



IPB

**INTERDEPARTMENTAL PLANT
BIOLOGY MAJOR**



GRADUATE STUDENT HANDBOOK

2022-2023
Iowa State University

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<http://www.ipb.iastate.edu/>..... ipb@iastate.edu

Introduction

The Interdepartmental Plant Biology (IPB) Major

Iowa State University (ISU) is a land-grant institution of international stature. Its location in an important agricultural region has fostered the development of strength in the agricultural and life sciences. Graduate education has always been an important component of the University's overall mission. Basic plant biology (Physiology, Biochemistry and Genetics) and applied plant science (Agronomy, Horticulture, Natural Resource Ecology and Management, and Plant Pathology) represent fully accredited, strong, traditional graduate program offerings in agriculture and the life sciences.

In accord with ISU's mission in graduate education, the Interdepartmental Plant Biology (IPB), previously Interdepartmental Plant Physiology Major (IPPM), was established in 1987 to provide a broad-based graduate education in basic plant physiology and plant molecular biology. Currently, there are more than 35 faculty members from the College of Agriculture & Life Sciences, College of Engineering, and the College of Liberal Arts and Sciences cooperate to provide graduate study in IPB leading to the Master of Science and Doctor of Philosophy Degrees offered through nine participating departments: Agronomy, Biochemistry, Biophysics & Molecular Biology (BBMB), Chemical & Biological Engineering (CBE), Chemistry, Ecology, Evolution & Organismal Biology (EEOB), Genetics, Development and Cell Biology (GDCB), Horticulture, and Plant Pathology, Entomology and Microbiology (PPEM).

Research conducted by the faculty and students of the IPB major represents basic plant biology, including but not limited to plant molecular biology, plant cell biology, plant biochemistry, plant physiology, plant organismal biology, plant genetics and genomics, plant evolution, plant pathology, and plant systems biology. The experimental approaches represented in the major span the range of complexity from molecular studies, to cellular, organismal and ecological levels, including crop monocultures and natural populations. Although IPB graduate students are themselves involved in basic plant biology research, the research focus of the faculty in the major includes both basic and applied approaches. This mix of basic and practical research foci helps foster a stimulating environment for graduate training.

The Interdepartmental Plant Biology major reflects the broad spectrum of plant science-related research programs ongoing among the faculty members affiliated with the major. In addition, IPB is always looking for the new ways to attract more graduate applicants to the program.

Administration

The IPB Supervisory Committee and its Chair administer the Interdepartmental Plant Biology program. For the current academic year, the Chair and Supervisory Committee are:

<i>Chair:</i>	Olga Zabolina , 3212 Molecular Biology 515-294-6125, Email: zabolina@iastate.edu
<i>Co-Chair:</i>	Marna Yandea-Nelson , 2210 Molecular Biology 515-294-1079, Email: myn@iastate.edu
<i>Supervisory Committee:</i>	Gustavo MacIntosh, BBMB (Chair) Olga Zabolina, BBMB Marna Yandea-Nelson, GDCB Madan Bhattacharyya, Agron Steve Whitham, Plant Path & Micro Diane Bassham, GDCB
<i>Admissions Committee:</i>	Dior Kelley (Chair) , GDCB Olga Zabolina, BBMB Aung Kyaw, GDCB Marna Yandea-Nelson, GDCB Hongqing Guo (Michelle), GDCB
<i>Faculty Credential Committee:</i>	Steve Rodermeil , GDCB
<i>Curriculum Committee:</i>	Madan Bhattacharyya (Chair) , Agron Diane Bassham, GDCB Reuben Peters, BBMB Guo Hongqing (Michelle), GDCB
<i>Program Coordinator:</i>	Dai Nguyen, PPEM , 207 Science I 515-294-9052 (dna112@iastate.edu)

Plant Biology Graduate Program Learning Objectives

Students completing a graduate degree in our program are expected to meet the following learning objectives:

1. Demonstrate comprehensive understanding of scholarly literature in the area of plant molecular and cellular biology.

Measurable Outcomes:

- 1a. Preparation of a research proposal
- 1b. Successful completion of Preliminary Examination
- 1c. Successful defense of the Final Thesis

2. Form testable hypotheses and articulate research objectives that, when met, will lead to significant contributions to the field of plant biology.

Measurable Outcomes:

- 2a. Preparation of a research proposal
- 2b. Successful defense of the Final Thesis
- 2c. Publication of research results in peer-reviewed journal

3. Conduct rigorous research via appropriate acquisition, analysis, and reporting of data, and demonstrate creativity and independence.

Measurable Outcomes:

- 3a. Completion of Thesis Research Project
- 3b. Publication of research results in peer-reviewed journal

4. Clearly and accurately communicate research findings orally and in writing.

Measurable Outcomes:

- 4a. Oral and poster presentations at local, regional, and national conferences
- 4b. Publication of research results in peer-reviewed journal
- 4c. Participation in outreach activities

5. Conduct scholarship in ways that consistently demonstrate ethical practice and professionalism.

6. Demonstrate ability to properly design and statistically analyze experiments.

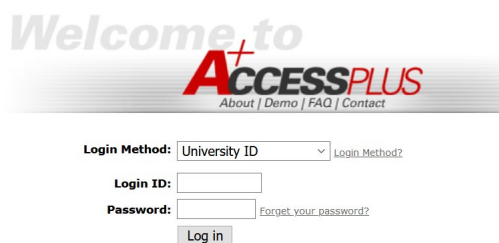
Upon Arrival at ISU

When you first arrive, you may find yourself overwhelmed by the number of things you must do. Here is a list of some of the most important tasks to address right away.

1. Visit the Interdepartmental Plant Biology Program Office in 207 Science I and introduce yourself to Dai Nguyen, the Program Coordinator. Dai can help you find your way around the University administrative offices.
2. Visit with the Chair, Dr. Olga Zabolina. She will be able to answer any questions you may have about the program and setting up your rotations.
3. **Read this HANDBOOK.** It is especially important to read the section on Administrative Matters during your first few days.
4. Obtain your [ISU card](#). Each student is required to have an ISU identification card to access university services. Cards are issued between 8 AM and 5 PM Monday through Friday at the ISU Card Office, room 0530 Beardshear Hall. Note that a state or federal issued ID and your social security number (university ID number for international students) are required.
5. Register for your [ISU Network ID](#) or **Net-ID**. Your Net-ID allows you to send and receive email in Cy-Mail (ISU Email), access campus computers and services, log in to protected networks at ISU and more. To register for a Net-ID: <https://asw.iastate.edu/cgi-bin/acropolis/register>, you will need to enter your ISU card number and security code.

Note that e-mail is the most common means of communication at Iowa State University.

6. Obtain [AccessPlus\(A+\)](#): <https://www.registrar.iastate.edu/resources/accessplus-information>



AccessPlus allows you to check your university bill (Ubill), class registration, class schedule, current student info, enrollment certification, grades report, and much more, including your tax info (1098T).

7. Obtain the following references and examine them carefully. These documents contain all the University regulations and requirements for graduation.

[**Graduate College Handbook**](#)

[**Graduate College Thesis Manual**](#)

They are available on the Web through the ISU [**Graduate College Homepage**](#) at:

<https://www.grad-college.iastate.edu/>

http://www.grad-college.iastate.edu/current/thesis/organizing_thesis/

Iowa State **Graduate College forms** are available at:

<https://www.grad-college.iastate.edu/student/forms/>

Other references you may find helpful:

Schedule of Classes: <http://classes.iastate.edu/>

ISU bookstore: <https://www.isubookstore.com/>

Phone/e-mail directory: <http://info.iastate.edu/>.

Iowa State University Homepage: <http://www.iastate.edu>. Note the alphabet at the top of this page; you can click through to many subject headings.

ISU University-wide **POLICY LIBRARY**:
<http://policy.iastate.edu/>

The First Year

Orientation and Advising

All prospective IPB students are evaluated by the Admissions Committee composed of five faculty members in the Interdepartmental Plant Biology Program. The criteria for evaluation of applicants include academic record, TOEFL scores (for international applicants), research experience, letters of reference, Statement of Interest from the applicants, and, when possible, personal interview. Students may either:

1. Enter the IPB program directly, as an IPB Graduate Assistant to conduct three rotations, and then choose a mentor and a home department by the end of their first year, or
2. Enter one of the participating departments immediately, with departmental support or support from a mentor, with Plant Biology as the declared major.

In either case, students must be accepted both by IPB and by a department, and degrees are awarded by the department, with a major in Plant Biology.

