioLunch).

During the semester they intend to graduate, MS students will also present a seminar to the school based on the student's thesis research while enrolled in two credits of **BIOLOGY 500, section 1**. Please note that BIOLOGY 500 should be added to the S/U portion of the Program of Study, **not** the graded credits section of the Program of Study.

Generalized Timeline for thesis MS degree

Year 1 **Fall**: coursework, assemble thesis committee, file program of study
Spring: continue coursework, begin research, present research proposal
Summer: continue research
Year 2 **Fall**: complete coursework, complete data analysis
Spring: write and defend thesis, graduate

General MS Thesis Guidelines— It is generally expected that a MS thesis consists of at least two chapters: 1) an introduction that puts the work in a broader context and summarizes the main results; and, 2) a second chapter that is considered a publishable piece of work based on the student's original research conducted at WSU.

Biology Non-Thesis MS Degrees:

Graduate School Requirements—a minimum of 30 total credit hours are required; 26 of these credits must be graded, and a minimum of 17 hours must be at the 500-level. (See Graduate School Policies and Procedures at gradschool.wsu.edu .) Timelines and deadlines for the MS degree program can be found here.

School of Biological Sciences Requirements—a minimum of 12 graded credits from the School of Biological Sciences (BIOLOGY) is required for the non-thesis degree program in Biology. The program must include course work from all 3 areas of the core curriculum (ecology, evolution, physiology) within the School of Biological Sciences. As part of the graded credits from the school, non-thesis MS students are expected to take one credit of advanced topics in biology seminar (BIOLOGY 589) and the teaching training course (BIOLOGY 585).

In the final semester, the student will arrange for his or her committee to hold a ballot meeting, scheduled through the Graduate School, to determine whether the student has satisfactorily met all the requirements of the program. Students must register for a minimum of 2 credits BIOLOGY 702 (non-thesis option) for the semester or summer during which the examination or balloting is scheduled. Non-thesis MS students are exempt from the general requirement to present a seminar to the school.

5.4.3 PhD Programs in the School of Biological Sciences

Graduate School Requirements—a minimum of 21 credits of 400- (maximum 6 credits) and 500-level graded course work is required for the degree (see *Graduate School Policies and Procedures* online at Policies and Procedures). Up to 50% of these credits may be transfer credits from another university (e.g., for students with a MS) under Graduate School regulations and approval of the student's academic advisor. Timelines and deadlines for the PhD program can be found here.

School of Biological Sciences Requirements—a minimum of 9 graded credits from the School of Biological Sciences (BIOLOGY) is required for the degree programs in Plant Biology and Biology. An additional 6 graded credits outside the student's main research area will satisfy a breadth requirement; appropriateness of these courses will assessed by the student's faculty advisor and their thesis committee. As a part of the 9 graded BIOLOGY credits, PhD students are expected to take 2 credits of advanced topics in biology seminar (**BIOLOGY 589**), a grant writing course (**BIOLOGY 582**), and a graduate teaching in biology course (**BIOLOGY 585**). At the discretion of the Associate Director 582 or 589 may be waived if similar courses were taken at a previous institution. In addition, PhD students must enroll in **BIOLOGY 500 section 2**, which requires students to attend weekly SBS departmental seminars (Mondays from 4:10-5 PM; attendance of a minimum of 10 seminars per semester is required for a S grade). PhD students may waive this requirement for up to two semesters during their degree program.

PhD students must also enroll in 2 (ungraded) credits of **BIOLOGY 501** the semester they orally defend a research proposal before their thesis committee, and also enroll in 1 (ungraded) credit of **BIOLOGY 500, section 1**, the semester they present a seminar (usually during the semester they are to graduate) to the school based on their thesis research. Please note that BIOLOGY 500 (seminar

presentation/ attendance) and BIOLOGY 501 (proposal defense) should be added to the S/U portion of the Program of Study, **not** the graded credits section.

