



PennState
Eberly College
of Science

GRADUATE HANDBOOK
FOR PENN STATE'S
DEPARTMENT OF BIOLOGY
(2016/2017)

Department of Biology
The Pennsylvania State University
208 Mueller Laboratory
University Park, PA 16802
gradinfo@bio.psu.edu

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1 Introduction

This handbook is for the use of current graduate students in the Department of Biology at the Pennsylvania State University (Penn State), University Park campus. Although designed as a reference, graduate students are encouraged to familiarize themselves with the contents of the *entire* handbook. Sections 2 and 3 provide comprehensive information on the graduate program in biology. University course administrative procedures appear in Section 4 and 6. Section 7 and the appendices should be consulted when necessary on departmental and university policy matters. The handbook outlines the department and university's expectations of a graduate student, the students' rights and responsibilities, and explains the procedures to be followed in various situations. **All incoming students should carefully read the information for new students in Section 2 and, especially for Ph.D. candidates should also the description of the Ph.D. Program in Biology in Section 3.1.**

This handbook is also for the use of the faculty who have responsibility for guiding and advising students, and of fairly and consistently administering the graduate program in biology at Penn State. The handbook can only give a brief summary of relevant university rules and policies. But it is the definitive statement of Department of Biology rules and procedures.

The department strongly values student feedback on possible improvements to the graduate program. Students are encouraged to communicate openly with their peers and the faculty, both on biology and on issues of common concern to the graduate program. Such issues may include TA workloads, graduate student benefits, computing and office facilities, departmental degree requirements, advanced course offerings, or future job opportunities. Announcements of interest to graduate students are routinely sent out by email. Graduate students are encouraged to meet together regularly, as needed, providing an opportunity for informal peer support.

1.1 Guiding Principles

The Department of Biology adheres to the following "Guiding Principles for Good Practice in Graduate Education" as adopted from a statement of principles endorsed by the Graduate Council on May 8, 1996:

Working relationships between faculty, staff, and students are an important component of graduate education at Penn State. The quality of these relationships can make or break the graduate school experience. The development of a positive learning environment depends on a shared vision of educational values, objective, and expectations. It is the joint responsibility of faculty, staff, and students to work together to nurture this vision, and to encourage freedom of inquiry, demonstrate personal and professional integrity, and insure a climate of mutual respect. The following six principles are essential elements in a productive environment for graduate education at Penn State:

- **Understanding the work environment.** Faculty, staff, and students must each take the initiative to learn the policies, rules, regulations, and practices that affect them, their work, and the units in which they work. Graduate program handbooks, pertinent University publications, funding agency references, and other resources can typically be obtained from graduate program officers, the Internet, registered student organizations, department faculty, other students, faculty advisors, and thesis committee chairs.
- **Academic honesty, professional integrity, and confidentiality.** These qualities are the responsibility of all faculty, staff and students. Each member of the graduate community must endeavor to adhere to the highest level of these ideals in all their personal and professional activities.
- **A clear course of study.** The student and his/her faculty advisor should develop and agree upon a clear plan of academic study and the responsibilities associated with it. Careful planning and discussion throughout a graduate program are the best way to avoid later misunderstandings and problems.
- **An atmosphere of openness.** Students and faculty must work to establish and maintain an environment that is open, sensitive, and encourages free discussion between members of the graduate community. Clear, two-way communication is a critical ingredient in a successful graduate experience.
- **Acknowledgment of intellectual rights and property.** Students and faculty should discuss issues associated with academic freedom, intellectual property, authorship, and publication as part of the student's academic plan. Resolution of these issues early in the graduate program is often the best way to avoid later disputes.
- **Opportunities for evaluation.** Evaluation, reflection, and feedback are integral parts of the academic process. These items should be a regular part of every graduate program. Early, frequent, and constructive feedback helps to prevent small differences from becoming serious problems.

While these six guiding principles are not exhaustive, they do reflect a spirit that can make the graduate education process at Penn State more rewarding and productive for everyone.

1.2 Eberly College of Science Code of Mutual Respect and Cooperation

The Eberly College of Science has adopted a 'Code of Mutual Respect and Cooperation designed "to embody the values that we hope our faculty, staff, and students possess, consistent with the aspirational goals expressed in the Penn State Principles. The University is strongly committed to

freedom of expression, and consequently, the Code does not constitute University or College policy, and is not intended to interfere in any way with an individual's academic or personal freedoms. We hope, however, that individuals will voluntarily endorse the 12 principles set forth in the Code, thereby helping us make the Eberly College of Science a place where every individual feels respected and valued, as well as challenged and rewarded."

The 12 Principles of the Code are:

1. Treat everyone equally and with respect
2. Be courteous
3. Be ready to communicate
4. Encourage others and share your expertise with them
5. Give and accept constructive criticism
6. Be receptive to change
7. Be a team player
8. Get involved
9. Have a positive attitude
10. Be honest and accept responsibility
11. Recognize other people's priorities
12. Strive to do your best

1.3 Aims

The principal goals of the Penn State Department of Biology are:

- effective and conscientious education of students at all levels;
- performance of creative, high quality research at the frontiers of biology;
- provision of resources to the community, government, university, and industry in areas relevant to biology.

Our programs and rules are designed to achieve these aims, but the ultimate success depends on energetic, imaginative, and cooperative efforts of our students, faculty, and staff.

Specific goals of the graduate students in biology include: learning biology, developing research skills, and becoming prepared for future employment. The faculty and staff are devoted to helping students in all the many ways appropriate to these goals. Students should feel free to discuss these informally at any time.

Virtually all students are here because they aspire to careers involving biology in some way. Hence it is important to understand various facts concerning employment in such careers. The first fact is that only about 20% of Penn State Ph.D. recipients end up in academic careers; most of the rest work in the governmental or private sector. A rather higher proportion starts out in temporary postdoctoral positions. Frequently, the ultimate career does not directly involve the research area of the Ph.D. but does use the skills acquired during the graduate education. A useful exercise is to construct an Individual Development Plan, which evaluates potential career opportunities based on interests, skills, and values of the student (see myIDP at: myidp.sciencecareers.org/)

What are the skills sought by these various employers? There is an emphasis, of course, on scientific ability. Very important also is the ability to communicate clearly. It is important for students in the job market to possess these capabilities. It is prudent for students to develop such skills by presenting seminars, which are critically assessed, by writing reports and papers, and by discussing science with colleagues.

It should be noted that employers regard publications favorably. However, the specific number of papers tends not to be a critical variable. (This is true for colleges and universities as well as industrial employers.) Much more important, in general, are the assessments in reference letters of the individual's contributions to research in their field.

1.4 Mentoring Resources and Guidelines

Success in graduate school depends in large measure on the quality of mentoring the student receives as well as a close and effective working relationship with an advisor. Ideally, a student's advisor plays a mentoring role, providing advice on a variety of topics including dissertation projects, responsible conduct of research, professional development, and career selection. A student's mentor and advisor may be one and the same, they may be different people or the advisor may be one of several mentors. Ideally, thesis committee members will also be an important part of a student's mentoring team. Indeed, the most effective mentoring strategy might well involve a team or community of individuals playing various roles shaping and guiding the experiences of students. Regardless of the number or structure of these relationships, they should all be characterized by the desire to promote the academic, personal and professional success of graduate students.

Mentoring relationships are the responsibility of all parties involved and are most effective when they are built on mutual trust and respect. Recognizing that student needs and the nature of relationships change over time is also a critical component of successful mentoring relationships and should be explored at various points in the relationship by mentors and students alike.

The Graduate School provides resources for both mentors and graduate students through the Toolkit for Mentoring (www.gradschool.psu.edu/current-students/mentoring/).

The Eberly College of Science has also developed "Guidelines for Advisor - Graduate Student Interactions" (see next 2 pages) that have been adopted by the Department of Biology. The guidelines were created in collaboration with students in the college and reflect best practices in mentoring.

Students and advisors are encouraged to read and sign the guidelines at the beginning of their relationship, as well as to review them periodically. Completed forms will be kept on file in the office of the graduate program coordinator (208 Mueller Lab).

Guidelines for Advisor – Graduate Student Interactions

Effective advising, open communication, and ethical professional conduct are essential for a high quality graduate education and research environment. Effective research advising must be based on a commitment to provide every student access to supportive guidance on a range of professional, ethical and collegial issues. A productive research mentorship requires that students are treated respectfully and fairly, and that the research advisor serves as a role model—upholding the highest ethical and professional standards. These guidelines embody many of the best practices used by the majority of our faculty here and elsewhere. They are intended to provide a heightened awareness of the need to consciously establish an effective and productive advisor-student relationship that starts with trust, courtesy, two-way communications, and shared expectations.

Faculty Research Advisors should:

- promote an environment that is intellectually stimulating, and free of harassment;
- be supportive, equitable, accessible, encouraging, and respectful;
- recognize and respect the cultural backgrounds of students;
- be sensitive to the power imbalance in the student–advisor relationship;
- avoid assigning duties or activities that are outside students’ academic/professional responsibilities
- respect students’ needs to allocate their time among competing demands, while maintaining timely progress towards their degree;
- advise graduate students on the selection of appropriate course work, an appropriate thesis topic and assist them in selecting a thesis committee;
- set clear expectations and goals for students regarding their academic performance and research progress;
- discuss policies and expectations for work hours, vacation time and health contingencies;
- meet regularly and often with students to provide feedback on research activities and progress;
- provide students with training and oversight in all relevant aspects of research, including the design of research projects, the development of necessary skills, and the use of rigorous research techniques;
- avoid placing pressure on students to produce results that support particular hypotheses;
- devise effective ways of providing students with guidance and supervision during their prolonged absence;
- provide and discuss clear criteria for authorship at the beginning of all collaborative projects;
- encourage participation in professional meetings and try to secure funding for such activities;
- provide career advice, offer help with interview and application preparation, and write letters of recommendation in a timely manner;
- ensure students receive training in the skills needed for a successful career in their discipline, including oral and written communication and grant preparation as appropriate;
- acknowledge that some students will pursue careers outside of academia and/or outside their research discipline, and assist them in achieving their chosen career goals;
- schedule meetings to discuss topics other than research, such as professional development, career objectives and opportunities, climate, laboratory personnel relations, etc;
- be a role model by acting in an ethical, professional, and courteous manner toward other students, staff, and faculty.