Rotations

Students who directly enter the IPB program are asked to complete a series of research rotations with faculty members of their choice. It is suggested that students complete at least three rotations during the first two semesters. The rotations are approximately six to eight weeks in length. These rotations are designed to familiarize the student with the type of research done in

each lab, as well as to acquaint themselves with the professor, other members of the lab and the team culture. The student is responsible for contacting professors for scheduling potential rotations. It is important to choose laboratories conducting research that interests you, can arrange for financial support and that will be able to accept you into the lab if you choose to stay. The program will provide a list of faculty members who are accepting rotations at the time. You are welcome to contact others who are not on that list as well.

There are over 35 faculty members in IPB representing 9 departments (Agronomy, Biochemistry, Biophysics & Molecular Biology, Chemical & Biological Engineering, Chemistry, Ecology, Evolution and Organismal Biology, Genetics Development & Cell Biology, Horticulture, Plant Pathology and Microbiology and USDA). For detailed information about the faculty visit the IPB web page (<http://www.ipb.iastate.edu/>).

Selecting a Major Professor

Following the completion of your research rotations, you should ask the faculty member with whom you would like to work whether they can accept you into their laboratory and arrange for your future financial support. Once an agreement is made, you must fill out the form **“Home Department for Students Admitted to Interdepartmental Majors”**. This form can be found at <https://www.grad-college.iastate.edu/student/forms/>.

This commitment must be made no later than the first week of May. In the case that no suitable match is attained after three rotations, you may conduct an optional 4th rotation. At the same time, please contact your Temporary Faculty Mentor and/or IPB Program Chair for advice.

Curriculum

Entering graduate students are expected to have a strong academic background in the physical and life sciences (i.e. calculus, physics, genetics, organic chemistry, plant anatomy, plant physiology), and significant laboratory research experience is desirable. Outstanding students with a deficiency in one academic area often are admitted with the understanding that the deficiency will be promptly corrected via taking appropriate coursework in that area. Well-prepared students, especially those who already have a Master's degree, usually have some IPB course requirements (see below) waived because of previous equivalent course credit. The quantity and type of previous course work greatly affects the sequence in which required courses are taken, but usually the general biochemistry and statistics courses are expected to be taken as early as possible and the advanced plant biology and molecular biology courses can be taken later.

In addition to the required core courses, a wide selection of courses is available to IPB graduate students for focus in specific areas or broadening of their scientific education. Decisions about which courses are taken and when they are taken are made by the student, initially in consultation with his or her temporary advisor, and later in consultation with his or her Program of Study (POS) Committee, which also serves as the Thesis or Dissertation Committee. Any changes in the selection of required core courses must be recommended by the POS committee and approved by the Chair.

A. Course Requirements

Students can register for courses on-line using [AccessPlus](#). If you are unable to register on-line, please let Dai know and she can help you.

Students should sign up for a total of 9 to 12 credits each fall and spring and a minimum of 1 credit for summer session. Students should discuss with their major professor before enrolling for summer courses beyond the 1 research credit.

Curriculum for Plant Biology Ph.D. Students

All Ph.D. candidates take a core curriculum comprising of courses recommended from four categories (listed below), enroll in and attend research seminars ([PLBIO 696](#)), take research credits ([PLBIO 699](#)), and attend the annual Loomis Lecture and IPB mini-symposium and retreats. Students will take additional courses of interest as directed by their Program of Study (POS) Committee members.

A total of **72** credits, which includes a minimum of **24 course** credits and at least a B grade or higher, are required for a Ph.D. degree in Plant Biology. Students must complete all core courses and one optional core course, for a total of 18-23 core credits.

1. **Basic Core Courses.** Complete the following core courses:

- [*Stat 587](#) (Statistical Methods for Research Workers), Cr. 4. F., S., SS.
- [*\(i\) BBMB 316](#) (Principles of Biochemistry) (3-0) Cr. 3. F. S. or [*\(ii\) BBMB 404](#) (Biochemistry I), Cr. 3. F., S., SS., and [BBMB 405](#) (Biochemistry II), Cr. 3. F., S., SS.
- [GDCB 513](#) (Plant Metabolism), Cr. 2. Alt. F. (even years)
- [GDCB 545](#) (Plant Molecular, Cell & Developmental Biology), Cr. 3. Alt. F (uneven years)
- [GR ST 565](#) (Responsible Conduct of Research in Science and Engineering) Cr. 1.0. F. S.
- Make **four** seminar presentations and enroll each term in the Interdepartmental Plant Biology seminar [PLBIO 696](#). The first seminar must be during the student's first year and is a 20 minute seminar. The last presentation must be an exit seminar. Up to five seminars are counted for Ph.D. (5 credits.)

[*Stat 587](#) and [BBMB 316/404/405](#) can be waived if similar courses were taken elsewhere.

2. **Optional Core Courses.** Take **one** course from the following:

- [GDCB 510](#) (Transmission Genetics), Cr. 3. S.
- [GDCB 511](#) (Advanced Molecular Genetics), Cr. 3. S.
- [EEOB 551](#) (Plant Evolution & Phylogeny), Cr. 4. F.
- [EEOB 566](#) (Molecular Evolution), Cr. 3. Alt. F.

3. **Optional Courses.**

- [Agron 516](#) (Crop Physiology), Cr. 3. S.
- [Agron 538](#) (Seed Physiology and the Environment), Cr. 2. Alt F.
- [Agron 625](#) (Genetic Strategies in Plant Breeding), Cr. 3. Alt. S.
- [BBMB 645](#) (Molecular Signaling), Cr. 2. Alt. S.
- [BBMB 675](#) (Nucleic Acid Structure and Function), Cr. 2. Alt. F.
- [BBMB 676](#) (Biochemistry of Gene Expression in Eukaryotes), Cr. 2. Alt. S.
- [BCB 544](#) (Fundamentals of Bioinformatics), Cr. 4. Alt. F.
- [BIOL 454](#) (Plant Anatomy), Cr. 4. F.
- [BIOL 474](#) (Plant Ecology), Cr. 3. S.
- [EEOB 551](#) (Plant Evolution & Phylogeny), Cr. 4, Alt. F. (even years)
- [EEOB 561](#) (Evolutionary and Ecological Genomics), Cr. 3., Alt S. (even years)
- [EEOB 563](#) (Molecular Phylogenetics), Cr. 3. S.
- [EEOB 566](#) (Molecular Evolution), Cr. 3. Alt F. (even years)
- [EEOB 553](#) (Agrostology), Cr. 3. Alt. F. (even years)
- [GDCB 510](#) (Transmission Genetics), Cr. 3. F.
- [GDCB 511](#) (Advanced Molecular Genetics), Cr. 3. S.
- [GDCB 528](#) (Advances in Molecular Cell Biology), Cr. 3. Alt. F. (even years)
- [Stat 581](#) (Analysis of Gene Expression Data for the Biological Sciences), Cr. 3. S.

In addition to the required core courses, a wide selection of courses is available to IPB graduate students for broadening their scientific education, and increasing knowledge in topics related to their research. Decisions about which courses to take and when they are to be taken are made by the student, initially in consultation with their temporary advisor, and then with their major advisor and eventually with their POS Committee, which also serves as the Thesis or Dissertation Committee.

Please refer to the Schedule of Classes [online website](#) for Course availability.

Curriculum for Plant Biology M.S. Students

All M.S. candidates take a core curriculum comprising courses recommended from the following four categories, attend research seminars ([PLBIO 696](#)), take research credits ([PLBIO 699](#)), and attend the annual Loomis Lecture and mini-symposium and retreats. Students will take additional courses of interest as directed by their Program of Study (POS) Committee members.

A total of **36** credits, which includes a minimum of **16** core course credits and at least a B grade or better, are required for a M.S.

1. **Basic Core Courses.** Complete the following core courses:

- *[Stat 587](#) (Statistical Methods for Research Workers), Cr. 4. F., S., SS.
- *(i) [BBMB 316](#) (Principles of Biochemistry) (3-0) Cr. 3. F. S. or *(ii) [BBMB 404](#) (Biochemistry I), Cr. 3. F., S., SS., and [BBMB 405](#) (Biochemistry II), Cr. 3 F., S., SS.
- [GDCB 513](#) (Plant Metabolism), Cr. 2. Alt. F. (even years)
- [GDCB 545](#) (Plant Molecular, Cell & Developmental Biology), Cr. 3. Alt. F. (uneven years)
- [GR ST 565](#) (Professional Practice in the Life Sciences) Cr. 1. F. S.

- Make **two** seminar presentations and enroll each term in the Interdepartmental Plant Biology seminar [PLBIO 696](#). The first seminar must be during the student's first year and is a 20 minutes seminar. The last presentation must be an exit seminar. Two seminars are counted for M.S. (2 Crs.)

*[Stat 587](#) and [BBMB 316/404/405](#) can be waived if similar courses were taken elsewhere.