Generalized Timeline for PhD degree (5 years with MS, 6 years without)

Year 1	**Fall**:	coursework
	Spring:	continue coursework, assemble committee, **file program of study**
	Summer:	begin research project
Year 2	**Fall**:	continue coursework, continue research
	Spring:	complete coursework, **take oral qualifying exam**
Year 3	**Fall**:	complete **proposal defense** (enroll in Biol 501), apply for extramural funding, take courses as needed
	Spring:	continue research, take courses/ seminars as needed
Final Year:		complete research, write and defend thesis

General PhD Thesis Guidelines— It is generally expected that a PhD thesis consist of at least four chapters: 1) an introduction that puts the work in a broader context and summarizes the main results; and, 2) three additional chapters that are considered publishable pieces of work based on the student's original research conducted at WSU.

5.4.4 Recommended Courses

SBS courses

Click here for a list of BIOLOGY prefix graduate courses from the online WSU catalog

Statistics courses

Stat 511 – Statistical Methods for Graduate Researchers
Stat 512 – Analysis of Variance of Designed Experiments
Stat 514 – Nonparametric Statistics
Stat 530 – Applied Linear Models
Stat 535 – Regression Analysis

Other WSU courses

Soil_Sci 508 – Environmental Spatial Statistics
Soil_Sci 514 – Environmental Biophysics
Soil_Sci 531 – Soil Microbiology
Soil_Sci 568 – GIS Spatial Analysis
Anim_Sci 551 – Endocrine Physiology
Anim_Sci 558 – Molecular & Cellular Reproduction
MPS 525 – Plant Molecular Genetics

MBIOS 446 – Epidemiology
MBIOS 540 – Immunology
MBIOS 542 – General Virology
HORT 503 – Bioinformatics for Research (Fall, even years)

University of Idaho (these courses are cross-listed – students may take them for WSU credit)
BIOLOGY 416 – Plant Diversity and Evolution
BIOLOGY 456 – Computer Skills for Biologists
WLF 552 – Ecological Modeling
WLF 544 – Large Mammal Ecology
WLF 545 – Wildlife Habitat Ecology
WLF 555 – Statistical Ecology
WLF 561 – Landscape Genetics
WLF 562 – Landscape Genetics Lab

5.4.5 Required Courses

BIOLOGY 582 – Professional Communication in Biology: Grant Writing
BIOLOGY 585 – Professional Development/ Training for College & Univ. Teaching
BIOLOGY 589 – Advanced Topics in Biology

5.4.6 Seminars and Attendance

All thesis-option graduate students must present their thesis research in a public seminar during the same semester they are registered for **BIOLOGY 500, section 1**, which is usually the last semester of a degree program. Support from various fellowships/scholarships/ traineeships should be acknowledged. Graduate students are expected to attend weekly departmental seminars (Mondays at 4:10 PM) as an important component of their graduate training and must enroll in **BIOLOGY 500 section 2** each semester to meet this requirement.

5.5 Preliminary Examination & Proposal Defense for PhD Students

There will be two **oral examinations**. The student must pass both examinations to successfully complete a degree program within the school.

5.5.1 Preliminary Examination

The **first** examination is an oral **preliminary examination** required for advancement to PhD candidacy. While concentrating on the area of interest as defined by the student's research topic, no topic is excluded from the oral preliminary exam.

This examination will be formally administered through the Graduate School.

Preliminary examinations will be scheduled only for graduate students whose programs of study have been approved by the Graduate School, the Associate Director for Graduate Studies and the thesis research committee, and only after most of the course work is completed (6 or fewer graded credits remaining to complete).

The Preliminary Examination must be taken no later than the end of the fourth semester for PhD students with an MS degree, and no later than the end of the sixth semester for PhD students without an MS degree.

Forms scheduling the preliminary examination may be obtained online and must be submitted at least 10 working days before the examination date.

Pass or failure of this examination will be guided by a rubric filled out by the graduate student's advisory committee (see Appendix 3.4B). Failure of the examination makes it uncertain whether the candidate is qualified for the PhD. If a candidate fails the preliminary examination, the examining committee may decide:

1. that the candidate is unqualified and should not continue for the PhD degree in the School of Biological Sciences at WSU; or
2. that the candidate may be qualified and should be allowed to retake the preliminary exam. The examination must be taken no earlier than three months after the first preliminary exam and no later than one year after the first exam. Failure of the second exam will result in dismissal from the SBS graduate program.