Graduate Students should:

- recognize that they bear the primary responsibility for the successful completion of their degree;
- exercise the highest ethical standards in all aspects of their research (including but not limited to collection, storage, analysis, and communication of research data);
- complete all tasks assigned by the department, including teaching, grading and other assistantship responsibilities;
- know the policies governing graduate studies in the department and the graduate school and take responsibility for meeting departmental and graduate school deadlines;
- be proactive about communicating with your advisor and thesis committee, understanding that communication is a two-way endeavor;
- be considerate of other time constraints imposed on faculty and staff, including competing demands;
- take an active role in identifying and pursuing professional development opportunities;
- clearly communicate with their advisor(s) regarding their career preferences;
- be proactive about improving their research skills, including written and oral presentation skills;
- inform faculty advisors of potential and/or existing conflicts and work toward their resolution;
- seek mentoring and support resources beyond their faculty advisor(s), including other faculty members, peers, and organizations;
- obtain outside help from ombudsmen, graduate chairs, or other faculty if conflicts arise with their advisor;
- be aware that if they feel compelled to change advisors or research direction, they have options and should consult with their advisor, other mentors, or department officers;
- always act in an ethical, professional, and courteous manner toward other students, staff, and faculty.

Departments and Programs will:

- provide students with up-to-date information that includes policies, practices, degree requirements, and resources;
- assist students with selection of their advisor as needed, and provide students with contacts and resources for potential conflict resolution (e.g. ombudsperson, director of graduate studies, department head);
- provide pedagogical training and regular assessment of their teaching and other assistantship activities;
- monitor graduate student progress towards their degrees and professional development, including mentoring meetings, committee meetings, exam completions and other benchmarks appropriate to their discipline;
- provide and monitor training in the ethical conduct of research;
- provide appropriate infrastructure to allow students to complete their education and research in a timely and productive manner;
- provide opportunities for professional development that will be relevant to students seeking careers outside academia and/or their research discipline;
- establish and communicate policies for emergencies and unplanned situations that may disrupt the work of students and/or faculty;
- incorporate these guidelines and recommendations in their departmental policies or handbooks and actively encourage their observance.

We have met and discussed these guidelines.

(Faculty Research Advisor)

(Graduate Student)

(Date)

2 New Student Information

2.1 How to Contact the Biology Department

Penn State Department of Biology
208 Mueller Laboratory
University Park, PA 16802
Phone: 814-863-0278
Fax: 814-865-9131
Web site: bio.psu.edu

The graduate program coordinator (814-863-7034) can be found in the main departmental office located in 208 Mueller Lab. The graduate program coordinator takes care of the administration of the graduate program. Questions regarding admissions, requirements, deadlines, etc., should be directed to him/her. Email inquiries should be sent to: gradinfo@bio.psu.edu

Overall responsibility for the graduate program in biology lies with the Assistant Head for Graduate Education. Questions that have not been answered by the graduate handbook, your committee, and/or the graduate program coordinator, should be directed to him/her. The Assistant Head for Graduate Education is always open to suggestions and concerns you may have about any aspect of the graduate program.

2.2 Departmental Contacts

In addition to the Assistant Head for Graduate Education, there are a number of individuals and committees within the Department of Biology that have official responsibility for different aspects of the graduate program.

Department Head: Tracy Langkilde, tl30@psu.edu, 814-865-4562

Assistant Head for Equity: Mónica Medina, mum55@psu.edu, 814-867-2958

Assistant Head for Graduate Education: Stephen W. Schaeffer, sws4@psu.edu, 814-865-3269

Graduate Program Coordinator: Kathryn McClintock, biokat@psu.edu, 814-863-7034.

Candidacy Committee: A committee of Department of Biology faculty that evaluates students for admission to Ph.D. candidacy. This includes administering the candidacy exam. Chair: Tómas Carlo, tac17@psu.edu, 814-863-8274.

Ombudspersons: Persons charged with providing a safe environment for individuals in biology to discuss problems and issues outside of formal channels. Stephen Schaeffer (sws4@psu.edu) and Carla Hass (cah19@psu.edu).

Advisor: Advanced students have an individual faculty member as advisor who is responsible for guiding their

research. For students who have passed the comprehensive examination, the research advisor will continue as dissertation advisor.

2.3 Emergency Telephone Numbers

Ambulance/Emergency Calls 911
University Police 814-863-1111

2.4 Campus Services

Main Penn State phone number, 814-865-4700

Affirmative Action Office
328 Boucke Bldg, 814-863-0471
www.psu.edu/dept/aaoffice/

Center for Women Students
204 Boucke Bldg, 814-863-2027
studentaffairs.psu.edu/womenscenter/

Counseling and Psychological Services (CAPS)
501 Student Health Center, 814-863-0395
studentaffairs.psu.edu/counseling/

Directorate of International Student and Scholar Advising
410 Boucke Bldg, 814-865-6348
global.psu.edu/

Graduate Enrollment Services
114 Kern Bldg, 814-865-1795
www.gradschool.psu.edu/

Graduate and Professional Student Association
312 HUB-Robeson Center, 814-865-4211
gpsa.psu.edu/

Graduate Educational Equity
303 Kern Bldg., 814-863-1663
gradsch.psu.edu/diversity/

Human Resources
James M. Elliott Building 4th Floor, 814-865-8216
ohr.psu.edu/

LGBTQA Student Resource Center
101 Boucke Bldg, 814-863-1248
studentaffairs.psu.edu/lgbtqa/

Multicultural Resource Center
314 Old Main, 814-865-5906
equity.psu.edu/mrc

Parking Office
1 Eisenhower Parking Deck, 814-865-1436
transportation.psu.edu/student-parking

Payroll Office
101 James M. Elliott Building, 814-865-7621
controller.psu.edu/payroll-office

Student Affairs
206 Old Main, 814-865-0909
studentaffairs.psu.edu/

Student Disability Resources
116 Boucke Bldg, 814-863-1807
equity.psu.edu/ods

Thesis Office
115 Kern Bldg, 814-865-5448
www.gradschool.psu.edu/current-students/etd/

University Health Services
Student Health Center

Appointments General Medicine	814-863-0774
Appointments Women's Health	814-863-2633
Appointments Physical Therapy	814-863-0774
Advice Nurse General Medicine	814-863-4463
Alcohol Intervention Program	814-863-0461
Health Services Assistance	814-865-6556
Pharmacy	814-865-9321

studentaffairs.psu.edu/health/

University Health Services Student Insurance Office
302 Student Health Center 814-865-7467
studentaffairs.psu.edu/health/services/insurance/

2.5 Student Health Insurance

For graduate assistants and fellows, the University provides the Penn State student health insurance plan, which includes medical, dental, and vision insurance. The University pays 80% of premiums, while the remaining 20% is deducted from student paychecks on a monthly basis from September through May. The premium deductions in Spring (January through May) are slightly higher than in Fall (September through December) because they include the premium expense for the summer months as well.

Graduate assistants and fellows are automatically enrolled in the Penn State student insurance plan (unless a declination form is submitted by the deadline in early September). You may decline any or all coverage, but must provide proof of alternative basic medical insurance. Dependent family members must be enrolled every year by the deadline in early September.
(studentaffairs.psu.edu/health/services/insurance/graduate.shtml)

2.6 Graduate Degree Program Bulletin

The university publishes a *Graduate Degree Programs Bulletin* (bulletins.psu.edu/bulletins/whitebook/index.cfm). This bulletin contains comprehensive information on the graduate programs at Penn State and should be consulted as the primary source of information on university guidelines and regulations for the graduate program. In addition, the Office of Student Conduct provides a detailed outline of the

University's Code of Conduct (studentaffairs.psu.edu/conduct/); click on the link "Student Guide to General University Policies and Rules") for a compendium of university rules and regulations.

2.7 International Students

The Directorate of International Student and Scholar Advising (DISSA) will already have been in touch with you regarding immigration and naturalization matters. Additional information can be found online at global.psu.edu. Upon arrival, international students will need to apply for a Social Security Number. They will also need to fill out a Withholding form and open a bank account in order to receive a paycheck. Information on such matters can always be obtained from the graduate program coordinator. At the website above, online information can also be found on both on-campus and off-campus housing. **International students are strongly encouraged to gain full proficiency with the English language at the earliest possible opportunity. This should be given high priority in the first year of graduate school.** Information on the *Intensive English Communication Program* can be found at the website above.

2.7.1 Evaluation of English Competency

International students who are to be teaching assistants (TAs) are also required to **pre-register for a test of oral English proficiency** administered by the Department of Applied Linguistics, 305 Sparks Bldg, 814-865-7365. This should be taken upon initial arrival on campus. International students whose native language is English may be granted an exemption from actually taking the test, but pre-registration or the test is still required. Information on the ESL requirement is available from the graduate program coordinator.

International students whose speaking ability is judged inadequate by their results on the ESL test will be required to take courses to remediate the deficiency, which may include formally enrolling in ESL 115G, *American Oral English for ITAS I*, (3 credits). Upon receiving a passing grade in ESL 115G, they will be required to enroll in ESL 117G, *American Oral English for ITAS II* (3 credits), and 118G *American Oral English for ITAS III* (3 credits). A grade of "A" in these courses will qualify these students as having completed the spoken English proficiency requirement.

2.7.2 Guidelines on F-1 Visas

The U.S. Citizenship and Immigration Services (USCIS) has regulations that pertain to international students with F-1 visas. Each student is responsible for learning about and abiding by these regulations. Students who have questions regarding these regulations should contact the Penn State Directorate of International Student and Scholar Advising, 814-865-6348.

USCIS views students holding assistantships as having on-campus employment. On-campus employment is permitted

as long as the student is pursuing his/her program of study full time. Once the student completes the program of study and has no plans to continue, the student must stop working.

An F-1 student who is unable to complete a full course of study in a timely manner must apply for a program extension through iSTART (istart.gp.psu.edu) at least 30 days prior to the completion date on I-20 form. The research advisor will be asked to certify that the student has continually maintained regular student status and that the delays are caused by compelling academic or medical reasons, such as changes of major or research topics, unexpected research problems, or documented illnesses. Delays caused by academic probation or suspension are not acceptable reasons for program extension.

2.8 Assistantships and Support

The university's guidelines on graduate assistantships can be found at: www.gradschool.psu.edu/graduate-funding/funding/. Information on the terms of your appointment can always be obtained from the graduate program coordinator. Normally, students who maintain regular academic status and who make adequate progress toward completing their degrees can expect continued support as guaranteed in the offer letter.

2.8.1 Teaching Assistantships (TAs)

The Department of Biology awards about 60 graduate teaching assistantships each year.

Students supported by teaching assistantships work 15 to 20 hours per week teaching biology recitations and laboratory classes, grading problems and exams for instructors, etc.

In addition to providing support for graduate students, teaching assistantships help students to enhance their classroom skills. To assist in this development, all incoming graduate students are required to participate in a pedagogy course (BIOL 598A) their first fall semester.

