

GRADUATE PROGRAM HANDBOOK

Department of Food Science

The Pennsylvania State University

Fall 2011

(Revised 9/26/2011)

PENNSSTATE



Department of Food Science
202 Food Science Building
The Pennsylvania State University
University Park, PA 16802

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INTRODUCTION

Welcome to the Department of Food Science! Our strategic plan specifically states that the department will be recognized internationally for innovative research in the context of graduate education and you are an integral part of our program.

This ***Graduate Program Handbook*** presents information important to students enrolled in the M.S. and Ph.D. programs within the Department. The Graduate School of The Pennsylvania State University has general requirements that every Penn State graduate student must satisfy for admission and the awarding of a M.S. or Ph.D. degree. In addition, each graduate major has specific coursework requirements, thesis research criteria, and established policies that are appropriate to the program. Procedures and rules have the objective of assuring uniform and high standards of performance and it is the responsibility of each graduate student to become familiar with them.

Graduate education involves more than satisfactory completion of coursework and thesis requirements. Informal and frequent contact with the entire faculty and other graduate students is highly recommended. There are several opportunities for graduate students to get actively involved within the Department, College and the University while they are in graduate school through participation in departmental and university committees, Food Science Club, Institute of Food Technologists, Graduate Students' Association and so on.

This handbook is intended to serve as a guide as you navigate through your graduate program. The ultimate responsibility for the program resides with you. Please let me know if you have any suggestions on this handbook.

I wish you much success as you embark on your graduate degree program!

Swamy Anantheswaran
Graduate Program Coordinator
August 20, 2011

QUALITY INDICATORS FOR GRADUATE EDUCATION AT PENN STATE

The following facts are pertinent to the quality of the academic environment within Penn State:

1. Doctoral program in Food Science was ranked between 3 and 17 among 31 programs reviewed by National Research Council (NRC) in 2010.
2. Penn State was ranked 9th in total R&D expenditures in 2008 within Science & Engineering.
3. Penn State received more research funding from private industry (\$75.2 million in fiscal year 2000) than any other public university in the nation.
4. Penn State was ranked 3rd in 2006-07 Scholarly Productivity Index.
5. Penn State was ranked 12th in Association of Research Libraries 2004-05 Holdings.

DEPARTMENT CONTACTS

Provided below is a list of the administrative contacts who are located within the 202 Food Science office suite. Our office hours are from 8:00 a.m.-5 p.m. from Monday – Friday and closed on weekends.

<u>Name</u>	<u>Room #</u>	<u>Phone</u>	<u>e-mail</u>
Dr. John Floros, Department Head	206	865-5444	jdf10@psu.edu
Dr. Ramaswamy Anantheswaran, Graduate Program Coordinator	305	865-3004	rca3@psu.edu
Kimberly Ripka, Manager of Departmental Operations	208	865-5006	kab5@psu.edu
Svend Pedersen, Admin. Support Asst.	207	863-4827	sep14@psu.edu
Juanita Wolfe, Undergrad. & Graduate Support Assistant	203	863-8667	jmw5@psu.edu
Natashia Richardson, Student Support Asst.	202	865-5444	nar11@psu.edu
Greg Davidson, Accounting Assistant	211	863-8668	gld17@psu.edu
Thomas Dimick, Outreach & Computer Support Coordinator	215	865-3360	tsd3@psu.edu
Bob Lumley-Sapanski, Facilities & Safety Coordinator	216	863-2965	rxl4@psu.edu

The summary below is to help direct students to the appropriate people for assistance regarding specific questions:

- **Juanita Wolfe** handles questions and information for all new and current graduate students. Specifically she can assist students with:
 - Graduate student course scheduling and registration
 - Graduate assistantship appointments and payroll
 - Graduate policies and procedures
 - Transfer requests
- **Natashia Richardson** assists Juanita Wolfe with undergraduate and graduate responsibilities.
- **Kim Ripka** oversees all of the staff within the department and assists students with keys, and questions pertaining to payroll, taxes, etc. Kim is also a back-up contact for safety and facility issues and emergencies if Bob and/or Tom are not available.
- **Greg Davidson** oversees the financial accounting area and can assist students navigate through Penn State's purchasing and travel policies and procedures.
- **Bob Lumley-Sapanski** oversees facilities, lab safety, equipment usage, pilot plant training. He can assist students with facility issues, safety issues and scheduling pilot plant usage.
- **Thomas Dimick** handles questions regarding computer access and wireless connectivity. Tom is also a back-up contact for safety and facility issues and emergencies if Bob Lumley-Sapanski is not available.
- **Svend Pedersen** provides assistance with the recruitment of new graduate students.

EMERGENCY CONTACTS:

Please contact one of the following for facility, equipment or other emergencies:

- Bob Lumley-Sapanski
- Tom Dimick
- Kim Ripka

DEPARTMENTAL EXPECTATIONS OF GRADUATE STUDENTS

M.S. Students:

A student in the M.S. degree program will be knowledgeable about the field of food science in general. This knowledge will be acquired primarily through satisfactory completion of required coursework. Additionally, our students will develop the ability to learn independently by determining, finding, and using necessary resources. Our students will also develop the ability to make decisions and judgments based on their knowledge. Furthermore, the student will be capable of addressing a research problem through a series of sustained, logical experiments and bring his or her work to a satisfactory conclusion in the form of a M.S. thesis. Finally, it is expected that the thesis research will be of publishable quality and, as a minimum, will be communicated through at least one oral presentation or poster session at a scientific meeting.

Ph.D. Students:

In addition to the expectations described above for our M.S. students, a student in the Ph.D. degree program will develop the ability to determine and conceptualize a research problem, design the scientific approaches and experiments to address it, and bring his or her work to a satisfactory conclusion in the form of a Ph.D. dissertation. We further expect that upon graduation, the Ph.D. student will be an expert in the area of the thesis problem and will be well versed on related issues. Finally, it is expected that the dissertation research will be of publishable quality and, as a minimum, will be communicated through an oral presentation or poster session at a regional or national scientific meeting and through publication in at least one peer-reviewed journal.

PROCEDURES AND REGULATIONS FOR STUDENTS ENROLLED IN THE GRADUATE SCHOOL

A student is expected to assume full responsibility for knowing the regulations and pertinent procedures of the Graduate School as set forth in the Graduate Degree Programs bulletin and in the Thesis Guide, and for meeting the standards and requirements expressed by these regulations. Copies of the Graduate Bulletin are available from Kern Graduate Building; the Thesis Information Bulletin can be obtained from the Office of Theses and Publications, 115A Kern Graduate Building. Graduate students are encouraged to contact the Office of Graduate Enrollment Services, 114 Kern Graduate Building (Tel. 865-1795), for guidance if they have questions concerning any procedure or regulation of the Graduate School or any procedure or regulation of the University as it may affect them.

eLION COURSE REGISTRATION

The responsibility for registering each semester rests with the student. The student is expected to register each semester, via **eLion** (<https://elion.psu.edu/>), for either course work or thesis research, whether it is on or off campus. In the case of research, the number of credits shall be determined by the amount of time required for the investigation, 1 credit representing the equivalent of one week of full-time work. In the later stages of the program the situation will determine the requirements for the student's registration. Research credits cannot be added via **eLion** because FD SC 600 is under departmental control. Please send Juanita Wolfe (jmw5@psu.edu) an email asking her to add these credits for you.

Advisors - Advising is an important factor in enhancing the quality of a student's program. To assist the student in planning a coherent program and meeting all degree requirements, a member of the faculty should be identified to serve as advisor (Major Professor) prior to admission.

Time of Registration - A student is expected to complete registration, via eLion, during the designated period and to attend the first meeting of all classes. If this is impossible because of some emergency or unusual circumstance, the student may be granted permission by the instructor to miss a few class meetings, with the understanding that work missed will subsequently be made up by the student. Under these conditions, permission may be granted through the Office of Graduate Enrollment Services for the student to register late. In general, a student who receives permission to register late will be required to reduce the course load in proportion to the length of the absence.

A student who fails to complete the process of registration within the officially designated registration period will be liable for the late registration charge, regardless of when the student begins attending classes.

DROPPING/ADDING/AUDITING COURSES

If you are considering adding or dropping a course, there are many factors you will want to consider:

- Is there still time to drop or add a course?
- Will dropping a course affect my progress towards my degree?
- Will a change in my course schedule have financial implications?
- If an international student, will a change in my course schedule have an impact on my visa status? Remember, international graduate students must be registered full-time or for at least 9 credits in order to maintain their visa status during fall and spring semesters.

Penn State University maintains three periods relating to course drops: the pre-semester period, the add-drop period, and the late drop period.

1. The **pre-semester period** begins on the first day of scheduling and ends the day before the semester starts. While exceptional circumstances may necessitate the need to process schedule changes after classes begin, students are encouraged to finalize all schedule changes prior to the first day of the semester.
2. The **regular drop/add period** begins the day that your courses start, and is when dropping a course can be made without receiving a \$6 drop/add fee. Dropping a course during this time means that:
 - Length of drop period is ten days during fall/spring for full-semester courses and is a calculated proportional length for all other courses (see [eLion](#) "Course Drop Dates" application).
 - No signature(s) required.
 - **No fee**

Process of Regular Drop/Add Period:

1. On [eLion](#) using the "Drop/Add" application, or
 2. In person using a [Registration Drop/Add Form](#). Submit the form to the department offering the course, the [advising center](#) or the Registrar's office.
3. The **late drop period** starts the day after the regular drop period and before the late drop deadline, ([policy 34-89](#)). A student can drop a course with certain restrictions and requirements. They are:
 - No signature(s) required
 - \$6.00 fee for each transaction
 - Courses are recorded on the student record
 - Late drop credit limitations during academic career:
 - baccalaureate degree - 16 credits
 - associate degree - 10 credits
 - nondegree - 10 credits

Process of Late Course Drop/Add Period:

1. On [eLion](#) using the "Late Course Drop" application
2. In person using a [Registration Drop/Add Form](#). Submit the form to the department offering the course, the [advising center](#) or the Registrar's office.