Although not required by SBS, a **written preliminary examination** may be given prior to the oral examination if requested by the student or the thesis committee. This is not the proposal defense described below but a general knowledge examination and would be based on questions solicited from the thesis committee. To help ensure consistency, the following requirements for written exams apply:

a) The student must schedule a meeting with their advisory committee at least two months prior to the date of the written examination to discuss the exam format and committee expectations.
b) The format of the written exam will be decided upon by the committee. The exam may be open or closed book. The committee may choose to assign a review paper, as long as its content does not overlap extensively with that of the dissertation proposal. A description of the agreed upon-format of the exam will be placed in the student's file.
    i. In the case of closed or open book exams, the committee will inform the student of the general topic areas that should be studied prior to the exam. Questions from each committee should be given to the student's major advisor in advance and the advisor can request revisions of questions. The exam should occur over no longer than 5 consecutive business days and take no longer than 4 hours per committee member to answer questions.
    ii. In the case of a review paper, the student will have at least two months to complete the review paper, which shall be formatted as a journal article manuscript.

c) After the written exam, the student will consult with committee members as to his or her performance. If the student passes the exam, he/she will be required to take the oral qualifying exam within 30 days. If the student fails the exam, the student will be required to re-take the exam within 90 days.

5.5.2 Dissertation Project Proposal Defense

The **second** oral examination is an internal SBS requirement and will consist of an oral **proposal defense** of the student's research project (see 5.6 below) Students are expected to complete this exam within one semester of their oral qualifying exam. Students will schedule this exam in collaboration with their committee. During the semester of the proposal defense, the student will register for BIOLOGY 501. Pass or failure of this examination will be guided by a rubric filled out by the graduate student's advisory committee (see Appendix 3.4C). Upon passing the proposal defense, the student will provide a written copy of the proposal to the graduate coordinator and have the student's advisor verify that they passed the exam (via email) to the graduate coordinator).

5.6 Research Proposal

In addition to the oral preliminary examination, PhD students are required to write and defend a research proposal. It is a requirement that this proposal be presented publicly to the department (generally during BioLunch; the exam portion of the proposal defense will be restricted only to the student's committee) The research proposal will:

1. follow the format of a large granting agency for competitive grants, e.g., NSF, USDA, or NIH.

2. be developed in conjunction with the thesis research committee; it is the committee's responsibility to approve the proposal and schedule the oral defense of the research proposal.

3. be submitted electronically to the Graduate Coordinator for the student's permanent file upon successful completion of the defense; the student will receive graded credit for BIOLOGY 501 from the thesis research committee.

4. be defended no later than one semester after the general-knowledge oral preliminary examination; however, it may be done before the oral preliminary examination.

5.7 Thesis

Each student must hold a committee meeting one semester prior to anticipated graduation to present the thesis or dissertation outline to their committee. It is expected that this document serve as an agreement between the student and his/her advisory committee as what is expected in the final thesis or dissertation. However, it is recognized that some theses or dissertations may change in content during the final writing stages, and in such cases, the student should work with their committee to approve a revised outline prior to scheduling his/her defense.

5.7.1 Thesis Formatting

For information on formatting the theses please refer to the graduate school's Dissertation/Thesis Submission Guidelines. All theses must also generally adhere

to the following guidelines for the reference section as approved by the individual candidate's research committee:

1. The complete draft of a MS thesis or PhD dissertation must be turned into the student's advisory committee at least 10 business days prior to when the student plans to have their committee fill out the thesis or dissertation defense scheduling form. This means that if the student plans on meeting the graduate school deadline of 10 business days prior to their defense, that they must give a complete draft of their thesis a minimum of 20 business days prior to the anticipated defense date.
2. The format for each chapter may follow the format for the journal to which the manuscript has been or will be presented (i.e., no consistent format is required between chapters).
2. Full citation for each reference (i.e., including all the authors and the title of the article) must be given throughout the thesis, but otherwise each chapter may follow the format of a particular journal.
3. Use a consistent form of citations throughout the thesis with the student selecting the format of a particular journal that gives the complete citation.