2. **Optional Courses.**

- [Agron 516](#) (Crop Physiology), Cr. 3. S.
- [Agron 538](#) (Seed Physiology), Cr. 2. Alt F. (even years)
- [Agron 625](#) (Genetic Strategies in Plant Breeding), Cr. 3. Alt. S. (uneven years)
- [BBMB 675](#) (Nucleic Acid Structure and Function), Cr. 2. Alt. F. (even years)
- [BCB 544](#) (Fundamentals of Bioinformatics), Cr. 4. Alt. F. (uneven years)
- [BIOL 454](#) (Plant Anatomy), Cr. 4. F.
- [BIOL 474](#) (Plant Ecology), Cr. 3. S.
- [EEOB 551](#) (Plant Evolution & Phylogeny), Cr. 4, Alt. F. (even years)
- [EEOB 561](#) (Plant Diversity and Evolution), Cr. 4., Alt. S. (even years)
- [EEOB 563](#) (Molecular Phylogenetics), Cr. 3. S.
- [EEOB 566](#) (Molecular Evolution), Cr. 3. Alt F. (even years)
- [EEOB 553](#) (Agrostology), Cr. 3. Alt. F. (even years)
- [GDCB 510](#) (Transmission Genetics), Cr. 3. F.
- [GDCB 511](#) (Advanced Molecular Genetics), Cr. 3. S.
- [GDCB 528](#) (Cellular Growth and Regulation), Cr. 3. Alt. F. (even years)
- [Stat 581](#) (Statistical Design and Analysis of Microarray Experiments), Cr. 3. S.

In addition to the required core courses, a wide selection of courses is available to IPB graduate students for broadening their scientific education, and increasing knowledge in topics related to their research. Decisions about which courses are taken and when they are taken are made by the student, initially in consultation with their temporary advisor, and then with their major advisor and eventually with POS Committee, which also serves as the Thesis or Dissertation Committee.

Please refer to the Schedule of Classes [online website](#) for Course availability.

Curriculum for students who declare a Plant Biology Minor

Ph.D. and M.S. candidates in other programs who desire a graduate minor in Plant Biology must take the below required courses listed below, achieving a grade of B or better. One member of the student's POS committee must have IPB faculty membership.

1. Prerequisite Courses:

- Stat 587 (Statistical Methods for Research Workers), Cr. 4. F., S., SS.
- BBMB 404 (Biochemistry I), Cr. 3. F., S

2. Take nine credits from the following list of courses:

- Agron 516 (Crop Physiology), Cr. 3. S.

- BIOL 454 (Plant Anatomy), Cr. 4. F.
- GDCB 513 (Plant Metabolism), Cr. 2. F.
- GDCB 545 (Plant Molecular Biology), Cr. 3. F.

B. Seminar Requirements

The IPB Seminar (PLBIO 696, one credit) is a student-run seminar course designed to give students exposure to others' research and also to provide an opportunity for students to present their own research to their peers. Enrollment in and attendance at this seminar series is required of all IPB students. The Fall semester curriculum includes workshops and lectures presented by Iowa State faculty and research scientists, and are given based on varying topics chosen by IPB students. The Spring semester curriculum consists of research seminars given by students enrolled in the course. Students must present their research according to the following guidelines:

- **Ph.D.**

Enroll each semester in PLBIO 696. PhD students must present a research seminar in four separate semesters. The first seminar must be during the student's first year and is a 20 minute seminar. The last presentation must be an "exit seminar" at the conclusion of the student's Ph.D. work.

- **Master's**

Enroll each semester in PLBIO 696. Master's students present a research seminar in two separate semesters. The first seminar must be during the student's first year and is a 20 minute seminar. The last presentation must be an "exit seminar" at the conclusion of the student's Ph.D. work.

C. Other Required Activities

In addition to coursework, there are a number of non-course activities in which IPB students are required to participate. These activities are meant to expose students to research outside of their interests and provide an opportunity for interaction with other scientists. These include:

- **Fall Retreat**

The Annual IPB Fall Retreat is a one-day event held in the early Fall and is devoted to short research presentations by IPB faculty, introduction of new graduate students, and informal discussion. This retreat is designed to introduce new IPB graduate students to the members of the program and expose new students to the research opportunities available in the laboratories of IPB faculty. Moreover, the retreat enables professional interaction among the faculty and graduate students of IPB.

- **Loomis Lecture and Mini-symposium**

The annual Walter E. Loomis Lecture, funded by an endowment established by the Loomis family, has brought outstanding scientists to the campus since 1981. These lectures are of interest to a broad range of plant biology students and faculty. A one-day mini-symposium, with the Loomis Lecture as its focus, has been implemented annually since 1995. Such symposia expose graduate students to outstanding scientists from other institutions in an interactive setting where

emerging interdisciplinary approaches to basic plant biology are presented and discussed. The organization of the mini-symposium is led by IPB graduate students, under the mentorship of one or more faculty who share interest and experience in the selected theme for the symposium.

- **Graduate Organization of Plant Biology**

All IPB graduate students and some non-IPB graduate students are members of the Plant Biology Graduate Student Organization (IPB GSO), which invites and hosts at least one prominent off-campus seminar speaker each year and acts to organize social events, as well as providing some cohesiveness to an otherwise rather diverse group of graduate students. Our student organization has strong leadership and has been very active in leading the fall seminar series for PLBIO 696 and organizing and participating in the Spring Loomis Mini-Symposium.

D. Dismissal

Students in good standing will have a major professor (after the first year), maintain a grade point average above 3.0, and be making satisfactory progress in their research and IPB requirements. Students not in good standing will be notified by the Chair and counseled about program expectations. After the first year, students who have not been able to find a major professor and students who no longer have a major professor will be clearly informed that they cannot remain an IPB student for more than one additional term. The program will assist such students to transfer to another major at ISU or to identify other opportunities. Grievances will be handled according to standard University procedures that can be found in Graduate College Handbook, Chapter 9 (<https://www.grad-college.iastate.edu/handbook/chapter.php?id=9>).

Degree Requirements

A checklist of requirements for both Ph.D. and M.S. degrees can be found in this Handbook (page 17 and 18).

A. Committee Appointment and Program of Study

During the first or second year of the graduate program, you will, in consultation with your major professor, decide on a suitable program for completion of your graduate course work. It is then necessary to establish a Program of Study Committee (POSC).

For a M.S. degree, the POS Committee must include a minimum of three members, of whom two, including the major and co-major professor (if applicable), must be IPB faculty members. For a Ph.D. degree, the POS Committee must include a minimum of five members, of whom three, including the major and co-major professor (if applicable), must be IPB faculty members.

The Program of Study and Committee appointment form should be completed via AccessPlus no later than the end of the second academic year of graduate study.

The POS Committee should include faculty whose research interests and expertise can aid and complement your research interests, as well as faculty whose expertise will ensure that you graduate with a breadth of knowledge. We encourage each student to propose a list of potential

committee members to the major professor to discuss. It is your responsibility to then contact faculty members and ask them if they are willing to participate as members of the POS Committee. Once the required numbers of faculty have agreed to serve on your committee, you should next set up a time to meet with your committee, inform them of your research plans, and ask for their evaluation of your plans. This is also the time to complete and submit the Program of Study and Committee (POSC) online form, which is done through [AccessPlus](#). The POSC form is very important because it is essentially a contract between you and the graduate school indicating the minimum course work that must be taken to complete a Ph.D. or M.S.

Following Graduate College approval, changes to the POSC form can only be approved by unanimous support by the student, the POS committee, the IPB chair, and the Graduate College.

B. Preliminary Examination (Ph.D. Students Only)

The comprehensive preliminary examination normally is taken upon completion of the second year of the graduate program, at least one semester after the POSC has been approved. Most doctoral students are expected to finish their formal course work within their first two years, and to complete any preliminary exams by the end of their second year. A substantial part of their first year may be spent in research rotations, so there is considerable latitude given in these general guidelines.

The administration of proficiency, qualifying, comprehensive and/or other examination requirements for IPB graduate students is at the discretion of the home department for each student. However, regardless of home department, the preliminary exam includes both a written and an oral component. The written component may be in the form of either a series of questions or a research proposal. This decision is made by the POS committee but must meet specified requirements of the home department.

Before taking the preliminary examination, you must first have your POSC approved a semester prior to your scheduled preliminary exam. The “Request for Preliminary Examination” form is now completed online, and the link is available through the Graduate College webpage at <https://www.grad-college.iastate.edu/student/forms/>. The Request form must be submitted and approved by the Graduate College three months prior to your scheduled exam date. Students are encouraged to follow the Preliminary Oral Exam Checklist, available on the Student Forms page (<https://www.grad-college.iastate.edu/student/forms/>), under the Preliminary Oral Examination Request Forms section.