*** Note that teaching assistants must report to the department a week before the semester begins. This is to allow for effective organization for large courses. Teaching assistants must also remain available until the end of the final exam period.**

The department will award financial support in the form of teaching assistantships, up to one semester per year, to Ph.D. students for years two through five (this time period is not extended if other sources of support are used during the first five years). Adequate progress in the degree program, as well as completion of the annual Student Activity Summary, is prerequisite for continued TA support. TA support beyond the fifth year of the Ph.D. program will be granted only with the approval of the Assistant Head for Graduate Education. TA support for students working for a M.S. will normally be limited to one semester.

2.8.2 Research Assistantships (RAs)

Research assistantships ordinarily support students during the period that they are devoting full attention to work on their thesis research. Such assistantships are often funded by external sources such as the National Science Foundation, the National Institutes of Health, the American Heart Association, or the Gates Foundation. The number available will vary from year to year. A research assistantship is supervised by the faculty member, or members, who have obtained funding for a specific research project. Normally, such funds are reserved for advanced graduate students and information on the assistantship will only be made available to qualified graduate students by the respective faculty members.

2.8.3 Fellowships, Awards, and Scholarships

The Graduate School has a number of fellowships, which it awards to outstanding students. Applicants must be nominated by the Department of Biology. In addition, the Graduate School administers Minority Graduate Scholars Awards. They are granted to incoming students as part of the University's comprehensive educational opportunities program. Applicants should consult the *University Bulletin Graduate Degree Programs* for more details about these fellowships and for information concerning externally funded stipends. The bulletin is available online at bulletins.psu.edu/bulletins/whitebook/index.cfm.

The Department of Biology also oversees the distribution of several scholarships and awards throughout the year.

Some departmental funding sources include:

- The *Homer F. Braddock Fund* supplies awards for incoming graduate students. These awards are merit based, and the decision to make the award takes place at the admissions level. The amounts of individual awards may vary and can be for either 1 or 2 years.
- The *Jeanette Ritter Mohnkern Graduate Student Scholarship in Biology* provides recognition and financial assistance to outstanding graduate students majoring or planning to major in Biology. Consideration for this scholarship is given to students who have achieved superior academic records or who manifest promise of outstanding success. To the extent permitted by law, first preference is given to female graduate students who meet the above criteria.
- The *Henry W. Popp Graduate Assistantship* is awarded to an advanced doctoral student in the plant sciences, who is working with a member of the biology faculty. It is typically used as support during the final year of dissertation preparation.

- The *J. Ben and Helen D. Hill Memorial Fund* recognizes outstanding graduate students enrolled in the College of Science with interests in the plant sciences or genetics/development by providing scholarships to graduate students.
- *Dr. John Randall Shuman Troxell Memorial Scholarship* provides recognition and financial assistance to outstanding graduate students pursuing a degree in biology.
- *Hyman and Jenny Burstein Memorial Scholarship in Science* provides recognition and financial assistance to full-time undergraduate and/or graduate students enrolled or planning to enroll in the Eberly College of Science.
- The *Biology Travel Grant Award* is available to all students in good standing who have a current Student Activity Summary on file. Funding is awarded to students who are presenting their research at a conference, workshop, or professional meeting to help defray expenses.

Fellowships are also available to qualified graduate students from external agencies such as the National Science Foundation. Such information can be found at: www.gradschool.psu.edu/graduate-funding/types-of-graduate-support/external/.

2.9 Biology Department Graduate Student Association

The Biology Graduate Student Association (BDGSA) is an important departmental resource drawing together graduate students for informal social and intellectual interaction. BDGSA activities in the past have included fielding a volleyball team, hosting pizza lunches, providing orientation and tips for new students, sponsoring talks for the departmental colloquium, arranging practice talks for meetings, and presents the department. Since the graduate student associations are designed by the current graduate student body, activities will vary from year-to-year.

3 Degree Requirements

This section explains the requirements for the graduate degrees offered by the Department of Biology: the Ph.D. and M.S. degrees. It is a combination of general university rules and the specific requirements of the Department of Biology. In certain cases, exceptions to the rules may be granted.

Students entering the graduate program in biology are encouraged to work directly towards the Ph.D. degree if that is their ultimate goal. However, it is realized that careers exist for personnel with more limited graduate training in the biological sciences, and the department offers a thesis M.S. degree for students interested in those types of

positions. A program without a specific research component meets the professional goals of other students, and the Department of Biology also offers the option of a non-thesis M.S. degree in biology.

3.1 Doctor of Philosophy in Biology

The Ph.D. program in the Department of Biology is first and foremost a research-oriented program. The single most important facet of the Ph.D. program is the successful completion and defense of an original research project – your thesis. Additionally, the Department of Biology and the Graduate School require that students meet certain requirements, maintain satisfactory scholastic performance, demonstrate mastery of the English language, and successfully pass candidacy, comprehensive, and final oral examinations. The following information is provided to assist you during your tenure in the department, but you should consult the *Graduate Degree Programs Bulletin* (bulletins.psu.edu/bulletins/whitebook/index.cfm) for details.

3.1.1 Selection of Advisor

The faculty advisor/graduate student relationship plays a central role in the education and growth of the graduate student. All students in the Graduate Program in Biology should have an advisor by the end of their first academic year. The faculty advisor will participate in the design and planning of the thesis project and advise you as necessary during all phases of your graduate program. Under some circumstances, a change in advisor may be warranted. In this case, it is your responsibility to find another suitable faculty advisor.

3.1.2 Selection of Courses

The Graduate School does not require a specified number of graduate courses or credits as a prerequisite to the Ph.D. However, this is an opportunity for you to complement your education with respect to areas of weakness and to benefit from the considerable and varied expertise represented by the Penn State faculty. Biology faculty offer a wide variety of graduate classes, many of which may be especially useful in your chosen field of specialization. Your initial program of study should be designed in close consultation with your faculty advisor. As a result of your performance on the candidacy and comprehensive examinations, the examining committee may also suggest specific course work. Since both your faculty advisor and your doctoral committee must sign your thesis, all of their recommendations should be taken seriously.

All doctoral students must maintain a satisfactory scholastic record. A failing grade in any class or a grade point average below 3.0 for any semester may be considered evidence of failure to maintain a satisfactory scholastic record and could be grounds for termination by the graduate program. You must have a grade point average above 3.0 when you take each of your examinations and to graduate. The Graduate

Council has established an upper limit of 12 credits of quality (letter) grades for credit in the 600 series. Additional research credits must be assigned an R grade.

Four biology courses are curricular requirements for all incoming biology doctoral students: BIOL 590, BIOL 592, BIOL 598A/B and BIOL 602, as is the successful completion of ethics training, defined below.

BIOL 590: Doctoral students must complete a minimum of four semesters of BIOL 590 (Colloquium, Section 001), while master's students are required to complete two. This one-credit course provides a vehicle for introduction/integration into the departmental seminar series. You are encouraged to enroll in BIOL 590 each semester you are in residence. This course requires attendance at all biology seminars and at least six of the after-seminar meetings. The sign-up sheets for the after-seminar talks are available on Canvas (canvas.psu.edu).

BIOL 592 (Critical Evaluation of Biological Literature) is a one-credit seminar course specifically designed to provide you with professional training in the ethical conduct of research, experience in critical evaluation of science methods and publications, and to assist in preparation for the candidacy examination. All doctoral students are required to register for this class during their first fall semester in residence, and master's students must also attend the ethical component.

BIOL 598 (Experiential Teaching in Biology) is a pedagogical training course to prepare teaching assistants for the classroom.

BIOL 602 (Supervised Experience in College Teaching) is a one-credit, required course for teaching assistants. The Biology program considers teaching an important aspect of graduate education and, therefore, includes a teaching requirement in the curriculum. Teaching assistantships provide an opportunity for students to receive pedagogical training, as well as to develop their verbal communication skills, and are considered invaluable tools in preparing students to present science in clear terms. Four credits of BIOL 602, corresponding to four semesters as a teaching assistant, are required for all Ph.D. candidates in biology.

The Graduate School requires all post-baccalaureate, degree-seeking students to complete an ethics course as part of the SARI (Scholastic and Research Integrity) program. This training consists of two components. The instructional component for biology students is part of BIOL 592 (Critical Evaluation of Biological Literature), while the web-based component is administered by the Collaborative Institutional Training Initiative (CITI) and is completed online.

Students register for the CITI course at: www.citiprogram.org. Select "Pennsylvania State University" as the participating institution, and complete the

rest of the enrollment information. Choose the RCR (Responsible Conduct of Research) course. The course takes about 8 hours to complete and can be taken in advance of or simultaneously with BIOL 592. Students should provide the graduate coordinator with their completion report when they have finished the online CITI course. For students entering the graduate program in fall, the CITI course is required to be completed by September 15.

3.1.3 Candidacy Examination

The Graduate School requires that all Ph.D. students take a candidacy examination after completion of at least 18 graduate credits beyond the baccalaureate and within three semesters (summer sessions do not count) of admittance to the doctoral program. You must be a registered student (full- or part-time) in the semester you take the examination. In the Department of Biology, the candidacy examination currently consists of both a written and an oral component. The candidacy committee, which consists of at least four faculty from the Department of Biology, administers the examination once each semester. This examination is designed to test your ability to read and understand primary biological literature; to critique the research based on your knowledge of the scientific method, as well as specific techniques and statistical treatments; to evaluate the interpretation and presentation of the research; and to express yourself clearly and concisely in grammatically correct, written English. For this examination, each student is asked to read and provide a written critique of one short article from appropriate recent literature, based on guidelines available to the student well in advance of the examination. The committee provides a number of articles from which to choose, covering a range of topics that reflect the general fields of study of the students taking the examination. The articles are made available to the students at 8:00 a.m. on a Saturday, and the typed critiques are due at 6:00 p.m. the next evening. Each examination is graded by all members of the committee with three possible outcomes: (1) unconditional pass, (2) conditional pass, with a requirement of satisfactory completion of specific course work, or (3) fail.

Two options are available for a student who fails the initial candidacy examination: the student may retake the written examination the following semester, or elect to take an oral examination. In the event of failing the written examination twice, the student may, at the committee's discretion, be given the opportunity to take an oral examination. The oral examination will cover fundamental knowledge in the biological sciences (such as covered in our freshman and sophomore curriculum), ability to formulate hypotheses, and understanding of experimental design and interpretation. This examination will be scheduled at the mutual convenience of the student and the committee within three months of the written examination. Failure on the oral candidacy examination will result in notification to the student of failure to be accepted as a Ph.D. candidate by the

department and termination of any departmental support at the end of the current academic semester.