5.8 Final Oral Examination

Final examinations for (thesis) MS and PhD degrees will follow existing Graduate School regulations (see Graduate School Policies and Procedures.) All graduate students must satisfactorily pass a final oral examination in defense of their thesis research. After preliminary approval of the thesis by the thesis committee, the final examination will be scheduled through the Graduate School via the Graduate Coordinator. Copies of the thesis must be provided to each member of the thesis committee, thesis advisor, and the school at least 20 business days before the oral examination. An abstract must also be placed in Owen Science and Engineering Library. Questions asked during the final examination usually relate to the thesis research but are not limited to the thesis. Pass or failure of this examination will be guided by a rubric filled out by the graduate student's advisory committee (see Appendix 3.4D). Upon completion of the oral examination, a signed copy of the thesis must be presented to the Graduate School within five working days. Copies of the thesis will also be presented to the school and the thesis advisor.

5.9 Timing of Defense for MS Theses and PhD Dissertations

Thesis and dissertation defenses will take place during fall and spring semesters of each academic year. Only under unusual circumstances can a defense be held during summer, and only with prior approval of the student's committee early in the preceding spring. Many faculty in the school have research programs that keep them away from campus during summer, and many professional meetings and symposia take place at that time. Consequently, it may be impossible to find sufficient time during summer for the committee to read thoroughly the draft, provide comments, allow sufficient time to incorporate comments into a version suitable for defense, and identify a date for the defense. As such, students should not assume that committee members will be able to convene for a defense during summer, and should plan accordingly. Students need to find a day when everyone is available and allow a few weeks for all members of the committee to read and comment on the penultimate draft. Only after each committee member's comments have been received and corrections made to the draft will each committee member be expected to sign the form allowing the defense to be scheduled.

5.10 Graduation

Students are encouraged to apply for graduation and their degree the semester before they plan to graduate and obtain the appropriate packet of information regarding procedures and deadlines for thesis defense and graduation. Failure to meet deadlines could require enrollment for an additional semester. The graduate school deadlines for graduation can be found here.

5.11 Requests for Extension

Occasionally, a student may not complete the degree in the time frame of his or her guaranteed funding from the School of Biological Sciences (MS 2 years; PhD with MS degree 5 years; PhD w/o MS degree 6 years) due to a variety of circumstances. In this case, the student must submit a request for funding extension request to the Graduate Programs Committee via the Graduate Coordinator that includes the following:

1. a justification for the extension request, outlining the **extenuating circumstances** that have led to the delay in graduation;
2. a timeline for completion of the degree program;

3. a letter of support from the student's advisor agreeing that the timeline for completion is reasonable.

Extension requests are only considered 1 semester at a time. Extension requests for Spring semester will be due September 15 and extension requests for Fall semester are due March 15 annually.

Additionally, if a PhD student is seeking an extension **and** they are at least 3 years beyond taking their oral qualifying exam, an exception to policy memo must be submitted to the graduate school outlining the justification for their extension request for 1 year (instructions here; see pgs. 53-54). In the case of a second extension, the student's advisor must present the student's case at a faculty meeting and the faculty vote will need to be included in the exception to policy memo to the graduate school. Note that departmental extensions are done on a semester-by-semester basis and graduate school extensions are done one year at a time.

6.0 FELLOWSHIPS/AWARDS/TRAINEESHIPS

In general, students must be up-to-date on all of their paperwork and associated deadlines (e.g., programs of study, oral examinations, annual reviews, etc.) to be eligible for School of Biological Sciences fellowships and awards.

For some awards, students must also provide a detailed budget and justification for proposed expenses; for travel related expenses, students should provide evidence of searches for airfare costs exceeding $500 and lodging costs exceeding $150/ night through travel websites. Due to limited funds, *per diem* food costs are not allowed, and fuel costs can only be reimbursed at estimated gas costs (not the Federal rate).

6.1 FELLOWSHIPS/AWARDS/TRAINEESHIPS OPEN TO STUDENTS STUDYING PLANT BIOLOGY

Through generous contributions from former Plant Biology Faculty and their families, colleagues, students, and friends, several fellowships, awards, and traineeships have been established to support graduate training in Plant Biology. These funds provide excellent opportunities for graduate students' professional development. The Academic Coordinator will provide application materials (*6.1.1.A*) for those who are eligible prior to each call for proposals.