Changing your overall number of credits after your course begins can have financial implications. Before making any registration changes consult with your academic adviser.

- When you are a full-time student and drop below full-time status, your overall number of credits changes. This can impact the tuition, fees, student aid, and refunds applied to your bursar account. Additionally, during the late drop period, the University assesses a \$6 per course processing fee for any course dropped or added. The tuition adjustment is determined by the effective date of the drop and is made according to Penn State's Tuition Adjustment Schedule. Visit the Tuition Adjustment Policy at: <http://www.bursar.psu.edu/adjustments.cfm#PENALTY>. If you are a full-time graduate student (i.e., 9 or more credits) who drops a course but still remains at full-time status, you will not

incur the same impacts on your bursar account, as the tuition rate is flat once full-time enrollment is reached.

- You will also want to investigate whether you are meeting the “Satisfactory Academic Progress” standards for federal financial aid programs when considering a course drop. Details about satisfactory academic progress is available at the [Office of Student Aid](#) website.
- During the pre-semester period, you can add and drop courses as many times as needed to create a suitable schedule without the same financial implications. Please be mindful to check your tuition bill for updates if you make changes to your schedule (especially adding credits) after you have already paid your tuition bill.

TUITION AND eBILL

Students must have activated their Penn State access account and have scheduled their classes before a fall tuition bill will be generated. Students will receive an e-mail message when their bill is available each semester. Tuition Bills for 2011/12 are due by the following dates:

- Fall 2011 – August 5, 2011
- Spring 2012 – December 9, 2011
- Summer 2012 – May 4, 2012

Although graduate students who are appointed on graduate assistantship or fellowship appointments during fall and/or spring semesters will receive a tuition waiver, they must indicate this through **eLion** by selecting “Request Changes to Bill” and entering the tuition amount they will receive (<https://elion.psu.edu/>). This must be done before registering for classes. If a bill is not filed, scheduled classes will be dropped from your schedule.

Continuity of Registration - A student who registers at University Park without interruption for each of the two semesters in the August-to-June interval, is considered to have maintained a normal continuity of registration.

Anyone who has interrupted such a normal sequence and now plans to register for course work at the University Park Campus is required to apply to the Office of Graduate Enrollment Services, 114 Kern Graduate Building, at least one month before the time of registration, for permission to resume study.

The policy may be summarized for any specific semesters or session as follows:

- Summer Session - Application required unless the student was registered at University Park for the preceding spring semester or the preceding summer session.
- Fall Semester - Application required unless the student was registered at University Park for the preceding summer session or the preceding spring semester.
- Spring Semester - Application required unless the student was registered at University Park for the preceding fall semester.

Procedure - For each registration, the student, in consultation with the advisor, prepares a schedule of courses and research designed to fit individual needs. The credit load will be reviewed at the time of registration. The registration process is completed in the manner specified for all students at the University. The student must assume responsibility for the registration process.

Under certain conditions credit may be earned for course work done away from the campus. A student contemplating such work should inquire at the Office of Graduate Enrollment Services about the procedures and conditions.

A student must register for courses audited as well as for those taken for credit.

ASSISTANTSHIPS

Graduate assistants are students, and graduate assistantships provide pedagogic experiences designed to make students better instructors, researchers and scholars. Thus, it is a general policy to assign graduate assistants largely scholarly tasks that will provide a useful and meaningful experience in their major field. Assistantships may require work in the classroom or the laboratory, in research, or in other areas on campus. Graduate students are not allowed to teach graduate level courses.

Eligibility

New appointments are contingent upon the student's admission to the Graduate School as a degree student (Note: While a department may offer a new student admission, the student must be officially approved by the Graduate School for admission.) All domestic graduate assistants must have received from a regionally accredited institution a baccalaureate degree earned under residence and credit conditions substantially equivalent to those required by The Pennsylvania State University and all international graduate assistants must hold the equivalent of an American four-year baccalaureate degree. Certain IUG students in simultaneous degree programs, approved by the Dean of the Graduate School, are also eligible. Nondegree students are not eligible for assistantship appointments.

Reappointment to an assistantship is based on availability of positions and the quality of the student's performance. In most departments or major programs the number of years an appointment may be renewed is limited. Unsatisfactory academic performance in any semester or summer session is sufficient cause for termination of the appointment at the end of that period. Unsatisfactory performance of assistantship duties is also sufficient cause for termination.

Appointments cover tuition and provide monthly stipend. Appointments are made at one of several grades in consideration of experience and qualification of the individual. Assistantships are of three types:

- **Quarter-Time** - The student normally schedules 9 to 14 credits per semester (5 to 7 per six-week summer session*), receives a stipend plus a grant-in-aid of resident education tuition, and performs tasks that on the average occupy approximately ten hours per week.
- **Half-Time** - The student normally schedules 9 to 12 credits per semester (4 to 6 per six-week summer session*), receives a stipend plus a grant-in-aid of resident education tuition, and performs tasks that on the average occupy approximately twenty hours per week.
- **Three-Quarter-Time** - The student normally schedules 6 to 8 credits per semester (3 to 4 per six-week summer session*), receives a stipend plus a grant-in-aid of resident education tuition, and performs tasks that on the average occupy approximately thirty hours per week.

A graduate assistant may accept concurrent employment outside the University only with permission from the department head and the assistant's graduate academic program chair. Concurrent employment normally may not be held within the University. A student may receive a concurrent fellowship supplement.

Graduate assistants must be enrolled at Penn State as graduate students. More specifically, since assistantships are provided as aids to completion of advanced degrees, assistants are expected to enroll for credit loads each semester that fall within the limits indicated in the table below. Maximum limits on permissible credit loads are indicated in order to assure that the student can give appropriate attention both to academic progress and assistantship responsibilities. These considerations give rise to the table of permissible credit loads below.

Level of Assistantship	Minimum Credits Per Semester	Maximum Credits Per Semester	Minimum* Credits Per 6-Week Summer Session	Maximum Credits Per 6-Week Summer Session
Quarter-time	9	14	5	7
Half-time	9	12	4	6
Three-quarter-time	6	8	3	4

*Credits taken over both 6-week summer sessions must total a minimum of 9 (1/4- and 1/2-time assistants) or 6 (3/4-time assistants) and cannot exceed a maximum of 8 (3/4-time assistants), 12 (1/2-time assistants), or 14 (1/4-time assistants).

To provide for some flexibility, moderate exceptions to the specified limits may be made in particular cases. The credit limits specified above may only be increased or decreased in exceptional cases for a specific semester or summer session by permission of the assistantship supervisor, the student's academic adviser, and the dean of the Graduate School (requests should be submitted for the dean's approval via the Office of Graduate Enrollment Services). The Graduate School expects that an exception made in one semester or summer session will be compensated for by a suitably modified credit load in the subsequent semester or summer session, so that, on the average, normal progress is maintained at a rate falling within the limits above. Failure to do so may jeopardize the student's academic status. Maintenance of the established credit loads and responsibility for consequences of a graduate student's change of course load rest with the student and adviser. The course load is a factor in determining whether a graduate student is classified as a full-time or part-time student; has met residence requirements; and is eligible to hold a fellowship, traineeship, assistantship, or departmental or program appointment.

SCHOLARSHIPS AND AWARDS

Every spring, the Department of Food Science and the College of Agricultural Sciences disburse scholarships and awards to graduate students planning to enroll during the fall and spring semester. All currently enrolled graduate students with a 3.0 GPA or better and who will be enrolled full-time during the Fall Semester 2011 are eligible for consideration. **To be considered for scholarships and awards, students must complete the following applications by April 30, 2012.**

- 1) The **Department of Food Science Application for Graduate Scholarship** (available in March/April 2012) – **due to Juanita Wolfe by April 30, 2012.**
- 2) The **College of Agricultural Sciences 2012 Scholarship Application form** (available on-line in January 2012 at <https://go.cas.psu.edu/schapp/apply.htm> - **submit electronically by April 30, 2012.** (Paper copy to Juanita Wolfe).
- 3) Scholarships and awards denoted above with an asterisk (*) require proven financial need as determined by the processing of **Free Application for Federal Student Aid-FAFSA**. Students are required to complete the FAFSA application available at <http://www.fafsa.ed.gov/>. To be eligible to complete this application, students must be one of the following: U.S. citizen, U.S. national (includes natives of American Samoa or Swain's Island), or, U.S. permanent resident who has an I-151, I-551, or I-551C (Permanent Resident Card).

The following awards for graduate students are available through the Department of Food Science:

John H. Hetrick Endowed Scholarship*
 William B. Roskam Memorial Scholarship*
 Fred and Florence Jacobson Scholarship*
 Star Kay White Scholarship*
 Frank and Nina Cobb Grant-in-Aid*
 Robert and Jeanne L. McCarthy Memorial Graduate Scholarship*
 Mars, Inc. Graduate Scholarship in Food Science*
 Ira A. Minter Memorial Scholarship
 L. Earl and Veronica Casida Graduate Fellowship in Microbial Food Safety
 Janet G. and Frank J. Dudek Graduate Scholarship in Food Science
 Donald V. Josephson & Stuart Patton Mentorship Award in Dairy and Food Science

A brief description of each scholarship is available at <http://agsci.psu.edu/students/scholarships/scholarships-by-major/food-science>

Announcements will be made in March/April of each year to all students and faculty seeking applications for the departmental scholarships. The applicants are evaluated on the basis of 4 major categories (GPA; Career goals, Research Interests, Statement on why be considered for Scholarship; Research presentations, publications, awards, honors; Extracurricular activities and service to the department, college, university, community and professional organizations).

GRADUATE CREDITS

Typically, a candidate for an advanced degree is required to earn a certain minimum number of credits at The Pennsylvania State University. Consequently, there is a limit to the number of credits that may be earned at another approved institution or through continuing education to meet the minimum requirements of the degree. Moreover, the department or committee in charge of a major program may require a student to do more of the work at the University than specified by the limitations set by the Graduate School.