Successful completion of the candidacy examination marks the formal and official acceptance by the department and the Graduate School of your candidacy for a doctoral degree.

3.1.4 Selection of Doctoral Committee

The general guidance of a doctoral candidate is the responsibility of a doctoral committee consisting of at least four members of the Penn State graduate faculty, two of whom must represent your major field of study and one who must be from outside that field. Your research (thesis) advisor will be one of the major field members of your committee, but another tenured faculty member in the Department of Biology must be designated as the chair. Your goal in selecting your doctoral committee should be to assemble a group of faculty with diverse, complementary, and relevant expertise who can assist you in planning and conducting your doctoral research. The committee should be selected immediately after successful completion of the candidacy examination in close consultation with your faculty advisor. In addition to guidance throughout your doctoral research program, this committee will administer both your comprehensive and final oral examinations.

At least one graduate faculty member of the doctoral committee must represent a field outside the candidate's major field of study in order to provide a broader range of disciplinary perspectives and expertise. This committee member is referred to as the "Outside Field Member." In cases where the candidate is also pursuing a dual-title field of study, the dual-title representative to the committee may serve as the Outside Field Member.

Additionally, at least one graduate faculty member of the doctoral committee must have a primary appointment in an administrative unit outside the primary appointment administrative home of the student's dissertation advisor (e.g., for tenure-line faculty, the tenure home) in order to avoid the potential for conflicts of interest. This committee member is referred to as the "Outside Unit Member." A qualified individual may serve as both the Outside Field Member and the Outside Unit Member.

If the candidate is also pursuing a dual-title field of study, a co-chair representing the dual-title field must be appointed. If the candidate has a minor, that field must be represented on the committee by a "Minor Field Member."

Additional persons of particular expertise from outside the University may serve on your committee either as full *special members* (participating in all obligations of the committee) or as *special signatories* who are required only to read and approve the thesis. Persons from outside the University must be officially recommended by the Assistant Head for Graduate Education and approved by the director of

Graduate Enrollment Services. *Paperwork to appoint the committee is available from the graduate program coordinator in 208 Mueller Lab. Graduate School notification of official committee members and/or changes to the committee must occur at least three weeks in advance of scheduling the comprehensive or final oral examination.*

You are required to meet with your committee at least once a year, beginning in the second year of study. The purpose of these meetings is to keep your committee informed of your plans and progress, as well as to obtain the maximum benefit from their expertise and input. Failure to meet this requirement will make a student ineligible for any departmental support, fellowships/scholarships, or travel grants. A Committee Meeting Summary form is available from the graduate program coordinator and should be completed after annual meetings.

3.1.5 Language Requirements

All doctoral candidates are required by the Graduate School to demonstrate a high level of competence in the use of the English language – including reading, writing, and speaking – prior to taking the comprehensive examination. Additionally, reasonable competency in reading, writing, and speaking English is required of all teaching assistants. International students from a non-English speaking country must demonstrate this ability to the satisfaction of the Graduate School and the Biology program before being permitted to teach. This includes satisfactory performance on the Test of English as a Foreign Language (TOEFL) prior to admittance, as well as passing the American English Oral Communicative Proficiency Test (AEOCPT) upon arrival at the University. The Biology program must also assess and work to improve the English competence of both domestic and international students, and the candidacy examination serves as a major component in that process. If a deficiency is noted, the student will be required to take and pass ENGL 418 (Advanced Technical Writing and Editing), with a grade of B or better. There is no foreign language requirement for a Ph.D. in biology.

3.1.6 Comprehensive Examination

The comprehensive examination is designed primarily to evaluate your research proposal and your ability to conduct the research. Therefore you will be expected to be familiar with methods and literature pertinent to the subject matter of your research topic, as well as to demonstrate an ability to integrate material from related fields. Your doctoral committee will administer this oral examination, and all members of the committee are required to be present. It is recommended that you discuss the examination format and content with all members of your committee before the examination.

This examination should be taken after you have completed all course work and your thesis research is well under way. You must have already demonstrated a high level of competence in the English language and passed your

candidacy examination before scheduling it as well. You must have a grade point average of 3.0 or better with no deferred or missing grades to take the comprehensive examination and must also be in registered status (full or part-time) in the semester that you take the examination. *The paperwork to schedule your comprehensive exam will be completed and forwarded to the Graduate School by the department's graduate program coordinator. You must provide the date/time/location to her at least three weeks prior to the date of the examination.*

Because this examination focuses on the evaluation of your research program, you must prepare a written prospectus of your thesis research and provide copies to all members of your committee at least two weeks prior to your examination. At the minimum, this prospectus should describe your thesis research, its significance, the research design and techniques to be used, the results of preliminary studies, and a time schedule for its completion. The prospectus should also include an up-to-date student activity summary.

The dissertation advisor, as well as the chair of the doctoral committee, along with additional members of the committee to total a minimum of three (3), must be physically present at the comprehensive examination. The graduate student must also be physically present at the exam. (Thus for a five-person committee, two could participate remotely.) No more than one member may participate via telephone; a second member could participate by teleconference. *A request for remote participation of committee members must be submitted by the graduate program coordinator to the director of Graduate Enrollment Services for approval at least four weeks prior to the date of the exam.*

A favorable vote of at least two-thirds of the committee is required to pass the examination. The report on the examination will be submitted to the graduate program coordinator by the chair of the doctoral committee. Should a student fail the comprehensive examination, a second examination may be given, at the discretion of the doctoral committee, no later than the following semester. A second failure will result in the student being terminated from the Ph.D. program.

By proffering a favorable report on the comprehensive examination, the doctoral committee acknowledges its approval of your thesis plans and confidence in your potential to complete the requirements for the Ph.D. At this point, your academic efforts should be centered on the completion of your thesis research and preparation of the results for publication. After completing the comprehensive examination, you should meet with your doctoral committee at least once each academic year to review your progress and facilitate completion of your degree. Prior to these meetings you should present each member of your

committee with a written progress report and a student activity summary.

A graduate student must be registered continuously for each semester (excluding summers) from the time the comprehensive examination is passed until the thesis is accepted by the doctoral committee.

3.1.7 Thesis Requirements

The central requirement for a Ph.D. in biology is the completion and acceptance of a written thesis. The Ph.D. thesis should represent a substantial and original contribution to the body of knowledge in your chosen field. The research should be rigorous and of such extent and significance to garner the respect of scholars in the field. The quality of the thesis must meet the publication standards of high-quality, refereed journals; in fact, it is strongly recommended that portions of the thesis be submitted for publication in refereed journals as soon as they are completed.

The thesis must be prepared according to an established format which is described in detail in the *Thesis Guide* found at: www.gradschool.psu.edu/current-students/etd/. A variety of other bulletins, directories, timetables and workshops pertinent to thesis preparation are also available through the Thesis Office (115 Kern Building, 814-865-5448). You are responsible for knowledge of all details and deadlines, and are urged to make use of these resources well in advance of your final semester. A summary of applicable deadlines is available from the graduate program coordinator in 208 Mueller.

The thesis should be in final draft form before the final oral examination (thesis defense) is scheduled. This final draft should include all major revisions, tables, figures, and bibliography, and be in the proper format for acceptance by the Graduate School. A copy of this final draft must be supplied to all members of the doctoral committee at least two weeks in advance of the final oral examination.

Acceptance of your thesis by the Graduate School and its inclusion in the University Libraries is the final step for obtaining your Ph.D. The final version must meet the style guidelines detailed in the *Thesis Guide* (mentioned above) and be signed by all members of your doctoral committee and the department head. The Graduate School now requires electronic submission of the doctoral thesis/dissertation, and details may be found at: www.gradschool.psu.edu/current-students/etd/. Be sure to allow sufficient time to make all changes required by the signatories and the Graduate School prior to the final thesis submission deadline.

3.1.8 Final Oral Examination

Your entire doctoral committee administers the final oral examination (also known as the thesis defense). As indicated above, it should not be scheduled until your thesis

is in final draft form, approved by your thesis advisor, and ready for distribution to the committee. *The paperwork to schedule your final oral exam will be completed and forwarded to the Graduate School by the department's graduate program coordinator. You must provide the date/time/location to her at least three weeks prior to the date of the examination, which must be at least three months after passing the comprehensive examination. You must be in registered status during the semester you schedule this examination.*

The oral examination consists of a presentation of the thesis by the candidate, followed by a period of questions and responses. The first portion of the examination, in which the thesis is presented, is open to the public. Questions from the committee will relate in large part to the thesis. However, since this examination is intended to assess the general scholarly attainment of the candidate, questions relating to any aspect of the candidate's program of study are appropriate.

The dissertation advisor, as well as the chair of the doctoral committee, along with additional members of the committee to total a minimum of three (3), must be physically present at the final oral examination. The graduate student must also be physically present at the exam. (Thus for a five-person committee, two could participate via distance.) No more than one member may participate via telephone; a second member could participate by teleconference. *A request for remote participation of committee members must be submitted by the graduate coordinator to the Graduate School at least four weeks prior to the date of the exam.*

A favorable vote of at least two-thirds of the doctoral committee is required for passing. The committee can make several specific recommendations at this time:

1. Both thesis and examination be approved.
2. The candidate be approved and the thesis be approved after minor changes or additions.
3. The candidate be approved but the thesis be substantially revised and resubmitted.
4. Both thesis and candidate be re-examined at a later date.
5. The candidate be disapproved unconditionally for the degree.

The doctoral committee will provide a written report to the graduate program coordinator detailing its recommendations to be forwarded to the Graduate School.

3.1.9 Additional Details

A variety of other details and deadlines, not specifically covered in this summary, are fully explained in the *Graduate Degree Programs Bulletin* (bulletins.psu.edu/bulletins/whitebook/index.cfm). Most of these will not affect the majority of graduate students. However, if you are delayed significantly, spend a significant portion of your time off campus, or are not registered

continuously as a student, you should consult the *Graduate Degree Programs Bulletin* carefully to make sure you meet the specific time limits and residency requirements. The most generally applicable details are the following:

- You must be registered continuously each fall and spring semester between the passing of your comprehensive examination and your final oral examination.
- You must file your Intent to Graduate through LionPATH (LionPATH.psu.edu) before the Graduate School deadline, which is early in the semester of graduation.
- Over some 12-month period between passing your candidacy examination and completion of the Ph.D., you must spend two semesters as a registered full-time student at the University Park Campus, Hershey Medical Center, or Penn State Harrisburg.
- The final oral examination must be held within six years of completion of the comprehensive examination, or the comprehensive must be retaken.
- A maximum of eight years is allowed from the time of admission to candidacy for completion of the Ph.D.