After processing your request, the Graduate College will send instructions for online reporting of the results of the Preliminary Examination form to your major professor. The major professor is to complete this online form directly after the preliminary examination and a letter of receipt will be sent from the Graduate College to all Committee Members. All committee members must be present at this examination. This examination should be completed by the end of the first semester of the third year of graduate training.

C. Application for Graduation

Once it has been determined that you are ready to complete your degree, an application for graduation should be made by the end of the first week of the semester (fall, spring or summer) in which the student expects to receive the degree, or by the last day of the spring semester when

wishing to graduate during summer session. To apply for graduation, the student is required to complete the Application for Graduation on AccessPlus, following Graduate College instructions (<https://www.grad-college.iastate.edu/student/forms/graduation-application/>). If it becomes apparent that you cannot graduate during the indicated term, return to AccessPlus and withdraw the application for graduation following the instructions in the link above. The student must then file a new application for the next planned term of graduation.

D. Writing and Submitting Your Thesis/Dissertation

All ISU theses are submitted as digital files. Prior to preparing the thesis or dissertation, students should review all Graduate College guidelines and deadlines posted on the Theses and Dissertations page (<https://www.grad-college.iastate.edu/thesis/>). Students are encouraged to use the Master's and PhD Planning Tools, attend Graduate College-led seminars and bootcamps related to thesis and dissertation preparation, and/or engage with a Thesis/Dissertation Writing Consultant (<https://cce.grad-college.iastate.edu/writing/writing-consultations/thesis-and-dissertation-writing-consultants>). Thesis dissertation templates are provided by the Graduate College (https://cce.grad-college.iastate.edu/writing/thesis_dissertation/formatting-tools-and-resources/formatting-templates).

A draft of the thesis/dissertation is to be submitted to the POS committee two weeks prior to the Final Examination. Committee members may provide comments and feedback, that the student can apply prior to finalizing the document. All graduate theses and dissertations submitted to Iowa State University must comply with the requirements established by the Graduate College, as stated in the current [Thesis Checklist](#).

The thesis/dissertation is submitted electronically via ProQuest. During the semester of graduation, the student must open an account at ProQuest (<https://www.etdadmin.com/main/home?siteId=23>). Thorough instructions for submitting the dissertation via ProQuest are provided here: <https://www.grad-college.iastate.edu/thesis/submit/>

The Graduate College reviews the final thesis or dissertation in ProQuest and approves the final format before signing the final Approval Slip. Their staff are available to advise students on formatting problems they may encounter.

E. Final Examination

The Final Examination for the Ph.D. and the M.S. degrees is an oral defense of the Ph.D. dissertation or M.S. thesis, respectively. All members of your POS committee must be present. This examination will review the dissertation or thesis and the candidate's knowledge of relevant subjects.

After the dissertation or thesis has been completed and all other requirements have been met (including submitting an application for graduation form), you should request to schedule your Final Examination with your POS committee.

A “**Request for Final Oral Examination**” needs to be completed online **THREE WEEKS prior to the date of the Final examination**. The request link is available at the Graduate College Student Forms website <https://www.grad-college.iastate.edu/student/forms/>. After processing your

request, the Graduate College will send instructions for online reporting of the results of the Final Examination to your major professor.

Your dissertation or thesis has to be submitted to all the POS committee members **TWO WEEKS before your scheduled final examination date**. Students must communicate early with the POS committee if this deadline cannot be met and all committee members must agree to accept the draft thesis/dissertation by a specific date prior to the defense.

The results of the examination are reported by the major professor via an online process directly after the final examination and a letter of receipt will be sent from the Graduate College to all Committee Members.

After the final oral examination, you must upload your final dissertation/thesis to Proquest no later than the Final Submission deadlines for the term of graduation.

F. Graduate Student Approval Form for Graduation

After the thesis defense and the finalization of the dissertation/thesis document that incorporates edits and suggestions from the POS committee, the finalized dissertation/thesis must be approved by your major professor(s) and the IPB Chair (Director of Graduate Education) using the online Graduate Student Approval form. The online Graduate Student Approval Form can be found here (<https://secure.grad-college.iastate.edu/graduate-approval/exam/>). Upon approval by the IPB program chair and the major professors, the Graduate College thesis specialist, and the Graduate College will then review the dissertation/thesis. Final clearance of academic requirements will be made when current term grades have been submitted and evaluated by the Graduate College. Consult the Graduate College Handbook for more details on requirements for this form.

All other requirements and information regarding graduation can be found in the Graduate College Handbook.

Checklists

Procedures for Earning a Doctoral Degree (IPB)

REQUIREMENT	TO BE COMPLETED BY	DATE COMPLETED
Pass the Graduate English Examination (for non-English native)	Before or during first week of classes	
Perform Research Rotations (if necessary)	Contact faculty in advance	
Choose a Major Professor	~Mid-April of first year.	
Complete “ Request to Establish a Home Department for Students Admitted to Interdepartmental Major ” form (https://secure.grad-college.iastate.edu/home-department/)	~1 st spring semester if admitted in the fall.	
Conduct research and report research progress annually	Report due to IPB by the end of January	
Complete “ Program of Study Committee (POSC) ” form, route through AccessPlus, and submit to Graduate College for approval	End of the third semester	
Yearly POSC meeting	Each year	
Meet all coursework and other requirements and establish date and time for Preliminary Examination	End of second year	
Submit “ Request for Preliminary Oral Examination ” form to Graduate College at least 2 weeks prior to examination date (https://secure.grad-college.iastate.edu/exam/)	~In the third year, but must be 3 calendar months after POSC has been approved.	
Successfully pass Preliminary Examination ; Major professor submits online report form to Graduate College	End of third year.	
Complete research and write Dissertation	~4 to 6 years	
File “ Application for Graduation ” (Diploma slip) with Graduate College for intended term of graduation (https://www.grad-college.iastate.edu/student/forms/graduation-application/)	Early during the term intended for graduation	
Establish date and time for Final Oral Examination with POS committee	~in the fifth year or last semester	
Submit “ Request for Final Oral Examination ” form to Graduate College (https://secure.grad-college.iastate.edu/exam/)	3 weeks before examination date	
Make appointment with the Center for Communication Excellence at the Graduate College for preliminary format check	optional, but strongly encouraged	

Give dissertation to POS committee	2 weeks before final examination date
Arrange and present an exit research semester to IPB students	Same semester as the final oral examination
Open ProQuest account for electronic submission of dissertation (https://www.etsadmin.com/main/home) by Grad College deadline; Include title of dissertation for inclusion in Commencement Program	~Semester of graduation and by the Grad College deadline (this can be done before or after the defense)
Successfully pass final oral examination ; Major professor submits online report form to Graduate College	Immediately after oral examination
Receive Graduate Student Approval Slip for Graduation from major professor or program https://secure.grad-college.iastate.edu/graduate-approval/exam/	After passing Final Oral examination
Upload and submit final copy of Dissertation to ProQuest (https://www.etsadmin.com/main/home)	~Semester of graduation and by the Grad College deadline
Attend commencement ceremonies	Optional

To help in organizing your accomplishments, at least annually record the following information:

Publications – list full citation:

Conferences attended – list and state oral or poster presentation title, authors, and date of conference:

Honors or awards (including granting organization):

Procedures for Earning a Master's Degree (IPB)

REQUIREMENT	TO BE COMPLETED BY	DATE COMPLETED
Pass the Graduate English Examination (for non-English native)	Before or during first week of classes	
Perform Research Rotations (if necessary)	Contact faculty in advance	
Choose a Major Professor	~Mid-April of first year students entered in the fall	
Complete “ Request to Establish a Home Department for Students Admitted to Interdepartmental Major ” form (https://secure.grad-college.iastate.edu/home-department/)	~By the end of the second semester (first year students).	
Conduct research and report research progress annually	Report due to IPB by the end of January	
Complete “ Program of Study (POS) ” form, route through AccessPlus, and submit to Graduate College for approval	To file POSC via AccessPlus after first year.	
Meet all coursework and other requirements	~second year	
Complete research and write Thesis	End of second year or shortly after.	
File “ Application for Graduation ” (Diploma slip) with Graduate College for intended term of graduation (https://www.grad-college.iastate.edu/student/forms/graduation-application/)	To file the term of graduation	
Establish date and time for Final Oral Examination with POS committee	~in the 2 nd year or last semester	
Submit “ Request for Final Oral Examination ” form to Graduate College (https://secure.grad-college.iastate.edu/exam/)	3 weeks before examination date	
Make appointment with the Center for Communication Excellence at the Graduate College for preliminary format check	optional, but strongly encouraged	
Give Thesis to POS committee	2 weeks before final examination date	
Arrange and present an exit research semester to IPB students	Same semester as the final oral examination	
Open ProQuest account for electronic submission of thesis (https://www.etdadmin.com/main/home) by Grad College deadline; Include title of thesis for inclusion in Commencement Program	~Semester of graduation and by the Grad College deadline (this can be done before or after the defense)	

Successfully pass final oral examination ; Major professor submits online report form to Graduate College	Recommended in the last term of the second year or shortly after.
Receive Graduate Student Approval Slip for Graduation from major professor or program (https://secure.grad-college.iastate.edu/graduate-approval/exam/)	After passing Final Oral.
Upload and submit final copy of Thesis to ProQuest (https://www.etdadmin.com/main/home)	~Semester of graduation and by the Grad College deadline
Attend commencement ceremonies	Optional

To help in organizing your accomplishments, at least annually record the following information:

Publications – list full citation:

Conferences attended – list and state oral or poster presentation title, authors, and date of conference:

Honors or awards (including granting organization):

Financial Matters

Your Appointment

Most students in IPB receive financial support in the form of a graduate student stipend. The source of the support and the responsibilities associated with it may vary. Students entering IPB directly usually receive a research assistantship (RA) funded by IPB from their arrival until the end of the first year. Stipends for students supported by departments are governed by departmental policies. The responsibilities associated with your stipends depend on whether you have an RA or a TA (teaching assistantship). Information about these forms of support is available in the Graduate College Handbook.