Fellowship applications for Elling and Betty Higinbotham awards are due twice a year – October 1 and March 1. Applications for all other fellowships are due March 1. Application materials are reviewed by the Graduate Student Advisory committee, which will prioritize award funding. Students who are late in turning in their annual reviews or other important paperwork such as programs of study will not be eligible for these awards until their delinquency is corrected. Students must articulate in detail their request for funds and provide detailed budgets when applicable. Specifically, budgets should include details of travel costs that are based on online searches (such as airfare and lodging); unreasonable costs will result in budgets being reduced by the GPC or proposals being denied altogether. In general, award requests should only cover the proceeding 6 to 12 months. The GPC will request a re-budget when award requests exceed a 12 month time frame.

Upon receipt of an award, students will have 12 months to spend the award or the Department will reclaim unused award funds. In addition, students who receive Elling or Betty Higinbotham awards should keep track of their

expenditures and balances so that overdrafts are avoided. The School will no longer cover overdrafts, which are the responsibility of the student and/ or the student's advisor to cover. The student may request a budget balance at any time from the Finance Office.

Details of eligibility and guidelines for each award follow.

6.1.1 Aase Fellowship in Plant Biology

Dr. Hannah Aase, PhD University of Chicago, 1914, was a member of the Plant Biology faculty at WSU for 35 years from 1914-1949 and was the first Emeritus Professor in the school. She began her career at WSU as she describes it as "instructor in anything whatsoever" which included teaching histology-anatomy and microtechnique. Being widely admired, she was described as a remarkable lady. In a seminar on May 17, 1949, she presented a colorful history of Plant Biology at WSU from the very beginning of the university in midwinter of 1892. She continued to read technical journals into her 90's. On the occasion of her 90th birthday one professor wrote, "You were always the eager 'student,' always sharp as a briar, but you had a way of living with your plants, in your garden and your laboratory, that gave you a peace of mind we all envied but were unable to emulate."

The Aase Fellowship, in honor of Professor Hannah Aase, is used primarily for recruitment of new graduate students. This fellowship provides at least $2000 ($1,000 a year for two academic years) in stipend support above and beyond that of a student's assistantship. Each spring, applicants for graduate study in Plant Biology are evaluated as potential recipients of Aase Fellowships. The fellowship may be used as a stipend or for any purpose the recipient wishes.

6.1.2 Orlin and Susann Biddulph Fellowship in Plant Biology

Dr. Orlin Biddulph, PhD, University of Chicago, 1934, was a member of the Plant Biology faculty at WSU for 36 years from 1937-1973. He was an internationally known plant physiologist who investigated absorption and translocation of mineral elements, and metabolite and mineral translocation in the phloem. He also established a Molecular Biophysics Laboratory with a unique biological spectrograph for the irradiation of whole plants with monochromatic radiation, and electron spin resonance and nuclear magnetic resonance spectrometers, and chaired a Biophysics Program. Dr. Susann Biddulph completed her PhD in Botany at WSU in 1944. It was here that they met and were married, working together as

research associates in the Department of Botany until retirement. The Biddulph Endowment was established by family, friends, and colleagues to honor both of their many achievements and contributions to the University community.

Awards are given on a competitive basis only to Plant Biology graduate students in the School of Biological Sciences who have shown exemplary progress in their graduate research. Availability of these awards depends on appropriate availability of funds. The awards are intended as recognition of that progress and as an aid to further research.

6.1.3 Brewer Fellowship in Plant Biology

Howard Brewer was an Emeritus Professor in Plant Biology at Washington State University. The Howard E. Brewer Memorial Endowment was established by his nephew, Don Brewer and several other family members to encourage and enhance the education experience of graduate students in the School of Biological Sciences who study plant biology. In additional to graduate fellowships, funds from this endowment are used to support the Howard Brewer Seminar Series in the School of Biological Sciences.

6.1.4 Hardman Native Plant Award in Plant Biology

The Hardman Foundation promotes conservation biology. Research that promotes conservation biology includes projects in systematic Plant Biology that contribute to understanding of evolutionary development or regional native plant variation within species or species complexes. Also important are studies of flowering plants considered rare, or that are depleted in range and need study, or require propagation for enrichment of their native range for use in botanical gardens or other suitable preserves. In addition, botanical investigations of geographical, climatological, edaphic and biotic factors that have led to adaptation are important subjects of conservation research.