3.2 Master of Science in Biology (Thesis)

The general requirements for the M.S. degree include 30 graduate credits, a written thesis, and successful defense of the thesis before a faculty committee. The following guidelines and information are provided to assist you during your tenure here, but you should consult the *Graduate Degree Programs Bulletin* (bulletins.psu.edu/bulletins/whitebook/index.cfm) for details.

3.2.1 Selection of Advisor

The faculty advisor/graduate student relationship plays a central role in the education and growth of the graduate student. Students entering the M.S. program in biology must select an advisor by the time they arrive. The primary role of the faculty advisor is to participate in the design and planning of the thesis research and to advise students during all phases of their graduate program. Although it leads to a loss in time and effort, a change in advisor may be warranted under some circumstances. In this case, it is the responsibility of the student to find another suitable faculty advisor.

3.2.2 Requirements for Course Work

A minimum of 30 graduate credits is required for a M.S. degree, 20 of which must be completed at the University Park campus. This must include at least 18 credits from courses in the 500 and 600 series with a minimum of 12 credits of course work (not including research credits) in the 400 and 500 series, 6 of which should be at the 500 level. Students enrolled the thesis option must also complete at least 6 credits of BIOL 600.

Masters students are required to enroll in BIOL 590, Section 1, for two semesters. This is a one-credit course, and provides a vehicle for introduction/integration into the departmental seminar series. This course requires attendance at the seminars and six after-seminar meetings each semester. The post-seminar meetings are generally held in 216 Mueller Lab. Sign-up sheets are available on ANGEL (cms.psu.edu).

In addition, students who are assigned as TAs are required to be enrolled in BIOL 400.

The Graduate School requires all post-baccalaureate, degree-seeking students to complete an ethics course as part of the SARI (Scholastic and Research Integrity) program. This training consists of two components. The instructional component for biology students is part of BIOL 592 (Critical Evaluation of Biological Literature), while the web-based component is administered by the Collaborative Institutional Training Initiative (CITI) and is completed online.

Students register for the CITI course at: www.citiprogram.org. Select "Pennsylvania State University" as the participating institution, and complete the rest of the enrollment information. Choose the RCR (Responsible Conduct of Research) course and the Biomedical option. The course takes about 10 hours to complete and can be taken in advance of or simultaneously with the ethical component of BIOL 592. Students should provide the Graduate Program Secretary with the completion report when they have finished the online CITI course. For students entering the graduate program in fall, the CITI course is required to be completed by September 15.

All graduate students must maintain satisfactory scholastic performance. A failing grade in any class or a grade point average below 3.0 for any semester may be considered evidence of failure to maintain a satisfactory scholastic performance and grounds for termination from the graduate program. The Graduate Council has established an upper limit of six credits of quality (letter) grades for M.S. thesis research. Additional research credits must be assigned an R grade.

3.2.3 Selection of Committee

You, in conjunction with your thesis advisor, must select a faculty committee, which will be responsible for administering your thesis defense and approving your thesis. This committee should consist of at least two members of the graduate faculty in addition to your thesis advisor. Although the first requirement for interaction with your graduate committee is at your thesis defense, you are strongly urged to select the committee as soon as you develop your plan of study. If the committee is carefully chosen, the members will contribute intellectually during your thesis research. Thus, including the committee members at an early stage of your research will enrich your

thesis and may avoid unpleasant surprises during the latter stages of completion of your thesis.

3.2.4 Thesis Requirements

A M.S. thesis in biology includes the presentation of original research. The thesis research will be conducted under the guidance of a thesis advisor who holds a faculty appointment in the Department of Biology and is a member of the Graduate Faculty. Since the M.S. generally takes less than half the time to complete as a Ph.D., the master's thesis is not expected to be as extensive as the doctoral thesis. However, the M.S. thesis must be an original contribution and should be of sufficient quality for publication in a refereed journal. Your thesis advisor must approve the thesis, and all necessary changes must be made before submission to your graduate committee.

The thesis must be prepared according to an established format which is described in detail in the *Thesis Guide* found at: www.gradschool.psu.edu/current-students/etd/. A variety of other bulletins, directories, timetables and workshops pertinent to thesis preparation are also available through the Thesis Office (115 Kern Building, 814-865-5448). You are responsible for knowledge of all details and deadlines, and are urged to make use of these resources well in advance of your final semester. A summary of applicable deadlines is available from the graduate program coordinator in 208 Mueller.

3.2.5 Thesis Defense

Your thesis defense should be scheduled with your committee after they have been supplied with a final draft of your thesis (previously approved by your thesis advisor). An e-mail needs to be sent to the graduate program coordinator to confirm the date of your defense. The Graduate School does not need to be notified of a M.S. thesis defense.

During your thesis defense you will be expected to answer questions that pertain directly to your research, as well as related topics at the discretion of the committee. You should be prepared to defend your choice of topic, methods, and interpretation. The committee may suggest corrections, additions, additional experiments, re-examination at a later date, or in extreme cases may recommend that the candidate be dropped from the program at this time. The final thesis, signed by all members of the committee, must be submitted to the head of the Department of Biology for signature prior to submission to the Thesis Office for final approval. The Thesis Office may require additional editorial or formatting corrections if their guidelines have not been followed. When planning to graduate in a particular semester or session, make sure to allow sufficient time to complete all of the revisions before the announced deadline for that semester or session. It is imperative that you activate your Intent to Graduate through LionPATH (lionpath.psu.edu) before the deadline in the semester you plan to graduate. Strict adherence to Graduate School

deadlines is required, and little flexibility is allowed. Failure to comply may result in your inability to graduate.

3.3 Master of Science in Biology (Non-Thesis)

The professional goals of some students may best be met with a non-thesis M.S. degree. A non-thesis M.S. student must have a biology faculty member serve as his/her advisor and choose a faculty committee consisting of at least two members of the graduate faculty in addition to your advisor. A non-thesis M.S. must include a minimum of 30 graduate credits at the 400 and 500 level, with at least 18 credits at the 500 level. At least 24 credits should be course credits, with at least 15 credits from Department of Biology courses. Also, BIOL 590 should be scheduled for at least two semesters. A "professional paper" of acceptable scientific quality is required, and up to six credits of BIOL 596 (Independent Studies) can be earned for this work. The paper might review a topic in biology based on current research, put forth a mechanistic concept, or report on original research at a level somewhat lower than that required for a M.S. thesis. The paper is not submitted to the Graduate School, but a copy is retained by the Department of Biology. The academic program, the performance of the student, and acceptability of the paper must be approved by the student's advisor, his/her committee, and the assistant department head for graduate education.

3.4 Graduate Student Activity Report

Every year you will be asked to complete a Graduate Student Activity Report (GAR) online at: apps.science.psu.edu/grad_activity/ and submit it by April 15. The graduate program uses this information to follow your progress towards your degree and to determine your eligibility for teaching assistantships, special awards, travel support for professional meetings, summer support, etc. The GAR is also intended to give you an opportunity to evaluate your own professional progress and to make you aware of the many ways we as scientists interact professionally. Your advisor will also complete an evaluation as part of the GAR, which should be discussed together. The assistant head for graduate education will review the GAR and adds the final approval.

4 Course Administration Procedures

The material in this section will be of use both to students taking classes and to those who are involved in the teaching of courses (e.g., as a teaching assistant).

4.1 FERPA

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. For your rights (as a student) and your responsibilities (as a teaching assistant) under FERPA, please visit: registrar.psu.edu/confidentiality/FERPA_faq.cfm#3

4.2 Course Registration

Students can register well in advance of the first day of classes --- in late September for the following Spring semester, in February for the following summer session, and in late March for the following Fall semester; instructions and dates may be found in the Schedule of Courses for that semester. The Schedule of Courses is available at public.lionpath.psu.edu/psp/CSPRD/EMPLOYEE/HRMS/h/?tab=DEFAULT. Once preliminary course schedules have been distributed, schedule adjustments may be made prior to the first day of class. Students may register for or drop courses during the first week of classes at no charge, but after the drop/add period end, there is a nominal charge for making changes.

4.3 Examination Procedures

Written notification of the examination procedures (including the instructor's final examination policy) to be used in each section of each course must be made available to the students in the section during the first ten calendar days of a semester or its equivalent.

4.4 Posting of Grades

When displaying student scores or grades publicly, you may not use a student's name, PSU ID, social security number, or any other personal identifier. Instructors can instead assign a secret code to each student in the class and post grades with this code. Codes used to post grades must be random and not correspond to students in alphabetical, social security number or PSU ID order.

4.5 Student Ratings of Teaching Effectiveness

Each semester, both undergraduate and graduate students are asked to evaluate the quality of the teaching in their courses. This applies to individual sections of large courses through advanced graduate seminars. The process is called the SRTE (Student Rating of Teaching Effectiveness) and is an on-line process for instructors. Students are prompted by emails to go on-line and complete evaluations for their courses in the final two weeks of class. Every effort should be made to obtain maximum participation.

In addition, the Department of Biology evaluates the quality of instruction by the teaching assistants in the core courses. These evaluations may take a variety of forms, and the results are made available to the TAs.

4.6 Final Exams

All courses have a final examination or some other means of testing student integration of the instructional material (e.g., term paper, final project report, take-home examination, etc.). Course instructors determine which of these methods is most appropriate. Students should not make travel plans that prevent them from being present for a final exam.

Term papers, take-home exams, etc., when used in place of a standard final examination, must be due no earlier than the first day of the final exam period. Written final examinations must be scheduled in the final examination period. No examinations may be given during the last week of classes with the exception of quizzes and narrowly limited tests in support of classroom instruction.

Unless the instructor of a course informs the students otherwise, the time and date of the final exam for a course can be determined from the schedule available in LionPATH (lionpath.psu.edu). *In the case of graduate courses, however, there may be changes from the published university schedule;* the instructor must make it clear when and where the examination is to be held. When the examination is not at the standard time, the instructor should consult the students to avoid conflicts.

4.7 Grading

In normal courses, the following “quality” grades can be assigned: A, A-, B+, B, B-, C+, C, D, or F. Grade point averages are based on a four-point scale, with A=4.00, A-=3.67, B+=3.33, B=3.00, B-=2.67, C+=2.33, C=2.00, D=1.00, F(fail)=0.00. The University requires that all graduate students maintain at least a B, or 3.00, average. The meanings of the grades are defined as follows: A = excellent, B = good, C = satisfactory, D = poor, F = failure.