All graduate students on assistantships have signed a Graduate Assistantship Letter of Intent that lists the terms and conditions of their appointment. Generally, graduate assistantship appointments are on a “one-half time” basis. “Half-time” is the maximum time appointment for graduate students because the other half of your time is spent as a student in graduate studies and research. Appointments may be terminated by mutual consent or for cause as described in the Graduate College Handbook. If you have any questions regarding your appointment, see the IPB Program Chair or Dai Nguyen (207 Science I or e-mail dna112@iastate.edu).

Payday at the University is the last working day of each month. Your paycheck will be sent through campus mail to you by the ISU Treasurer to the university address you have given to the Human Resources Office (Room 3810, Beardshear), or you may authorize the Treasurer to deposit your check in a bank of your choice by completing an authorization form available at the Human Resources Office. It is strongly recommended that you have your check sent to a banking institution. If applicable, deductions are made for Federal and State income taxes.

Scholarships

IPB leadership encourages graduate students and their major professors to consider scholarships sponsored by their home colleges and the Graduate College. For lists of opportunities:

- College of Agriculture and Life Sciences (CALS): <https://www.scholarships.cals.iastate.edu/scholarships/graduate>
- College of Liberal Arts and Sciences (LAS): <https://las.iastate.edu/students/scholarships/>
- College of Engineering (ENG): <https://www.engineering.iastate.edu/grad/fellowship-opportunities/>
- Graduate College: <https://www.grad-college.iastate.edu/finance/>

Grants for Research

The Graduate and Professional Student Senate (GPSS) provides funds to support graduate student research (<https://www.gpss.iastate.edu/students/awards/research>). Funding varies, but is often between \$200-300 for selected applications. Applicants must be a 1st author of a published manuscript and have presented their work in an oral presentation.

Grants for Professional Travel

Attendance and presentation of research results at professional meetings is an essential part of your training. All students should, if possible, attend at least one national or international meeting during their degree program.

To assist you in doing this, support for travel to professional meetings and conferences is available from the Graduate College, the Graduate and Professional Student Senate, the IPB Program and some departments. To request travel funds from the Graduate College and Graduate and Professional Student Senate, complete the "Request for Professional Advancement Grant" form (available at <https://www.gpss.iastate.edu/pag/apply>). It is to your advantage to apply as soon as possible prior to the deadline for each term. You may receive one Professional Advancement Grant from the Graduate College and Graduate and Professional Student Senate for travel each fiscal year. Some funding agencies have a 90-day limit for turning in travel expense vouchers. If your trip is being supported in part by funds from your major professor, be sure to initiate the process through Workday soon after you return to ensure that you will be reimbursed.

Benefits

ISU Student & Scholar Health Insurance Program (<https://sship.hr.iastate.edu/>)

Group Hospital, Surgical, and Medical Insurance:

<https://sship.hr.iastate.edu/graduate-assistants>

Single student coverage under the ISU Student and Scholar Health Insurance Program (SSHIP) is provided *free of charge* to all graduate assistants at ISU. New ISU students must be registered for at least one credit on AccessPlus in order to enroll for health insurance. To enroll, go to <https://sship.hr.iastate.edu/enroll> and click on "Enroll Now". Current registered students will automatically continue on August 1. Changes to your plan may be made only during the open change period of July 1-September 30.

Newly employed personnel should not drop any other insurance they may have until they know the beginning date of the ISU insurance. The Student and Scholar Health Insurance Program is available for the spouse/domestic partner of students and the children of students. For details and enrollment cutoff dates on the ISU Student and Scholar Health Insurance Program, please contact the student insurance representative (515-294-2394).

All international students, whether on assistantship or not, are required to carry the ISU Student Health Insurance or to be covered by another health insurance policy. For more information, contact the International Education Services (IES) in 252 Memorial Union (294-1120).

Prescription Drug Benefit Program

Graduate students on assistantship receive single coverage free of charge in a prescription drug benefit program that reduces the cost of generic and prescription drugs available at the Student Health Center Pharmacy. Information on this benefit can be found at:

<http://www.hrs.iastate.edu/sship/docs/PharmacyGradAssistsPostDocs.pdf>

Health Service

As a student, you are eligible to use the ISU Student Health Service. [The Thielen Student Health Center](#) is a complete outpatient medical clinic located west of Beyer Hall at corner of Sheldon and Union Drive on the northwest side of campus: <http://www.cyclonehealth.org/>.

The student health fee covers consultations with medical staff and subsidizes charges for services, such as laboratory tests, immunizations, X-rays, and pharmaceuticals. A range of services is offered, which you can view here: <https://health.iastate.edu/services/>. The health fee is not health insurance. A mandatory Student Health fee and Health Facility fee will be assessed at the beginning of each term to all students.

Additional information on the student group plan medical insurance and the benefits of the mandatory health fee may be obtained at:

<https://sship.hr.iastate.edu/>

<https://sship.hr.iastate.edu/eligibility-cost/graduate-students-with-assistantship>

Dental Insurance is available for a fee:

<https://sship.hr.iastate.edu/benefits/delta-dental>

Vacations

Students on assistantships are paid employees of the University and as such are expected to conduct professional activities all days ISU is open, including days when classes are not in session. Most students also conduct research on at least part of most weekends. Many students find semester break a good time to make substantial research progress. *Vacation should be discussed with your major professor.*

Rotation students can take short vacations during their rotations, but keep in mind that you are paid employees of the University as well as students. Students who wish to do so must obtain permission from both the professor in whose lab they are rotating and the Chair of IPB. Such permission should be obtained BEFORE reserving airline tickets or making other non-refundable travel arrangements. Students who take vacation without prior approval will not be paid for missed days and may suffer other administrative consequences at the discretion of the IPB Chair. Students who opt to leave the country for vacations or holidays and whose return is delayed due to visa or other travel problems will likely have their payroll stopped beginning at the end of any approved vacation days until they return to work.

All students are welcome to take vacation during University holidays. During the typical graduate student rotation period, University holidays include Labor Day (September), 2 days at Thanksgiving (November), 3 days at Christmas-New Year (December and January) and Martin Luther King Day in January.

Injuries and Injury Reports

If you are injured while performing your duties as a Graduate Assistant, you must stop by the office of your home department or the IPB Program Office and fill out an Employers First Report of Injury: <https://www.riskmanagement.iastate.edu/Report> as soon as you are able to do so. As a rule, the University's Worker's Compensation insurance carrier will pay for your medical

care, and medical appointments should be scheduled by your supervisor through Occupational Health.

Student Counseling

Student Counseling Service (SCS; <https://www.counseling.iastate.edu/>) provides a wide range of services to help students gain the most from their college experience. SCS offers career counseling, personal counseling, individual and group counseling, and workshops. Most services provided by SCS are short-term in nature, and SCS can assist graduate students needing long-term assistance with referrals to community services.

Some of the typical issues SCS assists students with include career decision-making, coping with relationship problems, low self-esteem, stress, loneliness, depression, cultural differences, sexual assault recovery, trauma, childhood abuse, conflicts over sexuality, substance abuse, eating disorders, academic motivation, and other concerns. Other services include the Substance Abuse Prevention Program, Career Resource Center, Disordered Eating Services, Learning Disabilities Screening, Placement Testing, Mind-Body Services (Bio-feedback and Mind Body Spa), and consultation and outreach services. SCS also provides consultation and training to faculty and staff to assist them in addressing the psychological needs of students.