Full-time participation in graduate study involves a wide range of activities. The nature of these activities varies because of the diversity of programs throughout the University. The graduate student is responsible for ascertaining, through his or her advisor and/or program office, the range of total activity of his or her individual program that constitutes normal progress toward the degree.

Graduate courses carry numbers from 500 to 599. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students.

ACADEMIC CREDITS

To provide flexibility in arranging credit loads for graduate assistants and full-time University staff members, a procedure has been set up whereby the normal credit limits may be changed by permission of the person to whom the student or staff member is responsible for University employment or assistantship assignment. Maintenance of the established credit loads and responsibility for consequences of a graduate student's load is a factor in determining whether a graduate student is classified as a full-time or part-time student; has met residence requirements; and is eligible to hold a fellowship, scholarship, assistantship, or departmental or program appointment. Students holding fellowships, traineeships, or other awards based on academic excellence are commonly required to carry 9 or more credits each semester. Students wishing to take more than 15 credits must be granted an exception on an individual basis through the Office of Graduate Enrollment Services.

Full-Time Academic Status - A student who in any semester is registered for 9 or more credits or who holds a quarter-time or half-time assistantship and schedules 9 or more credits or who holds a three-quarter-time assistantship and schedules 6 or more credits or who is enrolled in FD SC 601 is considered to be engaged in full-time academic work for that semester.

Part-Time Academic Status - A student who in any semester is registered for fewer than 9 credits and does not hold a three-quarter-time assistantship is considered to be engaged in part-time academic work for that semester.

Full-Time Employment Off Campus - A candidate for the Ph.D. degree may not count the work of any semester while engaged in full-time employment off campus toward the residence requirement for this degree.

TRANSFER CREDITS

Transfer of Graduate Courses from Penn State Undergraduate Transcript

In certain cases undergraduate students may subsequently apply credits they have earned in 400, 500, and 800 series courses toward an advanced degree at Penn State. After admission to the Graduate School, and with the approval of the major field, a maximum of nine (9) credits relevant to the graduate program of study that were not used to satisfy undergraduate requirements may be applied toward an advanced degree. The time limitation on the completion of a master's degree program applies to these as well as to other credits.

Forms for transfer of credit may be obtained from the graduate program.

Transfer of Credit from an External Institution

- A maximum of ten (10) credits of high-quality graduate work done at a regionally accredited institution or recognized degree-granting institution may be applied toward the requirements for a master's or doctoral degree. However, credits earned to complete a previous master's degree, whether at Penn State or elsewhere, may not be applied to a second master's or doctoral degree at Penn State.

- Approval to apply any transferred credits toward a degree program must be granted by the student's academic adviser, the program head or graduate officer, and the Graduate School.
- Transfer credits must meet the following criteria:
 - Must have been earned at a regionally accredited institution or a recognized degree-granting institution;
 - Must be of "A" or "B" grade value ("B-" grades are not acceptable; pass-fail grades are not transferable unless substantiated by the former institution as having at least "B" quality);
 - Must appear on an official graduate transcript;
 - Must be earned within the five years prior to the date of registration to a degree program at Penn State.
- If transferring credits from a university/college that is on quarter hours, you must convert the quarter hours to semester hours. In order to convert quarter hours credit to equivalent semester hours credit, multiply the number of quarter hours by two-thirds.

Forms for transfer of credit may be obtained from the graduate program.

Transfer of Nondegree Graduate Credits

Approval to apply nondegree graduate credits toward a degree program must be granted by the student's academic adviser, the program head or graduate officer, and the Graduate School. A maximum of 15 credits earned as a nondegree student may be applied to a degree program.

- The credits must have been earned within five years preceding entry into the degree program. Requests to transfer graduate work taken more than five years prior to admission into a graduate degree program must be accompanied by a letter justifying the validity of the course work.
- Only 400, 500 and 800-level graduate courses may be transferred.
- Any courses taken by a graduate student in non-degree status that are not transferred into the degree program (as requested by the student and approved by the graduate program) will be coded as "credits not applied toward the degree" (NDC) and, therefore, will not count in the total credits earned towards the degree and the degree grade-point average. (Revised by Graduate Council, December 2010; implemented, Fall 2011.)
- Only A, B, and C grades will be transferred. D and F grades will be marked "NDC."

Forms for transfer of credit may be obtained from the graduate program.

GRADING SYSTEM

Grades shall be assigned to individual students on the basis of the instructor's judgment of the student's scholastic achievement using the grading system below:

Undergraduate and Graduate Grading System

Quality of Performance		Grade	Grade Point Equivalent
Excellent	Exceptional Achievement	A	4.00
		A-	3.67
Good	Extensive Achievement	B+	3.33
		B	3.00
		B-	2.67
		C+	2.33
Satisfactory	Acceptable Achievement	C	2.00
		D	1.00
Failure	Inadequate Achievement	F	0.00

(To secure credit, course must be repeated.)

Other Grading Symbols

Quality of Performance	Grade
Audit	AU
Credit by Examination	CRX
Deferred	DF
Fail	FL
Incomplete Average	INCP/I
Not Degree Credit	NDC
No Grade Reported	NG
Pass	P/PS
Research	R
Proficiency Exam Passed	S
Satisfactory	SA
Unsatisfactory	UN
Withdrawal	W
Late Drop, Failing	WF
Late Drop, No Grade Reported	WN
Late Drop, Passing	WP
Fail, Academic Dishonesty	XF

At the 400, 500, and 600 levels, grades of A, B, and C denote graduate credit, whereas D and F are failing grades for graduate students, D being the normal failing grade. A grade of F indicates doubt in the judgment of the instructor of the student's potential for further graduate study.

A minimum grade-point average of 3.00 for work done at the University is required for graduation.

In addition to the grades listed on the previous page, two symbols, DF (deferred) and R may appear on a student's transcript. If work is incomplete at the end of a semester for a reason beyond the student's control, or if very little work remains to be done, the instructor may report DF in place of a grade, which will appear temporarily on the student's record. The deferral must be removed within nine weeks of the beginning of the succeeding semester, unless a special extension is granted by the director of the Office of Graduate Enrollment Services. If the work is completed within the specified period of deferral, and the instructor does not report a passing grade, the graduate recorder automatically records a failing grade after duly notifying the department head or program chairman to that effect. No student may be approved for a degree while a grade deferral for a required course remains on the record. Deferred grade cards may be obtained from the graduate recorder, 112 Shields Building.

UNSATISFACTORY SCHOLARSHIP

A graduate student who fails to maintain satisfactory scholarship or to make acceptable progress in a degree program may be dropped from the University. One or more failing grades or a cumulative grade-point average below 3.00 for any semester or session or combination of semesters and/or sessions may be considered as evidence of failure to maintain satisfactory scholarship. Action may be initiated by the department or committee in charge of the graduate major or by the chair of the student's committee. The procedures to be followed in such action are found in Appendix III of the Graduate Degree Program Bulletin

SCHOLARSHIP AND RESEARCH INTEGRITY (SARI)

As research has become more complex, more collaborative, and more costly, issues of research ethics have become similarly complex, extensive, and important. The education of graduate students at Penn State must prepare students to face these issues in their professional lives. The SARI (Scholarship and Research Integrity) program at Penn State is designed to offer graduate students comprehensive, multilevel training in the responsible conduct of research (RCR), in a way that is tailored to address the issues faced by students in individual programs.

Based on guidance provided by the Council of Graduate Schools in a report entitled "Graduate Education for the Responsible Conduct of Research," the SARI model includes both interdisciplinary and program-specific RCR content.

The SARI program has two parts:

1. During the first year of enrollment, graduate students will be required to complete an online RCR training program provided by the Collaborative Institutional Training Initiative (CITI). The Office for Research Protections (ORP) will provide the conduit to this training via the [SARI Resource Portal](http://www.research.psu.edu/orp/sari) on the ORP website (www.research.psu.edu/orp/sari).
2. Graduate students are required to engage in an additional 5 hours of discussion-based RCR education prior to degree completion. These discussions will encompass both universal and discipline-specific material. Each college has developed a unique plan for how graduate students in their programs will meet the requirements for discussion-based RCR education.

INTERNATIONAL STUDENTS

In order for international students with student visas to maintain their visa status through Penn State, they must meet several obligations which are listed in detail on the Office of Global Programs website at: http://www.global.psu.edu/international_students/current_students.cfm.

Regardless of whether the international student is receiving or appointed on a graduate assistantship, they must:

1. **Maintain full-time academic status**. Graduate students will enroll for variable credits up to fifteen (15), with nine (9) credits being the minimum required to fulfill DHS visa requirements for full-time enrollment. Graduate students beginning in summer must be registered for 5 credits in summer unless they have a 1/2-time assistantship which requires only 4 credits.

Exceptions to full-time study must be approved by their faculty advisor and department **in advance** by completing the [Request for Less Than Full-Time Enrollment Form](#), signed by their faculty advisor and submitted to their International Student Adviser at University Office of Global Programs, 410 Boucke Building. All exceptions granted by the International Student Adviser must be reported to DHS within 21 days as well as the return to full-time status. Note: Exceptions to full-time study due to academic difficulties are limited to one semester during the entire program of study; documented medical illnesses are limited to one year during the program of study. Failure to enroll for full-time study or to obtain approval from the International Student Adviser in advance is automatically out-of-status.

CREDIT LOADS FOR INTERNATIONALS

The Department of Homeland Security requires that international students proceed in a timely fashion toward completion of their degrees, as established by the academic department and (usually) stated on their initial immigration document. Failure to maintain normal progress toward completion of the degree during this period will jeopardize the student's ability to continue academic study, adjust status, or seek future employment in the United States. Because of this, students should not be enrolled less than full-time during fall or spring semester without approval of International Student Services (ISS).