Hardman Native Plant Awards were established through a gift from the Hardman Foundation to support Plant Biology graduate student research in the School of Biological Sciences. In developing the award, the Hardman Foundation recognizes the importance of all botanists who identify with and support conservation biology. Therefore, the award is not restricted to any particular botanical discipline. These awards, given on a competitive basis to Plant Biology graduate students in the School of Biological Sciences, are intended as an aid to

further the awardees' research. Availability of these awards depends on appropriate availability of funds.

6.1.5 Betty Higinbotham Trust Award in Plant Biology

Betty Higinbotham was the wife of Botany Department faculty member Noe Higinbotham. She was an accomplished botanist and shared her husband's interest in nature. She was a writer and editor for several national publications and a freelance writer for scientific journals and nature magazines. She graduated from Butler University, receiving a bachelor's degree in Plant Biology in 1932 and a Master's degree in 1935.

The Betty W. Higinbotham Trust was established to fund training and research opportunities for Plant Biology graduate students in the School of Biological Sciences. Although priority for awards is given to students wishing to study marine algae at the Friday Harbor Oceanographic Laboratory, applications can also be made for professional travel for graduate student development. The maximum accumulative award to any Plant Biology student during the course of their study normally will not exceed $5,000 for MS students and $10,000 for PhD students.

6.1.6 Noe Higinbotham Award in Plant Biology

Dr. Higinbotham was an internationally recognized plant physiologist as well as devoted teacher and mentor. He was a member of the Plant Biology faculty from 1948-1978, and during that time he pioneered investigations into the electrical properties of plant cells, receiving national and international honors for his research and writing. He earned an A.B. degree from Butler University in 1937 and a PhD from Columbia University in 1941.

The Noe Higinbotham endowment was established through generous contributions from Betty Higinbotham and friends, colleagues, and students of Professor Higinbotham to support graduate student research and training in Plant Biology. These scholarships are awarded on a competitive basis to all Plant Biology graduate students in the School of Biological Sciences. The awards are intended as recognition of that progress and as an aid to further research. Availability of these awards depends on appropriate availability of funds.

6.1.6 The Rexford Daubenmire Award in Plant Biology

Dr. Rexford Daubenmire, PhD University Minnesota, 1935, was a member of the Plant Biology faculty from 1946-1975. A fund was established beginning in the fall, 1994, in honor of Professor Daubenmire. Support from this fund will be used for graduate student training in Plant Biology when an endowment level is achieved. "Dauby", as he was universally known to generations of Plant Biology alumni, was an internationally renowned plant ecologist. During his highly productive career at WSU he supervised more than 35 PhD students and authored three widely used textbooks. His research interests spanned the field of plant ecology from drought and heat tolerance, symbiosis, fire ecology, ecotypic specialization, succession and soil deterioration in consequence of heavy grazing, and vegetation classification to ecologic plant geography. He was also a past president of the Ecological Society of America. Dauby has had a lasting influence on the world-wide stature and reputation of the Department of Plant Biology at WSU and set a high standard for scholarship and research that is continued in the School of Biological Sciences. Availability of these awards depends on appropriate availability of funds.

6.2 Fellowships/Awards/Traineeships Open to Biology students

6.2.1 The Brislawn Graduate Fellowship in Biology

The Brislawn Graduate Fellowship was established by the descendants of Guy and Mildred Brislawn to honor them and the many other members of the Brislawn family who have been associated with WSU for over 100 years. The award is given annually to recognize graduate students in Biology who exhibit high academic achievement and exceptional potential for becoming productive scientists and/or teachers. The candidate must be competitive with regards to GPA, publication and presentation history, and similar evidence of scholarship.

6.2.2 The James R. King Fellowship in Biology

The James R. King Fellowship is a research fellowship to be awarded competitively to an outstanding graduate student in Biology. This fellowship honors James King, a long-term member of Washington State University's faculty

who studied the physiological ecology of birds. The fellowship is intended to support scholarly research.