Crisis Services through Student Counseling Services

If you have an urgent matter and feel it would be important to speak to a counselor as soon as possible, please call the SCS desk at 294-5056 and let the receptionist know that you are requesting a same-day crisis appointment or simply come to our office in the Student Services Building on the 3rd floor. SCS counselors save some appointments each day for such matters.

If this is after hours or on a weekend/holiday when SCS is not open, and you feel it is important to speak to someone, you may call the Richmond Center at 515-232-5811. **IF THIS IS A LIFE THREATENING SITUATION OR ONE THAT COULD RESULT IN HARM TO YOURSELF OR SOMEONE ELSE, CALL 911.**

- ***Recreation Services Office:*** [http:// www.recservices.iastate.edu](http://www.recservices.iastate.edu)
- ***Legal Assistance:*** <http://www.dso.iastate.edu/sls>
- ***Student Organizations:*** <https://www.stuorg.iastate.edu/>

Dean of Students Office (DSO) and Student Assistance Services (SAS)

Members of the Dean of Students Office (DSO) and Student Assistance Services (SAS) assist students as they manage issues surrounding academic concerns, personal matters/emergencies, and navigation of university policies and procedures. DSO/SAS staff members counsel students on effective ways of filing academic grievances, refer students to university & community resources, provide notification of faculty in emergency absence situations, intervene and follow up with students experiencing mental and physical crises, and provide assistance in understanding the University judicial system. In general, the DSO and SAS are places where students can find answers or start on the path to their own solutions.

These pages are designed to alleviate some frequent concerns, but it can be very helpful to talk one-on-one with a DSO staff member. Students, family members, and ISU faculty/staff

seeking assistance can contact dso-sas@iastate.edu or stop in to the [Dean of Students Office](#) (1010 Student Services Building); or call 515/294-1020 (TTY 515/294-6635) to schedule an appointment.

Administrative Matters

Administrative Assistance

There are a number of offices on campus to help with the administration of your graduate program. The main one for Plant Biology students is the Interdepartmental Plant Biology Office. Dai Nguyen is the IPB Program Coordinator and can provide help with questions about all administrative procedures. Academic advice about courses and rotations will be provided by your Temporary Graduate Advisor, major professor or Dr. Olga Zabolina (DOGE).

Interdepartmental Plant Biology Graduate Program
207 Science I
☎ 515-294-9052
FAX 515-294-6019
E-mail: ipb@iastate.edu

Office and Home Address

The Interdepartmental Plant Biology program needs to know your local address and telephone number and also needs to be informed of any changes in your address or phone number that may occur during your tenure in the program.

All first year IPB RAs will have a mailbox in the IPB Program Office. Your permanent office (desk) address will be determined once you have chosen a major professor. If you do laboratory rotations, you should be given a temporary desk in each laboratory as you proceed through your rotations. You may also be assigned temporary office space for your first academic year by the IPB program.

Communication

It is vital that you maintain good contact with IPB personnel throughout your graduate program. This is most easily done using e-mail.

E-mail: E-mail should be checked at least daily as this is the *primary means* of keeping students and faculty informed about program activities. You may use the following e-mail addresses to reach all students and faculty in the program:

ipbs@iastate.edu	(reaches all IPB graduate students)
ipbf@iastate.edu	(reaches all IPB faculty members)

IPB Homepage: Most of the information that pertains to the program in general can be found at the following web site:

<http://www.ipb.iastate.edu/>

Mail Service: You will normally pick up your physical mail in your home department. If you have not yet chosen a home department, a temporary mailbox will be assigned to you in 207

Science I. You should check for mail on a regular basis (at least twice a week). If the office door is unlocked but closed, please feel free to come into the office to obtain your mail.

Telephone: Local calls (phone numbers in Ames) may be made on most campus phones. Long distance personal calls must not be made on University phones.

Transportation

Bicycles: You can park your bicycle at many locations on campus. Except for walks labeled as bike paths, bicycle riders must not use campus sidewalks. A bicycle used between sundown and sunrise must be equipped with a headlight, tail lights or an adequate reflector, and a warning device. Bicycles should be registered for on- and off-campus usage by obtaining a University/City of Ames registration tag. *There is no fee for registration and the tag does not expire.* Online registration should be completed here: <https://www.parking.iastate.edu/permit/bike>

Buses: The city of Ames has an excellent bus system called CyRide (<http://www.cyride.com/>). During the school year the buses leave from most locations every 20 minutes. Iowa State students who have paid their University fees for the semester can ride for free, by showing their current ISU ID card.

Cars and Parking: Information about parking on campus can be found at <https://www.parking.iastate.edu/>. Specific information regarding student and commuter parking is available here, <https://www.parking.iastate.edu/permit/student>.

Summary of Administrative Forms

NOTE: For all forms:

The Director of Graduate Education (DOGE) is the IPB Chair:

Dr. Olga Zabolina

3212 Molecular Biology Building

zabolina@iastate.edu

515-294-6125

The Department/Program/Major is Interdepartmental Plant Biology (IPB).

Add/Drop Slips in AccessPlus

You can add/drop courses online in AccessPlus after the first week of classes. Please let Dai know if you need help to add/drop a course.

Request for Professional Advancement Grant (PAG)

You can request funds from the Graduate College and the Graduate and Professional Student Senate (GPSS) to attend and/or present at conferences and symposia.

<https://www.gpss.iastate.edu/pag/apply>

Request to Establish a Home Department

Complete when you decide on your major professor and home department.

<https://www.grad-college.iastate.edu/student/forms/>

POSC Online form

You can complete, submit, and revise your POSC through AccessPlus. To file: log in to [AccessPlus](#) and find the student tab in the upper right hand corner on your AccessPlus homepage. Click on it. Then select the Grad Student Status tab on the left menu. Then go to the middle section of the right column and find the button labeled “MY POSC Form”. Click on it and begin filling it out.

Request to Change Committee Appointment

Changes to Committee Appointment can be done through AccessPlus.

Requests for Preliminary and Final Examinations, and Graduation

All forms related to preliminary exams, final examinations, graduation and thesis/dissertation submission can be found on the Graduate College Student Forms page (<https://www.grad-college.iastate.edu/student/forms/>)

Professional Ethics

IPB subscribes to the precept that honest and ethical behavior is necessary for the conduct of good science. Membership in IPB (both student and faculty) is contingent upon high individual ethical standards.

It is imperative that you understand the ethical standards of science and conduct your scholarly activities accordingly. Scientists who commit unethical acts, whether from carelessness, ignorance, or malice, quickly lose the respect of the scientific community and/or are prevented from practicing science. Scientific misconduct includes such activities as: falsification of data, fabrication, deceptively selective reporting, purposeful omission of conflicting data with the intent to falsify results, plagiarism, representation of another's work as one's own, misappropriation of the ideas of others, the unauthorized use of privileged information, misappropriation of funds or resources for personal gain, and falsification of one's credentials. At ISU, these acts are taken very seriously and constitute "academic misconduct" (see Student Code of Conduct; <https://www.policy.iastate.edu/policy/SDR>). Individuals found guilty of academic misconduct may suffer a variety of penalties, up to and including expulsion from the university.

Occasionally, you may be faced with situations in which you are tempted to act in a manner you think might be unethical. If this occurs, we recommend discussing the situation with your major professor, or another professor whom you trust, to determine whether the actions you are considering are unethical. They should be able to suggest alternative actions that will be free of ethical questions.

Unfortunately, not all people understand or care about ethical issues and, at some time in your career, you may be witness to an act you believe to be unethical. When the individuals committing the presumed unethical acts are members of your own laboratory, or worse yet, individuals with power over you, such as your major professor, the situation can be very awkward and you must proceed cautiously. You will find yourself torn between a fear of retribution and a desire to stop the unethical behavior before it hurts you and other members of your laboratory.

If you believe that unethical behavior is going on in your laboratory, we recommend that you first attempt to discuss the situation informally with the person whom you think might be behaving unethically. Sometimes friendly questions will resolve the problem. If you feel uncomfortable in this approach, or if you have tried a friendly approach and it didn't resolve the problem, we recommend that you discuss the situation informally with a professor whom you trust. You may also go directly to the Chair of Interdepartmental Plant Biology. All discussions with the Chair will be confidential. You may also go directly to the Associate Vice-Provost for Research who is responsible for investigating charges of academic misconduct on campus. No matter what you choose to do, you should take great care to ensure the rights of the individual whose actions you are questioning. Frivolous accusations of misconduct and spreading of rumors are just as unethical as fabrication of data or plagiarism.

Laboratory Safety Training

All new graduate students participate in OSHA Lab Standard Training. This Training can be conducted by the University Department of Environmental Health and Safety Office (EH&S). All Plant Biology students are required to complete the following trainings and must present certification of completion before rotating in or joining a lab.