The U.S. Department of Homeland Security requires the ISS to report violations of status, including failure to maintain full-time enrollment. The following is intended to provide guidance for international graduate students and for ISS in determining full-time status:

- A graduate student is considered full-time if registered for a minimum of 9 credits, excluding courses taken for audit, or if a Ph.D. candidate who has successfully completed the comprehensive examination and is registered for SUBJ 601.
 - On rare occasions, and under exceptional circumstances, international students in master's degree programs who have completed all required course work and, if applicable, research for their degree, may be granted an exception to the need to maintain full-time status as defined above, for a limited period (in no case to exceed two semesters), by special petition to ISS in advance of the semester in which the exception is needed. This request must be accompanied by a letter from the chair of the graduate program in which the student is enrolled verifying that all course and any research requirements have been completed, and indicating support for the request. ISS may consult with the Office of the Dean of the Graduate School in determining whether specific requests are appropriate and justified.
 - Under all circumstances, international students must maintain registration for at least 1 credit as stipulated earlier in this bulletin. (See Academic Information and Procedures/International Students.)
2. **Maintain Penn State's mandatory health insurance requirement for student and all dependents.** If you are an international student (graduate students, graduate assistants and graduate fellows) with an "F" or a "J" visa sponsored by Penn State, you and any accompanying dependents (spouse and/or children) are **required** to have a health insurance plan that meets the minimum requirements established by the University. Please refer to University Health Services section below for more information on insurance coverage and premium rates.

AMERICAN ENGLISH ORAL COMMUNICATIVE PROFICIENCY TEST (AEOCPT)

All international students who have been offered teaching assistantships and graderships which involve internation with undergraduate students are required to have passed the American English Oral Communicative Proficiency Test (AEOCPT), as a result of a State law and Penn State Faculty Senate Legislation. This test is administered before the semester begins by the Department of Applied Linguistics (http://aplng.la.psu.edu/academicPrograms/ita_whatIsAEOCPT.shtml). All international graduate students offered teaching assistantships must take and pass this test. **Since all Food Science MS and Ph.D. students are required to serve as teaching assistants, it is the responsibility of new international students to satisfactorily complete the AEOCPT test.**

UNIVERSITY HEALTH SERVICES

The University Health Service is located in the new Student Health Center which is adjacent to the Eisenhower Parking Deck and the Bank of America Career Services Building off Bigler Road. This facility is the core of the health service activities and is primarily an ambulatory-care center with 60 exam rooms. Its facilities are available to all students, including graduate students at all levels of training.

HEALTH INSURANCE

As a Graduate Assistant or Graduate Fellow, you are eligible to receive subsidies in the amount of 80% of the annual premium cost for the Graduate Assistant and Graduate Fellow medical, dental and vision plans for you and any eligible dependents you want to cover. The university will pay this amount directly to the insurance companies and will deduct your 20% contribution to premium expense from your monthly paycheck.

Your insurance subsidies for your eligible dependents is 70% of the annual premium expense. As with the subsidy for your individual insurances, the university will pay 70% of the premium expense directly to the insurance companies and you will pay your 30% of the premium costs through a payroll deduction. Please refer to the Medical, Dental and Vision – Monthly Payroll Deductions Premium Subsidy tables online at: <http://studentaffairs.psu.edu/health/services/insurance/graduate.shtml>.

If you are an international student (graduate students, graduate assistants and graduate fellows) with an "F" or a "J" visa sponsored by Penn State, you and any accompanying dependents (spouse and/or children) are **required** to have a health insurance plan that meets the minimum requirements established by the University.

For more details of the plan and coverage, please refer to the “**Graduate Assistant and Graduate Fellow Health Insurance Plan, 2011-12**” brochure at:

http://studentaffairs.psu.edu/health/services/insurance/pdf/547_4_Brochure.pdf.

Fall and Spring Appointments:

If you have received a Graduate Assistant and Graduate Fellow appointment both fall and spring semesters and you are enrolled in the plan, health insurance coverage dates for you and/or any enrolled dependents are: August 10, 2011 to August 9, 2012. There will be nine monthly (September – May) payroll deductions for you (and for your dependents, if you have dependents enrolled).

Fall Semester Only:

If your Graduate Assistantship or fellowship appointment ends in December or you graduate in December, your health insurance coverage will begin on August 10, 2011 and expires at 11:59 p.m., December 31, 2011.

Spring Semester Only:

If you have received a Graduate Assistant or fellowship appointment for spring semester, health insurance coverage dates for you and/or any eligible dependents will begin on January 1, 2012 and expires at 11:59 a.m. on August 9, 2012.

Declination of Insurance:

If you do not wish to be enrolled in the Graduate Assistant and Graduate Fellow Plan, you must sign a Declination of Insurance form indicating that you wish to decline the benefit for yourself. If starting fall 2011, you must complete and submit this form no later than **September 6, 2011**, otherwise, you will be automatically enrolled on the Graduate Assistant and Graduate Fellow Plan and you will receive monthly payroll deductions. If starting spring 2012, the deadline to submit the form is no later than **January 23, 2012**. The form is online at: <http://studentaffairs.psu.edu/health/myUHS/>.

International students who already has a health insurance plan that meets the Waiver Standards and do not wish to be enrolled in the Graduate Assistant and Graduate Fellow Health Insurance Plan, must show proof of an alternate health insurance plan and submit a Waiver Application Form before **September 6, 2011** (or **January 23, 2012** for spring appointment start dates). The Waiver Application Forms are available at the Student Health Insurance, 302 Student Health Center, 814-865-7467 or online at:

- **Fall 2011 Waiver Form:** http://studentaffairs.psu.edu/health/services/insurance/pdf/health_wvr_fall.pdf.
- **Spring 2012 Waiver Form:** http://studentaffairs.psu.edu/health/services/insurance/pdf/health_wvr_spring.pdf.

For more information on the University Health Service, visit their website <http://www.sa.psu.edu/uhs/>.

ACADEMIC INTEGRITY

The University does not tolerate violations of academic integrity, which include but are not limited to: plagiarism, cheating, falsification of information, misrepresentation or deception.

Plagiarism

Plagiarism is often a confusing concept. At Penn State, plagiarism means taking someone’s words and presenting them as your own. Cutting and pasting from a web site is considered plagiarism. Copying verbatim from any source without using quotation marks and the full reference is plagiarism. Plagiarism is a serious violation of academic integrity regardless of whether it is a homework exercise, an exam, a thesis, or a manuscript for publication.

Please refer to the College of Agriculture’s policy on Academic Integrity, Plagiarism and sanctions for abuse at: <http://aqsci.psu.edu/students/resources/academic-integrity>.

GRADUATE STUDENT ASSOCIATION

The Graduate Student Association (GSA) was established in 1951 as the representative body for graduate students, all of who are automatically members, and is charged with designating graduate student representatives to a number of committees throughout the University. This volunteer organization provides

services, programs, social activities, and student advocacy on pertinent issues. To help defray expenses, the association is partially funded through an allocation from the Student Organization Budget committee.

The Graduate Student Association Assembly, the legislative arm of the association, consists of elected delegates from every graduate department, with voting rights proportionate to the number of students in the department. Members of the Assembly are required to sit on a committee in one of the four working divisions: Academics and Issues, Finance and Fund raising, Programming and Services, and Publicity and Publications. Any student, graduate or undergraduate, is welcome to serve on any of GSA's standing committees: Social, Happy Hours, Orientation, Teaching Assistant Issues, Newsletter, Tax, Explazaganza, Garden Plots, Guide to Grad Life, and Health. Often, an ad hoc committee is formed to address a particular issue.

The association maintains communication among its members through its monthly newsletter, the campus daily newspaper, scheduled meetings, and informal use of the Graduate Commons. It publishes annually the Guide to Graduate Life, an informal introduction to both the University and the community.

The Graduate Student Association office is at 312 HUB (Hetzl Union Building), 814-865-4211. Graduate students are encouraged to bring any questions or suggestions about graduate life to the office.

FOOD SCIENCE GRADUATE STUDENT REPRESENTATIVES

The Food Science program graduate student body elects two M.S. students and two Ph.D. students to serve a one-year term as Graduate Student Representatives. The graduate student representatives shall strive to promote and maintain goodwill and professionalism among the graduate students, faculty and GSA. They will actively pursue and advocate the concerns of all graduate students and work diligently for the betterment of the graduate student program and graduate life.

The Graduate Student Representatives shall be required:

- A. To serve as a liaison to the faculty, the GSA and the Department Head on behalf of the graduate student body;
- B. To meet with all graduate students at least once a semester in order to provide a forum for students to express their concerns and opinions;
- C. To represent the graduate students at faculty and GSA meetings;
- D. To maintain the graduate student bulletin board.

List of Current Graduate Student Representatives

Samantha Bennett (MS) – smb5825@psu.edu

Zachary Bitzer (PhD) – ztb5029@psu.edu

Josh Scheinberg (MS) – jas6387@psu.edu

Lisa Zhou (PhD) – lxz153@psu.edu

FOOD SCIENCE CLUB

The Food Science Club is a student-based group composed of both undergraduate and graduate members in Food Science. Meetings are usually held on Mondays in room 252 Food Science Building with a dinner social preceding in the Keeney Commons. Club business and activities are discussed; meetings also feature guest lecturers and presentations from food companies.

The Club promotes interaction between Food Science students, Food Science faculty, and the food industry by supporting various events throughout the year.

Professional opportunities such as information on career placement, networking workshops, food company tours (Food Industry Day), IFT meetings, College Bowl, and Product Development are some of the many activities the club sponsors.

The club also hosts fun social activities, including the annual Food Science Tailgate, scooping ice cream at Harvestfest in DelGrosso's Amusement Park, leisurely trips to New York City, holiday dinners, and sporting events. These activities allow students to get to know each other and form friendships outside the classroom.

There are plenty of opportunities for involvement. Volunteers help with Adopt-a-Highway, social events planning, publicity, club apparel, and IFT Student Chapter of the Year. The club welcomes any food science student to participate and introduce any new ideas they might have.

For more information, visit their website at: <http://foodscience.psu.edu/currentstudents/activities/food-science-club>.