A student doing research needs to register for an appropriate number of credits (using course numbers 596, 600, or 610 as appropriate). There is a limit to the number of credits of research credits that can be assigned letter grades: 6 credits for master's candidates and 12 credits for doctoral candidates. Beyond these limits a grade for satisfactory research is reported as R. This denotes satisfactory progress and is not used in calculating a grade point average. There are only three circumstances under which a course grade, once assigned, can be changed:

1. if there was a calculation or recording error on the instructor's part in the original grade assignment (Senate Policy 48-30);
2. if it is a course for which an R grade has been approved and in which an initial R can be assigned and can be changed later to a quality grade. The only courses in the Department of Biology for which an R is given are BIOL 590 (Colloquium), BIOL 596 (Individual Studies), BIOL 600 and 610 (Thesis Research);
3. if a DF (deferred grade) was assigned and the deadline for course completion has not yet passed.

4.8 Deferred Grades

If work is incomplete at the end of a semester because of extenuating circumstances, then the instructor may report DF in place of a grade, which will appear temporarily on the student's record. It is not appropriate to use the DF either

casually or routinely to extend a course beyond the end of the semester or to extend a course for a student who has failed so that the individual can do extra work to improve the grade. The DF must be removed (i.e., the course must be completed) within nine weeks of the beginning of the succeeding semester, or six weeks if the student registers for summer session, with two possible exceptions:

1. a completion deadline longer than nine weeks may have been previously agreed upon by the instructor and student, with a memo summarizing that agreement having been sent to the Office of Graduate Programs, 114 Kern, for inclusion in the student's file: or
2. as the nine-week deadline nears, it may become evident that an extension is warranted. The instructor then sends a request for an extension (to a specific date) to the Dean in the Office of Graduate Programs, with a justifying statement.

It is to be emphasized that no deferred or missing grade may remain on the record at those times when a student reaches an academic benchmark. Benchmarks for the Department of Biology include the doctoral candidacy, comprehensive, and final oral examinations. Deferred or missing grades must be resolved before a student can take these exams.

4.9 Grade Changes

Changes in assigned and recorded grades are possible only to correct errors made in calculating or recording the grades, not to allow a student to improve a grade retroactively, or to permit long-delayed completion of a course. Senate Policy 48-30, found in the Policies and Rules for Students, governs grade changes.

The above policy refers to “quality grades,” i.e., A through F. Instructors of graduate-level courses (500 level and above) may report DF (deferred) in place of a grade when work is incomplete at the end of a semester for a reason beyond the student's control. This deferred grade must be removed and the mark changed within nine weeks of the beginning of the succeeding semester (six weeks if the student registers for summer session) or the grade deferral will lapse to an F.

Changing grades on transcripts is a serious matter. In the following situations, the Graduate School requires that the course instructor submit a memo with the Grade Change Authorization Form, stating the reason for the requested change when:

1. an F grade is being changed or
2. more than one year has lapsed since the grade as assigned, or the student has graduated.

5 Presentation of Research

5.1 Colloquia and Seminars

Seminars and colloquia are important parts of your education and provide opportunities to interact with a diverse group of scientists on topics both in your area of research and others. These seminars include series sponsored by almost every department on campus, numerous student groups, as well as weekly seminars sponsored by the Huck Institutes of the Life Sciences and intercollege graduate degree programs such as ecology, neuroscience, and plant biology. The Center for Infectious Disease Dynamics (CIDD) also has a regular seminar series. "Science Seminars," summarizing the seminars being offered by departments in the Eberly College of Science, is available at: science.psu.edu/science-seminars. In addition, the ecology program hosts a weekly "brown-bag" lunch series designed especially for graduate student presentations (lunch is not provided at these functions so you should bring your own).

The Department of Biology sponsors weekly seminars during the fall and spring semesters that feature speakers from both inside and outside the Penn State scientific community. Following most of these seminars, the speaker meets for 45 minutes with interested graduate students to discuss the seminar or other topics of interest to the students. **All graduate students should plan to attend all departmental seminars and register for Biology 590 (Section 001).** Students registered for BIOL 590 are required to meet with at least six of the speakers after their seminars over the course of the semester. Sign-up sheets are posted on Canvas (canvas.psu.edu).

There are six lecture series in the Eberly College of Science generously endowed by Russell Marker, professor emeritus of organic chemistry at Penn State, whose pioneering work led to the development of the birth control pill and the founding of Syntex. In addition to the Marker Lectures in Evolutionary Biology, the college presents annual Marker Lectures in astronomy and astrophysics, the chemical sciences, genetic engineering, the mathematical sciences, and the physical sciences.

The Eberly College of Science also hosts the annual Chemerda Lectures in Science. Named in honor of Dr. John M. Chemerda, chemistry major and a member of the Penn State Class of 1935, the lectures are supported by a grant from Merck & Co., Inc., made in connection with an award conferred to Dr. Chemerda by Merck's Board of Directors.

5.2 Graduate Research Exhibition

The Graduate Research Exhibition is open to all Penn State graduate students. To enter, students do not need to have finished the research for their master's degree or doctorate. Any sound, scholarly research or creative activity can be

entered, as long as a well-defined part of the project is complete.

Exhibits are judged on their quality in three areas: content, display, and oral presentation. All exhibitors receive certificates of appreciation; those whose exhibits are judged best receive award scrolls as well as monetary awards in the form of budget support, which can be used to attend professional meetings or purchase books or equipment needed for research.

1. *Oral presentation* (30 points): Each student should have prepared an oral discussion of his or her exhibit, tailored specifically to make the work understandable to a non-expert audience. This discussion should be clear and concise, and should include the major points presented on the poster (numbers 6 through 12 above). It must not exceed 5 minutes; judges will be instructed to observe this time limit. (Note that a videotape or demonstration cannot be submitted for the discussion.) If the student worked with collaborators on the project, including his or her advisor, this presentation should clearly describe the student's role in the overall project.

5.3 Intellectual Property, Publications, etc.

Sometimes department research uncovers knowledge with possible commercial applications. It is necessary to take appropriate steps for patent protection. The precise university policy is given in Appendix C. All university employees (including graduate students on assistantships) sign a patent agreement that indicates their responsibilities. The university's Intellectual Property Office has the responsibility (in concert with inventors) to patent and market inventions.

In general, inventions (including computer software) are owned by the university, but the inventors receive a share of the proceeds. However, "the copyright of literary, scholarly and artistic works, including books, articles, contributions to collective works, and other means of presentation, but excluding instructional materials, is considered to be outside the scope of employment and therefore owned by the creator, whether or not created on University time or using University resources."

Graduate students are strongly encouraged to submit manuscripts for publication of their findings. The authorship of these papers is determined by the norms and ethics for scientific papers in the field of study. It is frequent, but by no means universal, that the advisor is a co-author on a student's paper.

6 Facilities

6.1 Email

Email is assigned through the University Access Account system. Unless there is a specific need for an additional email account, it is recommended that the PSU email system be used. You should read your email at least once per day. Your Access Account email address will be used by the department as your primary email address.

6.2 Mail

Mail (campus, first-class, and express) is delivered once a day to the departmental mailroom (208D Mueller Lab). First-year biology students, as well as students working in labs in Mueller or No. Frear, have individual mail folders in 208D Mueller Lab. This mailroom is open Monday through Friday from 8:00A to 5:00P.

Students working in Wartik Lab, Life Science Bldg., Millennium Science Complex or other areas usually have their mail delivered to a lab mailbox in their location. Please speak with labmates about the delivery of mail in your building. If you wish to have your mail delivered to 208D Mueller Lab (and you are not working in a Mueller or No. Frear lab), please inform the graduate program coordinator.

Express deliveries of lab supplies sent to 208 Mueller will be brought to the lab rather than left in the mailroom.

6.3 Copy Machines and FAX

Departmental copiers are located in 208 Mueller Lab and have the capability to scan as well. These machines are primarily for use in support of teaching and research. Personal copying is generally prohibited, but you may ask staff to use a copier in limited situations. In addition, there are public copiers for personal use in the Hetzel Union Building (HUB) and at Pattee Library, as well at the University's various copy centers. Local commercial copying shops (for example, Kinko's) have coin operated machines and extensive fax/copying facilities available at a competitive cost.

The copier in the mailroom (208D Mueller) also has FAX capabilities. The departmental fax number is 814-865-9131. Incoming messages will be put into the recipient's mailbox or folder.

6.4 Telephones

Telephones in offices may be used for local calls. Long-distance and international calls are only allowed for research and departmental purposes. Long distance international calling cards are available at local international grocery stores.

Note that calls made between campus phones do not require that you dial the complete number: simply dial 3-xxxx, 5-xxxx, or 7-xxxx, as appropriate. Off-campus local calls

(within the area code "814") can be made from a campus phone by dialing: 8-xxx-xxxx. Long distance and international calls cannot be made from campus phones without special authorization available only to faculty and staff members.

6.5 Keys/Swipe Access

Building and lab access is provided to students with the approval of the authorized supervisor or faculty member.

Requests for keys and swipe access are initiated by the completion of a key request form. For Mueller Lab and N. Frear Lab, forms are available in 208 Mueller. For Wartik Lab, Life Sciences Building, and Millennium Science Complex, forms are available in 101 LSB.

A key replacement fee will be charged to ALL University Key holders for lost University keys. In addition, actual recoring costs may be charged as a result of lost keys.

All keys are the property of the Pennsylvania State University and are not to be duplicated by any faculty, staff, or student. Duplication of a key, or possession of a duplicated key, will result in referral to the Office of Conduct Standard or the Office of Human Resources for appropriate sanctions.

Upon termination of employment and/or student status or transfer from the area, all keys must be returned to the office originally issuing the key. Failure to return keys upon termination or transfer may result in the holding of employee accounts or a charge to a student account until the keys are returned, or the cost of recoring the facility is recovered.

6.6 Maintenance of Facilities

Each graduate student has access to many parts of University buildings and various laboratory facilities. If any damage is discovered, it is not important to assign blame; what is important is that damage be reported at once so that facilities may be made functional as soon as possible.

Aaron Knight (amk31@psu.edu, 814-863-2154) is the facilities manager for the Department of Biology, with particular responsibility for Mueller Lab and N. Frear. Please contact him to report power outages, physical building damage out of the ordinary, equipment repair, and security issues.

6.7 Libraries

Information on the library system at Penn State is available at: www.libraries.psu.edu/. Many databases, including the catalog of holdings, can also be accessed online at that address.

The Pattee and Paterno Libraries comprise the main book repositories, but there are also specialized branches on

campus, such as the Physical and Mathematical Sciences Library in 201 Davey Lab. The Life Sciences Library is located in 408 Paterno Library, 814-865-7056. (www.libraries.psu.edu/psul/lifesciences.html).