6.2.3 Charles W. and William C. McNeil Award in Biology

Charles Windslow McNeil was a longtime professor of Biology and a parasitologist at Washington State University. In 1946, Charles accepted a faculty position at WSU and began a long teaching and research career in Biology. Charles spent six months as a visiting scientist in the Department of Parasitology at the Alexandria University in Egypt in 1965-66. In 1964-65 and again in 1968-69, he served as acting chair of the Biology department.

Charles married Edna Wiesner in 1940. Their children are a son, Earle W. McNeil; a daughter Ellen E McNeil; eight grandchildren and six great-grandchildren. A son William C. McNeil, preceded Charles in death. His wife, Edna, established this fund in loving memory of her husband and late son, William.

William C. McNeil earned his Ph.D in history in 1968. He was a professor of history at Barnard College of Columbia University in New York until his death in 1993. He and his wife Victoria had two children Emily and Nathan.

6.2.4 Student Research Award in Biology

This award was established by a donation from the estate of Charles J. and June C. Campbell to fund student research in Zoology. Charles received his BS in Zoology from WSU in 1938. Although preference is given to undergraduates, SBS graduate students are also eligible for this award to support their research.

6.3 Fellowships/Awards/Traineeships Open to Students in Biology or Plant Biology Degree Programs

6.3.1. Carl H. Elling Endowment

The Carl H. Elling Endowment was established to provide off-campus training and research opportunities for Plant Biology and Biology graduate students in the School of Biological Sciences. Strong preference will be given to Biology students, and Plant Biology students are encouraged to apply for Betty Higinbotham awards (above). The maximum accumulative award to any graduate

student during the course of their study normally will not exceed $5,000 for MS students and $10,000 for PhD students.

6.3.2. Smoot Hill Graduate Student Research Fund

The Smoot Hill Graduate Student Research Fund was established by Dr. George Hudson, a member of the faculty, curator of the Connor Museum, and Supervisor of the Smoot Hill Preserve for Biological study. Awards are made for floristic and faunistic studies conducted at Smoot Hill. Grant recipients can receive up to two summer months of support at the rate of a half-time research assistant. Availability of these awards depends on appropriate availability of funds.

7.0 GRADUATE STUDENT REPRESENTATION

7.1 SCHOOL OF BIOLOGICAL SCIENCES REPRESENTATION

Graduate students hold several important representative positions within the school. One graduate representative serves as a liaison with the faculty and attend all faculty meetings, except those involving personnel matters. Each fall graduate students may elect this representative and notify the Director of their selection. The representative conveys graduate students' concerns or suggestions about the school to the faculty. In turn, the representative is responsible for conveying actions by the faculty to the students. The Director of the School of Biological Sciences will solicit graduate student representatives for these committees. In addition, all SBS students are eligible to join the Biology Graduate Student Association (BGSA), which is affiliated with the WSU Graduate and Professional Student Association (GPSA). The BGSA holds regular meetings and occasional events, including the annual graduate student research symposium, held each spring.

7.2 UNIVERSITY REPRESENTATION

All graduate students in the university who are currently enrolled in 10 or more hours are members of the GPSA. GPSA represents the concerns of graduate and professional students both within the university and nationally. The School of Biological Sciences has two representatives to the GPSA Senate (the governing body for GPSA) who are elected each fall. In addition, many of the important advisory committees within the university have voting positions for graduate students. Students are encouraged to become involved in positions of interest. For additional information please consult the GPSA website.

7.3 GRIEVANCES

If grievances arise, the student may discuss the problem with the thesis advisor, the Associate Director for Graduate Studies in the school, the Director of the School of Biological Sciences, or as a final resort, the WSU Ombudsman (Wilson-Short Hall, Room 2, telephone 509-335-1195). If such grievances are not resolved, they may be also brought to the graduate school following these guidelines.