INTERNSHIP AND JOB PLACEMENT ACTIVITIES

The Department and its faculty are often contacted by food companies and personnel recruiters for meeting the professional needs in the industry. The Department also receives a number of position announcements from various governmental agencies and Universities. These job opportunities are regularly posted and communicated to students by electronic mail. Many companies conduct interviews within the department while others conduct interviews at the Career Services Center (101 Bank of America Career Service Center).

GENERAL ADMINISTRATIVE PROCEDURES

BUILDING ACCESS & KEYS:

With faculty advisor approval, graduate students will be issued Card Access to the outside entrances of the Food Science Building and/or keys to his or her office and laboratories that are used regularly in his/her research. Upon arrival, graduate students will receive a completed "Individual Key Request" form that students will take to Room 115 Ag. Administration Building to receive their office and lab keys. The College requires a **\$5 key deposit** per key at the time keys are picked-up from 115 Ag. Admin.

The Food Science Building has a Card Access system using the **PSU ID+** card for exterior doors (east and west), the elevator near the Creamery salesroom, the Pilot Plants (134, 135, and 416) and the Chemistry Teaching Lab (132) as follows:

- **Exterior Doors** - To access the building at night (after 6:00 p.m.) and on weekends, faculty, staff and students need to use their PSU ID+ card on the card swipes located on the east and west entrances. The card swipe will not open any creamery doors or the door near the loading dock.
- **Creamery Elevator** – The West elevator near the creamery is open during the day and can be used from the 1st floor. However, during nights and weekends, in order to call the elevator from the 1st floor, you must use the Elevator Card Swipe.
- **Pilot Plants, Rooms 134, 135** - To gain access to the Pilot Plants through the Card Access system, students must first arrange to complete Pilot Plant safety training through Bob Lumley-Sapanski. After training has been completed, students will be added to specific Pilot Plant Card Access systems.
- **Food Chemistry Teaching Lab, Room 132** – Teaching assistants are permitted card access to the Chemistry Teaching Lab.

In addition to building card access, office and lab keys, graduate students are permitted to have a **GS** key which will open designated shared facilities.

ALL KEYS must be returned to 115 Ag. Admin. before graduating and/or leaving the Department of Food Science and/or Penn State. A cash Key Refund will be issued upon returning keys to 115 Ag. Admin. If keys are lost or stolen, there is a \$10 per key replacement fee (non-refundable). Please see Kim Ripka for key requests.

PRINTING & COPYING:

The department leases three photocopier machines located in Rooms 210, 301 and in the fourth floor hallway between Rooms 439 and 441. Access is restricted to Food Science faculty, staff, graduate students, post-docs, and visiting scholars through individualized copy codes. Copy codes are not to be shared nor are the copiers available for use by individuals in other departments, undergraduate students, or visitors.

The Department of Food Science is making every effort to reduce excessive copying in coordination with Penn State's **Green** initiatives. As a result, all copiers are automatically set to **double-sided** copying. If you

choose to change the setting, press the highlighted 1 to 2 sided button on the control panel. In addition, we are going to be closely monitoring monthly usage on a regular basis.

We encourage faculty, staff and students to take advantage of the scanning feature which is free. Scanning allows documents to be sent to your e-mail (or other e-mail addresses) where it can then be stored on a computer. The copiers can scan both color and black-and-white images. All departmental e-mail addresses have been pre-programmed into the copiers for your convenience.

Graduate students will be provided with 250 pages of free copying each semester for their funded research activities at the discretion of their faculty advisor (scanning documents is free and unlimited). Faculty accounts will be charged at .03 for students who exceed the 250 page limit. Students who are assigned to be teaching assistants will be provided with a separate account for photocopying quizzes, exams, etc. All graduate students must ensure that any charges to departmental and research budgets are for those purposes. No personal printing should be charged to these accounts such as copying graduate thesis documents, resumes, dossiers, or other personal documents.

Below are features available on each of the copiers:

Ricoh Aficio Copier Features	210	301	4th Floor
Automatic document feeder	X	X	X
Unlimited Duplexing (double-sided)	X	X	X
Reduction/Enlargement	X	X	X
Sort/Staple	X	X	X
Fax option	X	X	
Postscript printing included	X	X	X
Scanning – Color and Black & White	X	X	X

In addition, students are allocated 110 subsidized sheets each semester, paid for by the University's **Information Technology fee**. Pricing, locations and instructions on how to purchase more sheets is available online at: <http://clc.its.psu.edu/Printing/>.

MAIL AND PACKAGES:

INCOMING MAIL & PACKAGES:

- Campus and U.S. postal mail:
 - Mail is delivered to Room 204 twice a day: 8:30 a.m. and 12:30 p.m.
 - Mail is sorted by a designated staff member into the faculty, staff and faculty lab mailboxes located in Room 204.
 - Mail can be picked up between 8:00 a.m. – 5:00 p.m. from inside Room 204 and after 5:00 p.m. from outside Room 204 by using the mailbox combination locks.
- Packages:
 - Packages that are delivered and received from FedEx, UPS and other carriers usually arrive between 11:00-3:00 p.m. at various intervals.
 - As soon as packages arrive, they are logged into a Package Delivery Log Book and kept in Room 204 until pick-up. An e-mail will be sent to the faculty, staff and students to inform them when a package has arrived.
 - Packages should be picked up promptly or by the end of the day, if possible, to free up mailroom space for additional incoming package deliveries.
- Freight Shipments:
 - Please notify Bob Lumley-Sapanski, or others in the main office, if you are expecting shipments or pick-ups from a freight carrier. This includes large pieces of equipment or bulk

quantities of supplies so arrangements can be made with Central Distribution (<http://www.centraldistribution.psu.edu/faqs.shtml>).

- **NOTE: When placing orders from vendors, please make sure to provide them with the following information for the Delivery Address:**

YOUR CONTACT NAME
DEPARTMENT OF FOOD SCIENCE
PENN STATE UNIVERSITY
202 FOOD SCIENCE BUILDING
UNIVERSITY PARK, PA 16802

OUTGOING MAIL & PACKAGES:

- Campus and U.S. postal mail:
 - Mail is picked up from Room 204 twice a day: 8:30 a.m. and 12:30 p.m. The University processes outbound mail for delivery to the U.S. Post Office daily; however, mail must be received by the following cut-off times in order to go out the same day:

1. UPS	3:30 PM
2. Commonwealth Campuses	3:30 PM
3. UPS Express	4:30 PM
4. Express Mail	3:30 PM

If you have First-Class mail that must go out and you have missed the mail pick up time above, you may take your mail to Hostetter Business Services Building and they will do their best to send it out the same day.
 - All outgoing campus and personal U.S. mail (with stamps) can be placed either in the Mail slot outside Room 204 or in the white mail bin located on the floor of Room 204.
 - Refer to the University's guidelines for addressing USPS mail and campus mail at: <http://www.multimediaprint.psu.edu/addressing/addressguide.shtml#USPS>.
 - All outgoing University-paid U.S. mail and Packages must have a Metered Mail Card attached to it that provides the Budget and Fund where the postage is to be charged to.
 - Metered Mail Cards can be found online at: https://www.absecom.psu.edu/DOC_MAIL_FORMS/MENU_WIN.CFM. Be sure to correctly list budget/fund on the Metered Mail Cards. Forms are also available in Room 204 in the last column of mail cubicles.

NOTE: Postage may not be charged to grants & contracts without prior permission by completing the "Cost Accounting Justification Form" available from GURU at: <https://guru.psu.edu/forms/CostAccount1Admin.pdf>.
- Packages:
 - Return orders and other outgoing packages should be properly packaged by the sender with correct return/mailing address information, return authorization codes, etc.
 - Metered Mail forms for outgoing "UPS" packages can be found online at: https://www.absecom.psu.edu/DOC_MAIL_FORMS/MENU_WIN.CFM.
 - The University contracts with UPS for package deliveries but not with other carriers. If packages are to be sent by another carrier (i.e., FedEx, etc.), then it has to be taken to the nearest location.
 - **NOTE: There are special guidelines for shipping chemicals, items packaged on dry ice, and/or pathogens. Please consult the Environmental Health & Safety website for information at: <http://www.ehs.psu.edu/commonwealth/index.cfm>.**

NOTE: If you are sending chemicals, pathogens or other materials as part of a research project via Fed Ex or some other carrier, you must complete the "Cost Accounting Justification Form" in advance. The form is available from GURU at: <https://guru.psu.edu/forms/CostAccount1Admin.pdf>.
- Freight Shipments:

- The University's Central Distribution Services will assist Departments with outbound freight shipments through one of Penn State's contracted carriers on request for both domestic and international shipments. The Penn State carriers are Ward Trucking or Yellow.
- They will assist with packaging (limited to paper wadding and cushioning within cardboard containers and address labeling). They do not crate material.
- The department must fill out all required information on the Pick-Up and Shipping Request Form located at: http://www.centraldistribution.psu.edu/shipping_guidelines.shtml.

FACILITIES:

PENN STATE COMPUTER FACILITIES

The Student Computing Labs at University Park are available to faculty, staff, and students. The labs enable users to perform general computing tasks, such as word processing, email, and Internet surfing, as well as more advanced computing required for course work and research.

There are over 50 labs on campus, as well as over 1000 mobile computing ports that provide users with workstations and peripherals for Windows, Macintosh, and Unix platforms. The labs are equipped with printers and scanners, as well as more specialized hardware such as digital cameras and CD burners.

Each lab machine has a basic software configuration on the desktop, with a more comprehensive software grouping available in the workstation's programs list. To find out more about the computer facilities, visit the ITS website. <http://clc.its.psu.edu/labs> or contact their Help Desk (863-1035 or 863-2494) or email helpdesk@psu.edu. Help Desk hours vary depending on location but generally are open Monday - Friday during normal working hours.

For additional computing information, contact ITS at <http://its.psu.edu/students/>

FOOD SCIENCE DEPARTMENT GRADUATE STUDENT COMPUTER FACILITIES

A small computer lab is available in Room 422 Food Science Building. The lab is equipped with Windows computers and laser printing is available from all of the computers. This lab is available **only** to graduate students registered in the Food Science major. The lab is available on a 24 hour first-come, first-served basis. The door to the computer facility should remain locked at all times. Any problems with equipment in this lab should be reported immediately to Tom Dimick (tsd3@psu.edu) or a Graduate Representative (see p. 8).