All incoming students are strongly encouraged to attend the orientation for library facilities upon arrival on campus.

6.8 Use of University Vehicles

University vehicles are for official use only. Operators of university vehicles must abide by all state highway laws. Special courtesy to other drivers should be exercised at all times, since one is representing the Department, University and Commonwealth when driving a university vehicle. No passengers are allowed to ride in any of these vehicles unless the passengers are authorized to participate in official business.

A valid Pennsylvania driver's license is required to operate university vehicles, except that operation of vehicles heavier than 30,000 pounds gross requires a Class 2 license. A Class 3 license is required to drive a vehicle towing a trailer over 10,000 pounds. Caution: Only persons employed by the University are covered by insurance while operating a university-owned vehicle. A student on an assistantship meets the employment criterion. To reserve a university vehicle, you may make arrangements through the Department of Biology Business Office in 208G Mueller Lab or through Fleet Services (transportation.psu.edu/fleet). Depending on the type of vehicle needed, you may also be required to complete online training and testing prior to reservation.

6.9 Purchasing

This section concerns the purchasing of materials, supplies, and equipment required for conducting research. All purchases made for research, whether related to thesis research or not, must be approved in advance by the student's advisor.

Faculty with research funds normally have a purchasing card which allows quick procuring of products under \$2,000. A *purchasing card* (or p-card) is a Visa credit card with the charges billed directly to the university. The principal investigator can also approve the issuing of a purchasing card to other members of the research group. (The maximum amount per transaction may be set to less than \$2,000 for a particular card.) There are situations when the purchasing card cannot be used, and orders must be processed on a limited order or purchase order.

See guru.psu.edu/policies/PSU/BS14exc.html for the current list of restrictions on the use of Penn State purchasing cards. Anyone obtaining a purchasing card is required to take a series of on-line quizzes to ensure that they understand the proper use of the p-card.

A purchase order (P.O.) may be used for supplies, materials or equipment and must be used for purchases larger than \$2,000. The Purchase Order must be further approved in Penn State's Purchasing Services Department at 101 Procurement Building, and the order will be placed from there. If an emergency situation exists, then the purchase order may be walked through the system.

Any order with a total amount exceeding \$10,000 may be sent out for bids by university purchasing. To avoid this, an order may be accompanied by a Sole Source Justification form available from the Business Office or through the web (bio.psu.edu/general/formcenter/files/solesource.pdf).

Interdepartmental charges and credits (IDCCs) are for purchases from university stockrooms, etc. They are processed like limited orders, but approval may be electronic.

After an order is received, the package contents should be checked for defects and compared against the packing list to make sure that all the merchandise has been received. The signed and dated packing list should be returned to the one of the department's Business Office financial assistants within one week so that the bill can be paid. Without the signed packing list the Financial Assistant has no knowledge that the order has been received and the vendor will not be paid.

For immediate ordering of supplies and materials (not equipment) with prior approval, standing orders may be placed with vendors. A graduate student must obtain advisor approval and have his/her name placed on a list for each standing order vendor. For standing order purchases, delivery slips must be given to the advisor for his/her signature before submitting it to the Biology Business Office. These slips are kept on file in the Biology Office to be checked against the monthly bills. For relatively small purchases without a purchasing order (under \$2,000 per transaction) a Penn State Purchasing Card may be used-see above. If a purchase by other means is necessary, a request for reimbursement by check may be made; the minimum is \$50.

7 Problem Solving

7.1 "Chain of Command"

Occasionally problems may arise during your graduate career associated with serious personal conflicts, your research, or your teaching responsibilities. Your advisor should be your first choice as an advocate to help you in resolving most problems. However, if for any reason, it is inappropriate or you are not comfortable discussing a specific problem with your advisor, several options are available to you within the department.

If you already have your thesis committee in place, the chair is the logical point of contact after your advisor. In some cases you may feel most comfortable talking with another faculty member who knows you well, and you can expect that any of these conversations will be treated in confidence. Additionally, the doors to the offices of the department head and the assistant department head for graduate education are always open to you, and either will be willing to advise you in options for the resolution of your problems.

Finally, if you are unable to get resolution within the department, you may file a grievance with the dean of the college. The dean will convene a hearing committee, consisting of three graduate students from within the student's college, three faculty members, and an administrator (from outside the department, program, or intercollege program in which the disagreement originated), who will serve as the chairperson. The dean of the college refrains from additional contact in the resolution of the problem from this point. All details are listed in the *Graduate Degree Programs Bulletin* (the "White Book") under "Procedure for Resolution of Problems."

7.2 Ombudspersons

As part of the Eberly College of Science climate and diversity initiative, the Department of Biology has trained ombudspersons to provide guidance and resources for resolving problems that may arise between members of our community. The persons charged with providing a safe environment for individuals in biology to discuss problems and issues outside of formal channels are Stephen Schaeffer (sws4@psu.edu) and Carla Hass (cah19@psu.edu). Although the ombudspersons are specifically trained for their role, it is expected that all members of the biology community are cognizant of the need for a safe and confidential environment when problems are brought to them.

8 Campus Safety and Security

8.1 University Police Services

Police Services (located on the ground floor of Eisenhower Parking Garage) is the law-enforcement unit at Penn State-University Park.

To contact Police Services, dial:

9-1-1 for emergencies

or 814-863-1111 (for non-emergency calls)

Emergency/Pole Phones, directly linked to Police Services, are located throughout campus. Pole phones are the newest style of emergency phones and can be easily identified by the blue lights above them. These phones have no receiver, but instead contain a built-in speaker. A map with the locations of emergency/pole phones is available at:

www.geog.psu.edu/sites/default/files/2015_PSU_Night_Map%209x14web.pdf.

The Safe Walk Program (police.psu.edu/safe-walk-service), sponsored by Auxiliary Police, provides walking accompaniment for Penn State students, employees, and visitors who may feel uncomfortable walking alone on campus at night. To request an escort, call 814-865-WALK (9255). This service is available from dusk to dawn, 365 days a year.

Other services/programs related to safety are listed on the Police Services and Public Safety website at: www.police.psu.edu.

For crime statistics at University Park, visit the Clery Act website: police.psu.edu/clery.

8.2 Background Checks and Self-Reporting

Engagement with the University is contingent upon the results of a background check. A standard background check must be completed prior to the first day of work/engagement with the University. Any exceptions must be approved by the Office of Human Resources, Talent Acquisition Division.

Standard Background Check

A standard background check will include a social security number verification; a misdemeanor and felony criminal history check; and National Sex and Violent Offender Registry check.

Candidates will be informed that the offer is contingent upon a satisfactory background check. The candidate will be required to complete self-disclosure and consent forms authorizing Penn State to complete a standard background check.

Additional background checks may be required for specific positions based on job-related need.

Publicly Available Clearances

Individuals engaged with the University that have direct contact with minors or direct volunteer contact with minors as defined in Policy AD39 are required to obtain the publicly available clearances in lieu of a standard background check. Current employees, unpaid individuals, and third-party employees may also obtain publicly available clearances in lieu of a standard background check. Publicly available clearances include the following:

- Pennsylvania State Police Criminal Background Check
- Pennsylvania Child Abuse History Clearance
- Federal (FBI) Fingerprint Background Check

Records gathered as a result of these background checks are part of an employee's personnel file. However, Human Resources will keep such records in files separately from the

individual's general personnel file. For complete details regarding background checks, see HR-99: guru.psu.edu/policies/OHR/hr99.html.

Penn State employees (including graduate students) are also required to submit a self-disclosure form within 72 hours of arrest or conviction for reportable offenses. For the form and the list of offenses, please visit: guru.psu.edu/policies/arrestandconvictionselfdisclosureform.pdf

8.3 Mandated Reporter Training

All University employees, volunteers, and independent contractors are required to report all instances of suspected child abuse in accordance with Penn State policy AD72, and because this policy imposes broader obligations than the law, the obligation on employees, volunteers, and independent contractors of the University is broader than the obligations on the general public. In compliance with this policy, all university employees must complete the appropriate mandated reporter training every three years, offered through the Learning Resources Network: lrn.psu.edu

9 Transportation

9.1 Bus Service on Campus/Loop & Link

Bus service on and around campus is provided by the Centre Area Transportation Authority (CATA).

The Blue and White Loop buses provide no-fare service along Curtin Road and College and Beaver Avenues. Buses run every 10 minutes.

The Red Link bus provides no-fare service between Innovation Park and White Course Apartments. The Red Link runs on Park Avenue and Curtin Road, with stops at the commuter lots by the Bryce Jordan Center and Beaver Stadium.

The Green Link bus provides no-fare service along Curtin Road between Pattee Library and the commuter lots next to the Bryce Jordan Center and Beaver Stadium.

Maps and schedules are available at: www.catabus.com/ServiceSchedules/CATABUS/CampusService/index.html or by calling 814-238-2282.

9.2 RIDEpass Program

The RIDEpass mass transit program provides access to all CATABUS routes to eligible participants (including graduate students living off-campus) for only \$15 per month.

Interested graduate students may apply for the program by registering at: transportation.psu.edu/ridepass-employees. Once approved, students must visit the Parking Office at 1 Eisenhower Parking Deck to purchase the pass. All

participants MUST bring their Penn State ID card and a document verifying the address used to apply for the program.

The graduate student mass transit pass will be available only to graduate students who live off campus and who do not have access to a CATABUS pass as part of their apartment lease. In addition, access to a University daytime parking permit will be unavailable to graduate students who register for RIDEpass.

RIDEpass holders will, however, be permitted to register for an evening/weekend parking permit, which provides access to many faculty/staff parking lots after 4 p.m. on weekdays and throughout the day on Saturdays and Sundays. Available at a cost of \$6 per month, registration for the evening/weekend permit may only be completed at the Parking Office upon receipt of the RIDEpass mass transit pass.

9.3 Bicycle Registration

Bicycles (and mopeds) on campus must be registered and display a current Centre Region permit. The permit issued on the University Park campus is identical to the one issued by the Borough of State College and is valid in both jurisdictions.

Registration is free and completed online (<http://transportation.psu.edu/bicycle-registration>). Permits must be picked up at the Parking Office (20 Eisenhower Parking Deck) within 10 days of registration.

9.4 Parking on Campus

All parking lots on campus are reserved, and cars must display a parking permit issued by the Parking Office. Students commuting to campus may purchase a daytime permit to park their cars in the commuter lots: Lot 44, Stadium West, and Porter North during the day.

Vehicles must be registered by the first day of classes each semester or by the first business day following your arrival on campus. Permits are sold on a first-come, first-served basis.

For more information on student parking and permits, visit: transportation.psu.edu/student-parking.