Go to <https://training.ehs.iastate.edu/IowaSU/site/>

Click on: *Login*

LOGIN: *enter your Username and password*

Take the following required trainings prior to working in the laboratory:

- *NIH Guidelines (~40 min)*
- *Biological Risk Assessments for Researchers (~30 min)*
- *Laboratory Safety: Core Concepts (~30 min)*
- *Fire Safety and Extinguisher Training (~30 min)*
- *Waste and Recycling Guidelines for Ancillary Personnel (~30 min)*
- *Emergency Response Guide Video (8 min)*

Please note that individual laboratories may require additional EH&S-based trainings. These could include, but are not limited to:

- *Autoclave Safety Training (~30 min)*
- *Biohazardous Materials: An Introduction (~30 min)*
- *Biosafety Cabinets: Safe Use and Maintenance (~30 min)*
- *Laboratory Safety: Chemical Storage (~30 min)*
- *Laboratory Safety: Compressed Gas Cylinders (~30 min)*
- *Laboratory Safety: Fume Hoods (~30 min)*
- *Laboratory Safety: Spill Procedures (~30 min)*

Non-Discrimination and Anti-Harassment Policies

Complete information can be found at: <http://policy.iastate.edu/policy/discrimination/>

Information on how to report a concern to the Office of Equal Opportunity can be found here: <https://www.eoc.iastate.edu/how-we-can-help/reporting-a-concern>

Selections from Iowa State University Non-Discrimination and Anti-Harassment Policy follow:

“Iowa State University recognizes the fundamental importance of providing an inclusive and welcoming environment for all members of our community. Indeed, the university’s **Principles of Community** include respect, richness of diversity, and freedom from discrimination. Consequently, ISU is committed to assuring that its educational programs and activities and employment terms and conditions are free from unlawful discrimination and harassment on the basis of age, color, creed, disability, gender identity, genetic information, national origin, pregnancy, race, religion, sex, sexual orientation, and protected U.S. veteran status.

This policy and the accompanying procedures, applications, and guidance document (collectively referred to hereafter as the “policy”) defines discrimination, harassment, and other important terms; sets forth the services and resources available to individuals impacted by discrimination and harassment and/or involved in a complaint filed pursuant to this policy; and explains the internal administrative procedures the university uses to respond to reports of discrimination and harassment. As detailed in the policy, the university provides prompt, fair, and impartial resolution processes for complaints filed under this policy and, where appropriate, administers reasonable interim remedial measures. Individuals found responsible for violating this policy may be subject to disciplinary action up to and including removal from the university.

In accordance with federal and state law, Iowa State University (“ISU” or the “university”) does not discriminate on the basis of age, color, creed, disability, gender identity, genetic information, national origin, pregnancy, race, religion, sex, sexual orientation, and protected U.S. veteran status (collectively referred to as “Protected Status”) in its programs, activities, or employment.

This policy prohibits all forms of unlawful discrimination and harassment based on Protected Status. In addition, this policy prohibits purposefully assisting in an act that violates this policy (i.e., complicity) and prohibits retaliation against any individual who in good faith participates in protected activity pursuant to this policy. This policy also provides for the prompt and equitable resolution of reports of discrimination, harassment, complicity, and retaliation. The university’s **Office of Equal Opportunity (OEO)** is responsible for administering this policy on behalf of the university.

All ISU administration, supervisors, faculty, staff, and students are responsible for successfully completing the university’s annual non-discrimination, anti-harassment, and anti-retaliation training program. The training program is specifically designed for its target audience (e.g., students, staff, faculty, supervisors, etc.) and is intended to assist university community members in understanding this policy.

The university has a separate policy that governs concerns of Title IX sexual harassment, sexual assault, dating violence, domestic violence, and stalking. These concerns are governed by the university's **Title IX Sexual Harassment, Sexual Assault, Dating Violence, Domestic Violence, and Stalking Policy**. Nothing in this policy shall be deemed to conflict, contradict, or supersede the Title IX Sexual Harassment Policy with respect to conduct governed by that policy. The university also has a separate **Non-Retaliation Policy** that prohibits prohibited retaliation against persons who engage in protected activity.

This policy applies to all individuals affiliated with the university, including students, staff, faculty, applicants for admission to or employment with the university, and individuals participating or seeking to participate in university programs or activities. Vendors, independent contractors, visitors, and others who conduct business with the university or on university property are also governed by this policy, although the university's ability to address conduct by third-parties may be more limited. In addition, recognized student and campus organizations are governed by this policy in accordance with the **Student Code of Conduct**. This policy applies to discrimination, harassment, complicity, and retaliation that occurs on-campus; during or at official university programs or activities (regardless of location); and off-campus conduct when the conduct unreasonably impacts a person's employment or education with the university or ability to participate in or benefit from the university's programs or activities. Even when the reported perpetrator of prohibited conduct is not within the university's control, the university can provide reasonable resources and support to impacted parties, and where appropriate, refer complaints to other entities."

Complaint Resolution

In an effort to prevent or stop discriminatory or harassing behavior, the University has adopted specific avenues through which an individual can make their complaint known. Please refer to the Office of Equal Opportunity for instructions (<https://www.eoc.iastate.edu/how-we-can-help/reporting-a-concern>). With issues of discrimination and harassment, it is important to identify and remedy the situation as soon as possible. For this reason, the University has adopted two complaint resolution mechanisms for discrimination and harassment concerns - informal and formal resolution. Claims of discrimination and harassment must be brought either as an informal complaint or a formal complaint to ensure that appropriate action can be taken right away. An informal complaint may, but need not be made before filing a formal complaint; however, once a formal complaint has reached resolution, the same complaint cannot be brought as an informal complaint.

To best remedy a situation, complainants are urged to promptly share concerns or complaints rather than risking their well-being or negatively affecting the University's ability to investigate their case due to the passage of time and potential departure of witnesses. If a formal complaint contains incomplete information, the Office of Equal Opportunity will promptly seek to gather the needed information from the complainant. Consistent with federal regulations governing the filing of complaints, the Office of Equal Opportunity may decline to investigate claims in which none of the alleged discrimination or harassing action occurred within the preceding 300 days.

Any employee, student, visitor, applicant, or program participant of Iowa State University may file a complaint alleging discrimination or harassment in violation of the University's policy prohibiting such conduct. Information about the University's policy and resolution procedures may be found in several offices, including the Dean of Students Office, the Student Counseling Service, the Women's Center, the Employee Assistance Program, and the Office of Equal Opportunity. Internal and external reporting and assistance resources are provided within the Non-Discrimination and Anti-Harassment Policy (<https://www.policy.iastate.edu/policy/discrimination#cssr>).

Confidentiality

Persons seeking general information or guidance about harassment or discrimination may be concerned about whether the information they share with another person will be confidential. While the university is eager to create a safe environment in which individuals can be unafraid to discuss concerns and make complaints, legal obligations may require the university to take some action once it is informed that harassment or discrimination may be occurring. Because of their positions of authority, certain university personnel--i.e., central administrators, deans, directors, department chairs, supervisors, and managers--are particularly obligated to take action when they receive a complaint of harassment or discrimination. Although the confidentiality of the information received and the privacy of the individuals involved cannot be guaranteed, they will be protected to as great an extent as is legally possible. The expressed wishes of the complainant regarding confidentiality will be considered in the context of the university's legal obligation to act upon the charge and the right of the charged party to be informed concerning the charge.

Please refer to the Resources and Reporting Options section of ISU's Non-Discrimination and Anti-Harassment Policy (<https://www.policy.iastate.edu/policy/discrimination/#rro>) for a list of **confidential**, **campus confidential** and **non-confidential** reporting resources.

Ombuds Office

The Ombuds Office (<https://www.ombuds.iastate.edu/>) offers confidential services to ISU graduate and professional students, postdocs, faculty and staff for the informal resolution of university-related issues (e.g. challenges with colleagues, supervisors, major professors, policies, procedures). These services are noted to be "independent, neutral and confidential", and include: Sounding board, Discussion of possible options, Communication coaching/strategies, Policy assistance, Document review, Resource and referral information, and Education and outreach. The Ombuds Office does not formally investigate complaints, and has additional limitations (<https://www.ombuds.iastate.edu/limit>).

Diversity, Equity and Inclusion at Iowa State University

The Interdepartmental Plant Biology Program is dedicated to fostering and maintaining an inclusive and equitable environment for the education of our diverse community of IPB students and faculty.

We welcome all races and ethnicities, all religions, all countries of origin, all gender identities, all sexual orientations, all abilities and disabilities, all spoken languages, all ages, everyone.

We encourage IPB community members, including the IPB GSO, to consider new ways to foster equity, diversity, and inclusivity in our program and to bring these suggestions and concerns to IPB leadership. IPB encourages all students and faculty to participate in DEI activities sponsored by Iowa State University, the Colleges and home departments, and to engage with the DEI Resources provided by each entity.