Printing in the computer lab should be limited to several pages at a time. Faculty advisors are responsible to provide printing services for their students in their designated labs and graduate student areas. Software available on the computers may not be the same version or the same software that is available in the Penn State Student Computing Labs. The software available includes: Microsoft Office 2007, Adobe Acrobat, Statistical applications (Minitab, SPSS, and SAS) and Virus protection.

The computer lab may periodically be scheduled for class assignments during the semester. Notices will be posted announcing any schedule changes.

PENN STATE PURCHASING POLICIES:

Penn State's Purchasing process is complex and has changed over the last decade. Provided below is a summary of the purchasing tools and systems available. However, this is not a comprehensive list of all purchasing policies and procedures. As always, when in doubt please contact either Greg Davidson or Kim Ripka for assistance. Questions regarding which system to use may also be answered by consulting the Decision Matrix available at:

<http://www.controller.psu.edu/divisions/FinancialOfficers/docs/SRFCvsPOMatrixEffective7-1-2011.pdf>

EXTERNAL OR ONLINE PURCHASING PROCESSES

Petty Cash*	Purchasing Card*	eBuy+	Employee Reimbursement System (ERS)
For purchases less than \$50 from local vendors.	Penn State VISA card used for University purchase of: <ul style="list-style-type: none"> • Goods & Services up to \$2,000 • Travel expenses up to \$3,000 	A University online system used to place orders through: <ul style="list-style-type: none"> • Catalog shopping • Non-Catalog shopping www.ebuy.psu.edu	A University online system used to: <ul style="list-style-type: none"> • Book online airfare/hotel reservations • Submit travel reimbursements. www.ers.psu.edu
<ul style="list-style-type: none"> • Need itemized receipt. • After making purchase, complete "Petty Cash" form. • Submit form and receipt to Greg. 	<ul style="list-style-type: none"> • Orders for Goods & Services must be less than \$2,000 per vendor per day. • Orders over \$2,000 cannot be split but must be processed through eBuy+. • Purchasing Card Receipts must be submitted to Greg Davidson within 30 days from purchase. 	Catalog shopping is through one of Penn State's contracted external vendors such as: <ul style="list-style-type: none"> • Apple & Dell • VWR • Sigma-Aldrich • Fisher-Scientific • Grainger • Newark, and more 	Traveler must: <ul style="list-style-type: none"> • Keep all travel receipts • complete a paper "Travel Support Form" • Submit "Travel Support Form" and receipts to Greg Davidson. • Assign Greg as their ERS Delegate
Typically used in emergencies.	Graduate students may have access with approval from their faculty advisor.	Non-Catalog or Purchase Order shopping is placing an order with any external vendor.	Greg will: <ul style="list-style-type: none"> • Enter information into the ERS system. • Upload receipts.
Vendor is not to charge PA State Sales tax.	Students must successfully complete the online tutorial at: http://www.purchasing.psu.edu/purchasingcard/gettingacard.shtml	Orders over your authorized spending limit will automatically follow the approval paths.	After Greg has entered the form and receipts, the Traveler will receive an e-mail notification to 'submit' or approve the form for processing.
	Once test has been successfully completed, Greg will receive notification. Purchasing card will arrive within 2-3 weeks from bank.	Graduate students may have access with approval from their faculty advisor. Faculty advisor needs to notify Greg Davidson to request access for their graduate student(s).	Travel reimbursements will be automatically deposited into Traveler's bank account within 1-2 weeks of processing form.

***NOTE:** Penn State is exempt from sales tax. Please inform vendors before making purchases to deduct the sales tax. Tax Exempt forms: <http://www.purchasing.psu.edu/taxexempt.shtml>.

INTERNAL PURCHASING PROCESSES

Inter-Departmental Transfer (IDCC)	Special Request for Check (SRFC)	General Stores Gas Cylinder Rental	Chemistry Stockroom	Fleet Vehicle
An electronic IBIS form used to purchase services rendered by on campus or other Penn State departments and units.	An electronic IBIS form used for payment of: <ul style="list-style-type: none"> • Foreign checks • Professional Services • Honorarium • Memberships • Registration fees • Books, periodicals • Page Charges • Equipment Rental • Short-term facility rental 	Compressed gases are ordered through Penn State's General Stores at: www.generalstores.psu.edu and selecting "Cylinder Gas Online Ordering". Gas cylinder rentals are directly billed to a Penn State budget/fund at the end of each month.	Provides chemicals, glassware and equipment used in research and undergraduate courses. The stockroom is located at 125 Chemistry Building.	Fleet Services rents a wide range of vehicles for business use. To rent a vehicle, drivers must: <ul style="list-style-type: none"> • Be at least 21 years of age; • Have a valid driver's license • Be an employee
Examples: <ul style="list-style-type: none"> • Materials Research Lab • Huck Institute of the Life Sciences • Engineering Copy Center • Creamery 	To request a Special Request for Check, complete a Purchasing form and submit it to Greg Davidson with back-up documentation.	The following budget information is required to direct bill: <ul style="list-style-type: none"> • Budget number • Fund number • Project number (faculty initials) • Delivery Address – Room number and Building name • Your name (contact name), e-mail, telephone and order date 	The following budget information is required to direct bill: <ul style="list-style-type: none"> • Budget number • Fund number • Project number (faculty initials) • Address – Room number and Building name • Your name (contact name), e-mail, telephone and order date 	Those with eBuy access can make online reservations at: http://www.transportation.psu.edu/fleet/rent/ . A valid budget and fund number is needed to make an online reservation.
		IMPORTANT: It is the student's responsibility to track cylinders internally in case a cylinder is lost. Keep all receipts.		

PENN STATE TRAVEL POLICIES:

Penn State's Purchasing process is complex and has changed over the last decade. Provided below is a summary of the policies. When in doubt, please contact either Greg Davidson or Kim Ripka. Additional policy information is available on the department's intranet site as well as Travel Services website at: www.travel.psu.edu.

Employee and non-employee travel expenses that are to be charged to a University budget/fund can be paid for in one of the following ways:

- **Purchasing Card** – Can be used for transportation, meals and lodging and to prepay conference registrations. NOTE: The Purchasing Card may not be used to pay for membership fees.
- **DBAF (Direct Bill for Air Fare)** – The DBAF function is an internal billing process that permits air fare to be directly charged to a University budget if the reservation is booked with one of Penn State's contracted travel agencies listed at: <http://www.travel.psu.edu/contactus.shtml>. It cannot be used with any other booking source.
- **Personal Funds** – Employees may choose to incur all or part of the travel expenses on a personal credit card and then request reimbursement upon completion of the trip.

Air Fare Changes:

- Air fare is to be purchased at the lowest available commercial economy fare that meets the business purpose of the trip and can be booked through the following options:
 - A. **Booking Air Fare with a Designated Travel Source** – Penn State employees have several options for making air reservations which are listed below (also see: <http://travel.psu.edu/airrail.shtml>)
 - Travel onLion – the online booking system
 - Contact Travel Services
 - Contact one of Penn State's contract Travel agencies
 - [With either of these choices, a price itinerary showing where the air fare was purchase, dates, and price needs to be submitted with the Travel Worksheet upon completion of the trip.](#)
 - B. **Booking Air Fare with a Non-Designated Travel Source** – University employees are permitted to purchase the lowest air fare available from other sources if a lower cost is found.
 - [Travelers will need to submit printed same-day documentation to verify that the price obtained was lower than the price available through one of the above authorized travel sources at the actual time of purchase especially if charging the air fare to a Federal or Federal pass-through fund and/or amount is over \\$1,000.](#)
 - [The use of nondesignated travel sources is discouraged unless the available savings are truly significant.](#)
- Air fare purchased through any of the above obtains may be charged to a Penn State Purchasing Card provided sufficient documentation is obtained.

Required Receipts:

- **Lodging** – must be an original, itemized receipt
- **Air fare** – a priced itinerary showing where the air fare was purchased
- **Vehicle rental** – receipts from National Car Rental or Enterprise
- **Rail**
- **Business Group meals** – Itemized receipts are required. The cost incurred for business group meals must be prudent, reasonable, and in the best interest of the University. The College does not reimburse for employee-only group meals which consists of faculty, staff and graduate students dining together.
- **Conference Registration** – If paid from personal funds, must have an original receipt for registration fees over \$50 and should be listed under the "Out-of-Pocket" expense column on the Travel Worksheet. If registration was charged to Purchasing Card, it should be listed under the "P-Card" column on the Travel Worksheet (receipt submitted with P-Card form).
- **Parking, Taxis and shuttles** – These expenses will be reimbursed if receipts are provided. If no receipts are provided, parking will be reimbursed at the \$5 per day provision for miscellaneous expenses.

Receipts not Required:

- **Meals** – Meal receipts are not required for full- or partial-day travel per diem. The claim for meal reimbursement should represent only those meals consumed and paid for by the employee while on business travel. Meal expenses and any tips related to meals are reimbursed at the meal and incidentals per diem rates found at: <http://abs.psu.edu/TravelRates/>. However, as with any reimbursement request, a lesser amount may be claimed at the traveler's request. For example, if the meal per diem in Chicago is \$66 per day and you only spend \$35 on breakfast, lunch, and dinner, you can claim the actual meal expense instead of the full per diem. In the event that all meals for a day or partial meals are provided by a conference, a business group, or another host source, no meal per diem should be claimed for that day or breakfast, lunch, or dinner.
- **Local subway/metro/bus**
- **Tolls**

After a trip is completed, employees should complete the ERS Travel Worksheet and submit it to Greg Davidson with the required receipts. All travel expenses will then be entered into the electronic ERS system (www.ers.psu.edu) where the traveler will receive an e-mail asking them to “submit” or approve the form through for approval.