APPENDICES

3.4.B

EVALUATION RUBRIC: ORAL PRELIMINARY EXAM

Candidate: _____

Committee Member: _____

Criterion*	Poor (1)	Fair (2)	Competent (3)	Good (4)	Excellent (5)
Demonstrates familiarity with and understanding of the primary literature relevant to the discipline					
Able to synthesize knowledge from courses and literature and apply this knowledge to research questions					
Demonstrates breadth of understanding of scientific principles outside of, but relevant to, their discipline of focus					
Applies principles and terminology of the discipline to a novel problem					
Communicates information in a clear and effective manner					

(*passing indicates an average score across the committee members of 3 or greater in at least 3 of the 5 categories)

Comments:

3.4C

EVALUATION RUBRIC: PROPOSAL DEFENSE

Candidate: _____

Committee Member: _____

Criterion*	Poor (1)	Fair (2)	Competent (3)	Good (4)	Excellent (5)
Understands and interprets scientific literature relevant to research topic					
Places their research in a broader scientific and sociological/cultural context					
Demonstrates ability to formulate hypotheses and develop experimental design					
Discusses appropriate analyses for relevant data types					
Defends research methodology and interpretation and considers alternative interpretations					
Interprets and presents preliminary research results in oral and written formats					

(*passing indicates an average score across the committee members of 3 or greater in at least 3 of the 5 categories)

Comments:

3.4 D

EVALUATION RUBRIC: THESIS OR DISSERTATION DEFENSE

Candidate: _____

Committee Member: _____

Criterion	Poor (1)	Fair (2)	Competent (3)	Good (4)	Excellent (5)
Understands and interprets scientific literature relevant to research topic					
Independently formulates cogent hypotheses, develops experimental design, and establishes and maintains experiments					
Collects relevant data and conducts appropriate analyses					
Defends research methodology and interpretation and considers alternative interpretations					
Interprets and presents research results in oral and written formats					
Demonstrates capacity to frame research in a broader context					

(*passing indicates an average score across the committee members of 3 or greater in at least 3 of the 5 categories)

Comments:

3.4.E
School of Biological Sciences

LEAD TA EVALUATION FORM

TA Name: Course:

5=excellent 4=good 3=average 2=fair 1=poor NA=Not Applicable

1 How well did the TA define and attain the overall objectives of the laboratory/discussion section?
2 Give your overall impression of the TA's organization and preparation for class.
3 What was the TA's level of knowledge for this course?
4 How effective were the TA's explanations and demonstrations (technology & voice)?
5 How well did the TA stimulate thought and interest in the subject?
6 What was the quality of the interaction of the TA with the students?
7 What is our overall evaluation of the TA?

Please provide additional comments below or on the back of this sheet.

4.3.A

Request for Plant Growth Space

Name:

Growth Chambers

Type of Chamber Needed - _____

Number of Chambers Needed - _____

Plant Material to be Grown - _____

Time Needed - _____

Conditions – Light Intensity - _____
Photoperiod - _____
Temperature - _____
Relative Humidity - _____

Greenhouse

Amount of Space Needed - _____
(can be room number of number of square feet of bench space)

Plant Material to be Grown - _____

Time Needed - _____

Conditions – Photoperiod - _____
Temperature - _____
Supplemental Lighting – Yes ___ No ___

Type of Potting Supplies – Standard Greenhouse Potting Soil - _____
Sand - _____
Other - _____
Size of Pots - _____

Additional Comments:

HOMETOWN NEWS RELEASE FORM
Washington State University News Service

PLEASE PRINT CLEARLY

_____ □ Male
(Date) □ Female

Full name – first M.I. Last

(Reason for story, such as, was awarded, was elected, etc. Please list general qualifications for scholarship or award as well as name and amount of the scholarship.) _____
_____
_____
_____
_____

_____
Hometown

Field(s) of study at WSU Class Expected WSU graduation date

High School attended and TOWN Yr Grad HS Other degrees from which colleges

---

Mother's full name, address, city and state, zip code

Father's full name, address, city and state, zip code

_____ _____
Pullman local address Pullman local phone

List additional activities, honors or awards while attending WSU and additional information you think might add to the story. Use the other side if necessary.

_____ RETURN TO
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PO Box 643520
_____ Pullman, WA 99164-3520
Weekly Newspapers & TOWNS 509 335-5548
Fax: 509 335-3295

I authorize WSU to release any of the above listed information to the media or to organizers for graduation and awards programs.

_____ _____
Signature Date