- College of Agriculture & Life Sciences Diversity Programs: <https://www.diversity.cals.iastate.edu/>
- College of Engineering Diversity & Inclusion: <https://www.engineering.iastate.edu/diversity/>
- College of Liberal Arts and Sciences Diversity: <https://las.iastate.edu/about-the-college/diversity/>

We encourage you to view the resources and policies available at ISU's Campus Climate website: <https://www.campusclimate.iastate.edu/>

The Office of Diversity, Equity and Inclusion

Iowa State University's Office of Diversity, Equity and Inclusion (<https://www.diversity.iastate.edu/>) is located at 2680 Beardshear Hall. This office aims to make Iowa State "a national leader in creating a welcoming and inclusive campus environment, our aim is to promote critical thinking; responsible management of people; professional skills development; innovation in research, teaching and learning; and the constructive expression of divergent viewpoints." Current initiatives include The Pronoun Project (<https://www.diversity.iastate.edu/who/gsdi/pronoun>), Inclusion@Iowa State (<https://www.inclusion.iastate.edu/>) and Principles of Community.

University Principles of Community: Iowa State University follows six Principles of Community, including Respect, Purpose, Cooperation, Richness of diversity, Freedom from discrimination and Honest and respectful expression of ideas, which are described at: <https://www.diversity.iastate.edu/connect/principles>

The Office of DEI is focused on implementing "Goal 4" of ISU's Strategic Plan: "Continue to enhance and cultivate the ISU Experience where faculty, staff, students, and visitors are safe and feel welcomed, supported, included, and valued by the university and each other." Implementation of actions toward this goals can be found at <https://www.diversity.iastate.edu/what-we-do/goal4>.

The Office of Equal Opportunity

The Office of Equal Opportunity (<https://www.eoc.iastate.edu/>) is located at 3410 Beardshear Hall and 515 Morrill Road. The OEO's mission is to ensure "equal access to employment and educational opportunities. The Office advances diversity, equity, inclusion, and fairness." Resources are available for "individuals who have experienced discrimination or harassment based on identity and protected class, and for those who have experienced power-based interpersonal violence. The Office provides individuals a safe environment for consultation and advice prior to choosing any particular next steps in their situation. Interactions with The Office of Equal Opportunity are low-risk and private." The OEO provides complaint resolution services, advice, education and outreach opportunities and intervention services. Services include consultations, facilitation, mediation, and trainings (<https://www.eoc.iastate.edu/how-we-can-help/services-we-offer>), as well as disability and religious accommodations.

ISU's Non-Discrimination and Anti-Harassment Policy can be viewed at: <https://www.policy.iastate.edu/policy/discrimination>. Discrimination and harassment resources are available at: <https://www.eoc.iastate.edu/resources-and-policies/discrimination-and-harassment>.

Online DEI-Related Training

Learn@ISU (<https://training.ehs.iastate.edu/IowaSU/site/>) offers a number of online training modules, including:

- Building Supportive Communities: Clery Act and Title IX
- Managing Bias
- Preventing Harassment and Discrimination: Non-Supervisors
- Drug-Free Workplace

Iowa State University Statement on Anti-Discrimination:

"Iowa State University does not discriminate on the basis of race, color, age, ethnicity, religion, national origin, pregnancy, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. Veteran. Inquiries regarding non-discrimination policies may be directed to the Office of Equal Opportunity, 3410 Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011, Tel. [515-294-7612](tel:515-294-7612), Hotline: [515-294-1222](tel:515-294-1222), email eooffice@iastate.edu."

External Fellowship Opportunities (a sampling that we know about)

NSF Graduate Research Fellowship Program (GRFP):

Brief overview is below; please go to the website for complete details. <https://www.fastlane.nsf.gov/grfp/>

Synopsis of Program (per NSF GRFP program solicitation): "The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the quality, vitality, and diversity of the scientific and engineering workforce of the United States. The program recognizes and supports

outstanding graduate students who are pursuing full-time research-based master's and doctoral degrees in science, technology, engineering, and mathematics (STEM) or in STEM education. The GRFP provides three years of support over a five-year fellowship period for the graduate education of individuals who have demonstrated their potential for significant research achievements in STEM or STEM education. NSF actively encourages women, persons who are members of groups historically underrepresented in STEM, persons with disabilities, veterans, and undergraduate seniors to apply.”

The three eligibility requirements for the Graduate Research Fellowship Program -- citizenship, degree requirements, and field of study – are described. Applicants are advised to read the entire program solicitation carefully to be sure that the requirements are interpreted properly. Applicants must exercise judgment in assessing eligibility. Applicants must be United States citizens or nationals, or permanent resident aliens of the United States. Fellowships are intended for individuals in the early stages of their graduate study. Applicants must have completed no more than twelve months of full-time graduate study at the time of their application. Fellowships are awarded for graduate study leading to research-based Master’s or doctoral degrees in the fields of science, technology, engineering, and mathematics supported by the National Science Foundation (See NSF-Supported Fields of Study). The NSF welcomes applications for interdisciplinary programs of study and research.

USDA Predoctoral Fellowship:

Brief overview is below; please go to the website for complete details:
<https://nifa.usda.gov/funding-opportunity/agriculture-and-food-research-initiative-education-workforce-development>

Synopsis of Program (per USDA Education and Workforce Development Program Request for Applications): “The Predoctoral Fellowships program areas help to develop new scientists and professionals to enter research, education, and/or extension fields within the food and agricultural sciences within the private sector, government, or academia. The aim of these fellowships is to cultivate future leaders who can solve emerging agricultural challenges of the 21st century. NIFA is particularly interested in supporting fellows that address (1) sustainable agricultural intensification; (2) agricultural climate adaptation; (3) food and nutrition translation; (4) value-added innovation; and (5) agricultural science policy leadership.”

To be eligible, applicant must be a U.S. citizen, national or permanent resident of the U.S. The applicant must have advanced to doctoral candidacy (i.e. passed the Ph.D. preliminary examination) by the date specified in that year’s RFA.

NIH Minority Fellowship:

<https://www.niddk.nih.gov/research-funding/research-programs/diversity-programs>
<https://researchtraining.nih.gov/programs/fellowships/f31>

The National Research Service Award Predoctoral Fellowship for Minority Students will provide up to five years of support for research training leading to the Ph.D. or equivalent research degree; the combined M.D./Ph.D. degree; or other combined professional degree and research doctoral degree in the biomedical, behavioral sciences, or health services research. These

fellowships are designed to enhance the racial and ethnic diversity of the biomedical, behavioral, and health services research labor force in the United States. Accordingly, academic institutions are encouraged to identify and recruit students from underrepresented racial and ethnic groups who can apply for this fellowship. Support is NOT available for individuals enrolled in medical or other professional schools UNLESS they are also enrolled in a combined professional doctorate/Ph.D. degree program in biomedical, behavioral, or health services research.

Department of Homeland Security (DHS) Scholarship and Fellowship Program Graduate Fellowships:

The Department of Homeland Security currently has two relevant fellowship opportunities for graduate students or recent graduates of the IPB program. Please return to the DHS website for updated scholarship opportunities.

- [Internship Program](#) (OPM): This program is for current students enrolled in a wide variety of educational institutions from high school to graduate level, with paid opportunities to work in agencies and explore Federal careers while still in school.
- [Recent Graduates Program](#) (OPM): This program is for individuals who have recently graduated from qualifying educational institutions or programs and seek a dynamic, career development program with training and mentorship. To be eligible, applicants must apply within two years of degree or certificate completion (except for veterans precluded from doing so due to their military service obligation, who will have up to six years to apply).
- [Presidential Management Fellows Program](#) (OPM): For more than three decades, the PMF Program has been the Federal government's premier leadership development program for advanced degree candidates. This program is now for individuals who have received a qualifying advanced degree within the preceding two years.

Graduate Fellowships for Minority Students (GEM):

<http://www.gemfellowship.org/>

The mission of The National GEM Consortium is to enhance the value of the nation's human capital by increasing the participation of underrepresented groups (African Americans, American Indians, and Hispanic Americans) at the master's and doctoral levels in engineering and science. We prepare technical leaders for advanced careers in industry, academia, and government agencies by identifying and selecting highly qualified GEM Fellows to complete a program of graduate study and internships. Through our university and employer members, and other strategic partners, GEM develops funding to award fellowships and builds mentor networks to support Fellows in achieving academic and professional success.

On-Line availability of funding resources:

STEM Opportunities: <https://stemgradstudents.science.gov/>

Funding Opportunities can also be searched at ISU's Grants Hub (<https://www.grantshub.iastate.edu/finding-funding/>).