REQUIREMENTS FOR A DEGREE IN FOOD SCIENCE

GENERAL DEGREE REQUIREMENTS

General Coursework Requirements Students receiving a M.S. or Ph.D. in Food Science must have satisfactorily completed (Grade C or above) FD SC 500 and 501, and Statistics. Refer to Tables 1 and 2 for more information.

Teaching Experience All Food Science graduate students have an academic requirement of obtaining teaching experience for their graduate degree. (See the FD SC 602 course on page 33, and also Appendix A 3 for information about the Teaching Experience Requirement.) Non-Food Science graduate students advised by Food Science faculty members are expected to serve as TA's as if they were Food Science graduate students. It is the responsibility of all international graduate students to register for the Penn State American English Oral Communicative Proficiency Test (AEOCPT) their first semester. Register by calling the Program in English as a Second Language at 814-865-7365.

Assistantships/Time Limitations Departmental Assistantship appointments are normally limited to two years (4 semesters + 2 summers) for a M.S. candidate and three years (6 semesters + 3 summers) for a Ph.D. candidate. Continued funding is considered on a case-by-case basis.

English Competency All Ph.D. students should read the section on the Candidacy Committee.

Grade-Point Average A minimum grade-point average of 3.0 for work done at the University is required for graduation.

Thesis Research Seminar All Food Science graduate students are required to present a seminar on their completed research before their final defense. The presentation is to be 30-40 minutes in length with an abstract and bibliography made available to the audience. This presentation is viewed as a professional obligation to the department and is considered a general FD SC graduate degree requirement. The seminar should be scheduled preferably during the weekly Departmental Seminar Series. The scheduling of this seminar is administered by the student's advisor in conjunction with Juanita Wolfe or Svend Pedersen.

M.S. DEGREE REQUIREMENTS

The graduate school requirements for the M.S. degree are described in detail in the Graduate Bulletin. The Food Science Faculty has determined additional general and specific requirements and recommendations. An overview of these requirements is presented in Table 1.

Graduate Committee Any member of the Penn State Food Science faculty with at least assistant professor rank may participate in the guidance and examination of master's candidates and sign master's thesis signatory pages. The general guidance of a Food Science master's candidate is the responsibility of an adviser who must be a member of the Penn State Food Science Graduate Faculty. In addition, the Department of Food Science requires an M.S. committee of at least three members, to include one additional member of the Food Science Graduate Faculty other than the adviser. If a minor has been selected, a faculty member representing the minor field must be appointed to the committee. Please complete the Masters Committee Appointment Signature Form (see back of handbook) to appoint and/or revise the Masters Thesis Committee and file this form with either Juanita Wolfe or Svend Pedersen as soon as the committee is finalized or changed.

Final Oral Examination Upon completion of the thesis, the student shall be required to pass an oral examination given by the individual's graduate committee. This examination shall cover both course work and the thesis.

Thesis Presentation Procedure The thesis must be presented to the members of the committee two weeks prior to the scheduled Final Oral Examination. The thesis must be in the format acceptable for submission to the Graduate School. The majority of the committee members must agree to proceed with the defense one week prior to the scheduled Final Oral Examination.

An M. S. degree checklist of action items is included to guide a student through the program. (p. 11)

Please find on the following page, a worksheet that can be used as a guideline to ascertain if all requirements for the M.S. degree have been fulfilled. This worksheet must be completed and submitted before the Final Oral Examination can be scheduled. It is the responsibility of the student to insure that all appropriate requirements for a degree have been met.

ELECTRONIC SUBMISSION OF THESES AND DISSERTATIONS (ETD)

Electronic submission of the final dissertation (eTD) became a requirement for all doctoral candidates at Penn State starting in fall semester 2006. Master's candidates now have the choice of submitting the final thesis either in the traditional paper format or as an electronic document. (It cannot be submitted as both.) Formatting requirements are essentially the same for a paper copy and an eTD, but the submission process itself is somewhat different. For additional information on the mechanics of eTD preparation, visit the eTD Web site (<http://www.etd.psu.edu/>).

Department of Food Science M.S. Graduate Program Checklist

Year 1

- _____ Attend orientation, Get Keys, Set up Email account
- _____ Take AEOCPT Exam for international students only, (during 1st semester)
http://aplmg.la.psu.edu/academicPrograms/ita_whatIsAEOCPT.php
- _____ Take Chemical and Hazardous Waste Handling Safety Course @ <http://www.ehs.psu.edu>
- _____ Schedule FD SC 500 A, B, C, and D
- _____ Schedule other 400 and 500 level courses in consultation with advisor
- _____ Research
- _____ Appoint thesis committee – see Master’s Thesis Appointment Form in back of handbook
- _____ Develop a coursework plan in consultation with thesis committee
- _____ Develop thesis proposal & present to thesis committee
- _____ Complete SARI (as part of FD SC 501)

Year 2

- _____ Schedule FD SC 602 (along with your TA assignment)/ Serve as TA
- _____ Schedule other 400 and 500 level courses per your coursework plan
- _____ Research
- _____ Write thesis & manuscript(s)
- _____ Activate “Intent to Graduate” the semester you plan to graduate (through eLion)
- _____ Thesis format review with Graduate School Thesis Office
- _____ Schedule Thesis Seminar (see Svend Pedersen to reserve room)
- _____ Schedule Thesis Defense (inform Juanita Wolfe or Svend Pedersen of date, time and location no later than one month prior to defense)
- _____ Give thesis to Department Head (allow one week for review & signature). Please provide thesis to Svend Pedersen. Due to Department Head’s travel obligation, recommend you inquire about schedule prior to submitting thesis.
- _____ Schedule Exit Interview with Department Head
- _____ Submit one hard bound copy of thesis to Juanita Wolfe or Svend Pedersen
- _____ Complete Termination/Transfer Checklist (see back of handbook)
Return keys, purchase card, and equipment. Complete ERS reports, vacate office (Note: Notify Juanita Wolfe or Svend Pedersen no later than one month prior to your planned departure date)

Table 1. MINIMUM REQUIREMENTS for M.S. DEGREE IN FOOD SCIENCE AT PENN STATE
(as approved at the Faculty meeting on 6/7/11)

	<u># Cr</u>
MINIMUM GRADUATE SCHOOL REQUIREMENTS¹	
Total 400-500-600 level credits needed to graduate	30
Maximum Transfer credits allowed (needs approval)	10
Maximum Non-degree credits allowed (needs approval)	15
Minimum 400-500 level coursework <u>in major</u>	12
Minimum 500-600 level credits required	18
Minimum Thesis research credits	6
Minimum GPA needed to graduate	3.0
Thesis	Yes
Time limit (# years from date of admission)	8
MINIMUM DEPARTMENTAL REQUIREMENTS (which will also fulfill minimum Graduate School Requirements)	
FD SC 500A, FD SC 500B, FD SC 500C, FD SC 500D	4
FD SC 501	2
FD SC 602 ²	1
Other 500-level FD SC courses ³	6
FD SC 600 credits (minimum needed)	6
Additional 400-500 level courses	12
Statistics (STAT 500 or equivalent) ⁴	√
Graduate committee	Yes
Thesis seminar	Yes
Thesis defense	Yes

¹ University Bulletin on Graduate Degree Programs (<http://bulletins.psu.edu/bulletins/whitebook>)

² Beginning with 2nd year, M.S. students are required to assist with one course each academic year as a Teaching Assistant (TA). This 1-credit hour for FD SC 602 does not count toward the Graduate School 18 credit requirement of 500-600 level credits, nor towards the total 30 credits required to graduate.

³ 3 credits of the requirement can be satisfied by 400 level Food Science courses with permission of the advisor.

⁴ Students receiving a M.S. in Food Science must have satisfactorily completed at least one 400-500 level course in each of these areas, during their undergraduate or graduate program. If you have already taken these courses at another institution, please send a memo (countersigned by your advisor) and a copy of the syllabi to the Graduate Program Coordinator.

WORKSHEET DESCRIBING HOW M.S. REQUIREMENTS WERE SATISFIED

This form must be submitted to Juanita Wolfe, 203 Food Science Building, before thesis defense date can be scheduled.

Name: _____ Date: _____

Course(s) taken to Meet Requirements

GRADUATE SCHOOL REQUIREMENTS

Total 400-500-600 level credits taken (30)

Transfer credits (maximum 10)

Non-degree credits (maximum 15)

400-500 level coursework in major (minimum 12)

500-600 level credits (minimum 18)

Thesis research credits (minimum 6)

Current GPA (minimum 3.0)

years from date of admission (maximum 8)

DEPARTMENTAL REQUIREMENTS

FD SC 500A (1 cr)

FD SC 500B (1 cr)

FD SC 500C (1 cr)

FD SC 500D (1 cr)

FD SC 501 (2 cr)

FD SC 602 (1 cr)

Other 500-level FD SC courses (6 cr)

FD SC 600 credits (6 cr)

Additional 400-500 level courses (12 cr)

Statistics (STAT 500 or equivalent)

Please also attach the following:

- Publications resulting from your thesis work (please list complete citation for articles published and also list titles and authorship of manuscripts planned or in preparation).
- Presentations at scientific meetings based on your thesis work (please list title and authorship on presentations, both oral and poster sessions, at regional or national scientific meetings).
- Awards (please list awards received at professional meetings and all scholarships and fellowships awarded during your graduate studies at Penn State).
- Please provide title and location of your employment after graduation.

Student Signature

Date

Advisor Signature

Date

Ph.D. DEGREE REQUIREMENTS

The graduate school requirements for the Ph.D. degree are described in detail in the Graduate Bulletin. The Food Science Faculty has determined additional general and specific requirements and recommendations. An overview of these requirements is presented in Table 2. It should be noted by all students admitted into the Ph.D. program that according to the Graduate School, the graduate student has no official status as a doctoral student and no assurance of acceptance as a doctoral candidate until the candidacy examination has been passed.