10 Miscellaneous

10.1 Informal Interaction

The conference room in 216 Mueller Lab is reserved for graduate students during lunch from 12:00N-1:00P on weekdays.

10.2 Recycling

Everyone is encouraged to participate in the University's recycling program. Blue recycling bins for mixed paper, plastic, glass and metal cans are located on every floor in many buildings. There are also green bins for compost. In addition, smaller receptacles may be available for used batteries in some locations.

For further information on the recycling program, see the following website: www.sustainability.psu.edu/recycling-and-composting.

10.3 Smoking Policy

For the health, comfort, and safety of all people in the department, smoking is not allowed in any form in any area of the University's buildings or in any of the University's vehicles. Smoking may also be restricted in areas outside buildings.

Appendices

A Sexual Harassment

The Department of Biology is committed to providing an environment that is welcoming, sensitive, and supportive to all students. It is our policy to maintain an academic and work environment that is free of sexual harassment. The information that follows has been designed to assist you in knowing where to go if you have questions or complaints regarding sexual harassment.

A.1 University Policy

Sexual harassment of faculty, staff or students is prohibited and will not be tolerated at The Pennsylvania State University. It is the policy of the University to maintain an academic and work environment free of sexual harassment. Sexual harassment violates the dignity of individuals and impedes the realization of the University's educational mission. The University is committed to preventing and eliminating sexual harassment of faculty, staff and students through education and by encouraging faculty, staff and students to report any concerns or complaints about sexual harassment. Prompt corrective measures will be taken to stop sexual harassment whenever and wherever it occurs.

A.2 What is Sexual Harassment?

Sexual harassment has been defined by the U.S. Equal Employment Opportunity Commission as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when:

- submission to such conduct is a condition for employment, promotion, grades or academic status;
- submission to or rejection of such conduct is used as the basis for employment or academic decisions affecting an individual;
- such conduct has the purpose or effect of interfering unreasonably with the individual's work or academic performance or creates an offensive, hostile, or intimidating working or learning environment.

Some examples of sexual harassment are pressure for sexual activity; unwelcome hugging, patting or touching a person's body, hair or clothing; disparaging remarks to a person about his/her gender, body, or clothing; sexual graffiti or visuals; repeatedly asking for a date after the person has expressed disinterest; making sexual gestures with hands or through body movements.

A.3 Who Can Help

Penn State has a policy prohibiting sexual harassment (AD-41) and a complaint procedure to assist students, faculty,

and staff who have complaints of sexual harassment. Many problems can be resolved through the informal resolution portion of the process. The individuals listed below are available for you to talk with in regard to issues related to sexual harassment. Concerns/complaints may be taken directly to the department head, the Human Resources office of the Eberly College of Science, or to the Affirmative Action Office located in 328 Boucke Building (814-863-0471).

Amanda Jones
512 Thomas Bldg
863-0212
axj11@psu.edu

Marianne Karwacki
520 James Elliot Bldg
865-1387
mlk6@psu.edu

Henry McCoullum
428 Thomas Bldg
863-0285
hwm1@psu.edu

Peggy Lorah
204 Boucke Bldg
863-2027
mal273@psu.edu

For a complete list of individuals who are available to help you, please see the Penn State Affirmative Action web site at: www.psu.edu/dept/aaoffice/index.html

The individuals' names listed above and on the Affirmative Action web site are available to assist you in answering questions, listen to your complaint, advise you on procedures, see that appropriate action is taken, and assure that you are protected from retaliation. All situations are handled in the most confidential manner possible.

B International Travel Requirements

International Travel Requirements Policy applies to all University employees, students, and authorized volunteers while travelling as part of any university-affiliated international travel, regardless of the funding source, including individuals and groups of students participating in for-credit academic study-abroad experiences.

This policy requires that **all international travel** (other than approved education abroad programs) commencing after July 1, 2016 **must be registered in the Office of Global Programs' Travel Safety Network (TSN) a minimum of 30 days prior to travel.** As part of the travel registration, **students are required to attend an Emergency Preparedness Workshop conducted by the Office of Global Programs, and obtain the international health and emergency coverage offered through HTH Worldwide, prior to departure** (see Penn State Travel Policy/Insurance). More information about this insurance and the requirement to provide proof of coverage is located in the TSN database.

International travel reimbursement will not be approved without a receipt from the TSN confirming registration,

completion of the Emergency Preparedness Workshop and HTH insurance coverage.

Questions about the operation or use of the TSN system should be directed to the TSN Staff within the Office of Global Programs. The TSN Staff may be reached via email (tsn@psu.edu) or via phone (814-863-8788).

C Intellectual Property

This appendix contains selected passages of the Penn State's policy on intellectual property. For the complete policy, see: www.research.psu.edu/ipo/about/policies.html. You can also visit the Intellectual Property Office web site at www.research.psu.edu/ipo.

C.1 Introduction

Below is an overview of patent and copyright matters of interest to University personnel (faculty, staff, students, fellows, wage payroll employees, and persons on "visiting" appointments). The implementation of the policies and procedures outlined in this document should be subordinate to the University's graduate and undergraduate education, research and service missions.

Inasmuch as the University only recently initiated a program to enhance its stewardship of its patent and copyright activities, the policies and procedures cited herein are subject to ongoing review and possible future modification.

The management of patent and copyright processes in a university setting is a complex, highly specialized endeavor. As the need for details regarding policies and procedures arises, University personnel are urged to contact cognizant University administrators (deans and department heads, program and center directors, office supervisors, etc.) and the University Intellectual Property Office for assistance.

Universities are major sources of fundamental knowledge underlying the new products and processes essential to economic competitiveness. In this context, facilitating the process whereby university creative and scholarly works may be put to public use and/or commercial application (i.e., "technology transfer") is an important aspect of the service mission of a land grant university. In turn, the protection of concepts with commercial potential (inventions or creations) via patents and copyrights is an essential aspect of the technology transfer process. Without such protection, companies are unlikely to invest the funds required to commercialized new technology.

C.2 Rights in Inventions

Inventions with commercial potential may involve novel machines, devices, compositions of matter (compounds, mixtures, genetically engineered cells, plants, animals), genetic forms, software and computer systems, production processes, plant varieties, etc. Such inventions, and the

patents and copyrights that reserve rights to them, are termed Intellectual Property. University personnel have an obligation to disclose promptly to the University (Intellectual Property Office) inventions developed: a) with University resources, facilities, funds, or equipment), or b) within the fields of expertise and/or within the scope of employment for which they are retained by the University. This obligation is manifested in the patent agreement signed by all employees of the University.

C.3 Patent Practice and Procedures

University personnel who believe they may have developed an invention should immediately notify the cognizant University administrators, and the Intellectual Property Office. They will be asked to complete an invention disclosure form by the Intellectual Property Office. The invention disclosure defines the nature of, and provides the basis for a legal claim to, the invention in question.

The foregoing procedure is based on the premise that a close working relationship between University inventors and the Intellectual Property Office is important for the successful management of inventions. The reasons are varied. Inventor's knowledge of their research areas, and of companies active in related technologies, are key elements of the technical and market assessments for an invention, and of the search for licensees. In addition, inventions can serve as powerful catalysts for industrial research support. The search for such support is greatly enhanced by close collaboration between inventors and Intellectual Property Office staff. Finally, the search for licensees willing to underwrite the cost of concept refinement and/or patent prosecution represents a useful "market test" for an invention.

C.4 Copyright Practice and Procedures

The University encourages faculty, staff, and students to create literary, scholarly, and artistic works, including textbooks and other instructional materials. In this context, copyright ownership of such works generally rests with the creator(s) unless they are generated within the scope of the creator's employment, commissioned by the University, or are subject to a sponsor's agreement, which provides for a different ownership.

The copyright of literary, scholarly and artistic works, including books, articles, contributions to collective works, and other means of presentation, but excluding instructional materials, is considered to be outside the scope of employment and therefore owned by the creator, whether or not created on University time or using University resources. Conversely, copyrights in research or survey instruments (questionnaires, etc.), instructional materials (including videotapes), and in computer software created on University time are considered within the scope of employment and hence owned by the University. University personnel creating such materials are urged to contact the Intellectual Property Office, through the cognizant University

administrators, for assistance in the copyright process and for subsequent licensing efforts.

C.5 Intellectual Property Office Functions

The Intellectual Property Office provides assistance to University inventors and creators relative to the implementation of patent and copyright policies, provides counsel on intellectual property matters, and assists faculty and administrators with conflict-of-interest issues related to technology transfer and entrepreneurial activities. Mechanisms for assisting faculty with the patent and copyright processes, and subsequent licensing, are described in the PATENT and COPYRIGHT sections of this document (C.3 and C.4).

Cognizant University administrators have a primary role in monitoring adherence to, and advising personnel on, University policies in these areas. In turn, administrators are encouraged to avail themselves of Intellectual Property Office services, particularly on the more complex issues. To enhance awareness of University policies and procedures, the Intellectual Property Office conducts an ongoing series of informational meetings on intellectual property matters, conflict-of-interest, and technology transfer aspects of outside activities.

D Co-authorship

It is the policy of The Pennsylvania State University that proper credit is given to those individuals who make material contributions to activities which lead to scholarly reports, papers, and publications.

Rigid prescriptive requirements in this area are considered unwise because the situation with respect to co-authorship varies from one discipline to another and from one publication to another. Nevertheless, it is recommended that the authors of scholarly reports, papers, and publications abide by the following principles regarding co-authorship.

1. Co-authorship should be offered to anyone who has clearly made a material contribution to the work.

Moreover, each co-author should be furnished with a copy of the manuscript before it is submitted, and allowed an opportunity to review it prior to submission. An author submitting a paper, report or publication should never include the name of a co-author without the person's consent. Exceptional circumstances, such as death or inability to locate a co-author, should be handled on a case-by-case basis. In cases where the contribution may have been marginal, an acknowledgment of the contribution in the publication might be more appropriate than co-authorship.

2. In the case of theses for advanced degrees, if the thesis or paper based upon it is not published with the degree

recipient as sole author, then that person should normally be listed as the first author. In no instance should theses, or papers based upon them, be published under the sole authorship of the thesis advisor.

3. Anyone accepting co-authorship of a paper must realize that this action implies a responsibility as well as a privilege. As a general rule, each co-author should understand the content of the publication well enough to be able to take responsibility for all of it; otherwise the publication should clearly indicate the parts of which each co-author has responsibility. If a potential co-author has doubts concerning the correctness of the content or conclusions of a publication, and if these doubts cannot be dispelled by consultation with the other co-authors, the individual should decline co-authorship.