General: The Doctor of Philosophy degree is the highest mark of achievement of the University for creative scholarship and research. Doctoral study develops the student's capacity to make significant contributions to knowledge. Except in special cases, a M.S. degree in Food Science is earned before pursuing a Ph.D. degree.

Time Limitations: A student devoting half-time (9 to 12 credits per semester) to graduate studies will normally require about two to three years beyond the Master's degree to earn the Ph.D. degree. In no case may a student take more than eight years to complete the program from the date of acceptance as a candidate.

Residence: There is no required minimum of credits or semesters of study, but over some twelve-month period during the interval between admission to candidacy and completion of the Ph.D. program the candidate must spend at least two consecutive semesters (which may include the semester in which the candidacy examination is taken) as a registered full-time student engaged in academic work at the University Park Campus. Beyond this residency requirement, a student receiving assistantship support must be continuously registered up through the time of the comprehensive examination (e.g. students on half-time assistantships should schedule 9 to 12 credits per semester). If the doctoral candidate is not receiving assistantship support but is using University facilities and/or faculty-time, the student must enroll for a minimum of one credit during that semester or session (enrollment for a minimum of one credit is required during every semester or session until completion of the doctoral defense as long as University facilities and/or faculty time are used). In addition to the above, all students must be registered for a minimum of one credit during the semester or session that the comprehensive examination is held. **Once the comprehensive examination has been successfully passed, the student may enroll for FD SC 601 and will be considered to have "full-time" status (Note, that enrollment for one credit of 600 is also acceptable to the Graduate School after the student successfully passes the comprehensive examination; however, the student will not be considered to have "full-time" status in this case).** After successfully completing the doctoral defense, there is no requirement for the student to be registered, however, all degree requirements (including submission of the final doctoral thesis to the graduate school) must be completed prior to expiration of the statute of limitations (8 years for the doctoral candidate from the date of successful completion of the candidacy examination).

Department of Food Science Ph.D. Graduate Program Checklist

Year 1

- _____ Attend orientation, Get Keys, Set up Email account
- _____ Take AEOCPT Exam for international students only, (during 1st semester)
http://aplng.la.psu.edu/academicPrograms/ita_whatIsAEOCPT.php
- _____ Take Chemical Safety Training <http://www.ehs.psu.edu>
- _____ Schedule FD SC 500 A, B, C, D and FD SC 501
- _____ Schedule other 400 and 500 level courses in consultation with advisor
- _____ Research
- _____ Develop a coursework plan in consultation with thesis committee
- _____ Schedule Candidacy Exam/English Competency during first semester
- _____ Schedule Candidacy Exam/Science Competency
- _____ Complete SARI (as part of FD SC 501)

Year 2

- _____ Schedule FD SC 602 (along with your TA assignment)/ Serve as TA
- _____ Schedule other courses per your coursework plan
- _____ Appoint Ph.D. thesis committee. See draft form in back of handbook. Do not obtain signatures until form is reviewed and processed by either Juanita Wolfe or Svend Pedersen
- _____ Develop thesis proposal & present to thesis committee
- _____ Research and Oral
- _____ Schedule Written Comprehensive Exam

Year 3

- _____ Schedule FD SC 602 (along with your TA assignment)
- _____ Research
- _____ Write thesis & manuscript(s)
- _____ Activate "Intent to Graduate" the semester you plan to graduate (through eLion)
- _____ Schedule Thesis Seminar (see Svend Pederson to reserve room)
- _____ Schedule Thesis Defense (inform Juanita Wolfe or Svend Pedersen of date, time and location one month prior to defense)
- _____ Give thesis to Department Head (allow one week for review & signature). Please provide thesis to Svend Pedersen. Due to Department Head's travel obligation, recommend you inquire about schedule prior to submitting thesis
- _____ Schedule Exit Interview with Department Head
- _____ Submit one hard bound copy of thesis to Juanita Wolfe or Svend Pedersen
- _____ Complete Termination/Transfer Checklist (see back of handbook)
Return keys, purchase card, and equipment. Complete ERS reports, vacate office (Note: Notify Juanita Wolfe or Svend Pedersen no later than one month prior to your planned departure date)

Table 2. MINIMUM REQUIREMENTS for Ph.D. DEGREE IN FOOD SCIENCE AT PENN STATE WHEN ENTERING WITH AN M.S. DEGREE OR EQUIVALENT

(as approved at the Faculty meeting on 06/7/2011)

	<u># Cr</u>
MINIMUM GRADUATE SCHOOL REQUIREMENTS¹	
Maximum Non-degree credits allowed (needs approval) (Transfer credits are <u>not</u> allowed for the Ph.D. degree)	15
Candidacy exam	Yes
Comprehensive exam	Yes
Thesis	Yes
Residency (# semesters) ²	2
Minimum GPA needed to graduate	3.0
Time limit (# years from date of passing candidacy exam)	8

The Graduate School has no minimum credit hours requirement for the Ph.D. program. However, the Department of Food Science requires that the following list of courses be completed.

MINIMUM DEPARTMENTAL REQUIREMENTS (which will also fulfill min^m Graduate School Requirements)

FD SC 500A, FD SC 500B, FD SC 500C, FD SC 500D ³	4
FD SC 501 ³	2
FD SC 602 ⁴	2 semesters of 1 cr. each
Statistics (STAT 500 or equivalent) ⁵	√
Additional 500-level courses ⁶	6
Candidacy exam	Yes
Doctoral committee	Yes
Comprehensive exam	Yes
Thesis seminar	Yes
Thesis defense	Yes

¹ University Bulletin on Graduate Degree Programs (<http://bulletins.psu.edu/bulletins/whitebook>)

² Two semesters within a 12-month period; summer session is not considered a semester.

³ Not needed if student received credit for course during masters degree program at Penn State.

⁴ Beginning with 2nd year, Ph.D. students are required to assist with one course per academic year as a Teaching Assistant (TA).

⁵ Students receiving a Ph.D. in Food Science must have satisfactorily completed at least one 400-500 level course in each of these areas, during their undergraduate or graduate program.

⁶ 3 credits of the requirement can be satisfied by 400 level Food Science courses with permission of the advisor.

**WORKSHEET DESCRIBING HOW PH.D. COURSEWORK REQUIREMENTS WERE SATISFIED FOR
STUDENTS ENTERING PH.D. PROGRAM WITH AN M.S. DEGREE**

This form must be submitted to Juanita Wolfe, 203 Food Science Building, before thesis defense date can be scheduled.

Name: _____ Date: _____

Course(s) taken to Meet Requirements

GRADUATE SCHOOL REQUIREMENTS¹

Non-degree credits (maximum 15)

Candidacy exam	Yes
Comprehensive exam	Yes
Thesis	Yes

Residency (minimum 2 semesters)

Current GPA (minimum 3.0)

years from date of passing candidacy exam (Maximum 8)

DEPARTMENTAL REQUIREMENTS

FD SC 500A (1 cr)

FD SC 500B (1 cr)

FD SC 500C (1 cr)

FD SC 500D (1 cr)

FD SC 501 (2 cr)

FD SC 602 (2 semesters x 1 cr)

Statistics (STAT 500 or equivalent) √

Additional 500-level courses (6 cr)

Date of Candidacy exam

Date of Comprehensive exam

Please also provide the following information:

- Publications resulting from your thesis work (please list complete citation for articles published and also list titles and authorship of manuscripts planned or in preparation).
- Presentations at scientific meetings based on your thesis work (please list title and authorship on presentations, both oral and poster sessions, at regional or national scientific meetings).
- Awards (please list all scholarships and fellowships awarded during your graduate studies at Penn State).
- Please provide title and location of your employment after graduation.

Student Signature

Date

Advisor Signature

Date

CANDIDACY EXAMINATION COMMITTEE AND ITS ACTIVITIES

Committee Composition: The Ph.D. Candidacy Examination Committee (Committee) will be composed of four Food Science faculty members representing the fields of food chemistry, food microbiology, food engineering, and nutrition. Members will be appointed by the Head for a period of four years and will become Chair of the committee in their fourth year. All committee members will have equal rights and voting privileges. When a member of the Committee is unable to attend the examination or has a conflict of interest (e.g. advisor of the Ph.D. student being evaluated) that member will be responsible for finding a substitute within the Food Science Faculty in the field they represent, and notifying the Committee and the student of that change. In the event the Chair of the Committee has a conflict of interest, the next senior member of the Committee will act as Chair.

PH.D. CANDIDACY EXAMINATION

Assessment of English Competency

The Food Science Department defines the level of speaking competency as the ability to convey scientific and general information in an understandable manner, and the level of writing competency as the ability to relate scientific information in clear and easy-to-understand language that uses correct English grammar, syntax, spelling and punctuation. All Ph.D. candidates must take this exam—domestic students included.

The Graduate Program Coordinator will conduct the assessment of speaking and writing competency at the beginning of Fall and Spring semesters. Within the first month of their first semester in residence in the Food Science program, all new Ph.D. candidates will be asked to:

1. Write a one-page summary on a subject in one hour to test writing competency. The Graduate Program Coordinator will determine the topic and supervise the administration of the writing exercise. This will be evaluated by the Graduate Program Coordinator.
2. Complete a half-hour oral interview with the Graduate Program Coordinator to test speaking competency.

The Graduate Program Coordinator will evaluate each candidate's performance within two weeks and report the outcome to the candidate. A candidate must successfully complete both aspects of the English competency examination. Those successfully completing only one part will be required to take an appropriate remedial course(s) in the other area.

Improvement of English Competency by Students with Deficiencies - Those students whose speaking is judged below acceptable standards based on the initial assessment by the Graduate Program Coordinator will be required to take SPCOM 114G, 116G, or other appropriate courses. Those students whose writing is judged below acceptable standards based on the initial assessment by the Graduate Program Coordinator will be required to take one or more appropriate courses as determined by their graduate committee.

Attainment of Competency - For candidates with below-standard English based on their initial exam, assurance of acceptable speaking and writing competency will be based on evaluation of his/her performance on the oral and written portions of the Comprehensive Examination.

Request for Exemption from English Competency Examination - In order to request exemption, the student must submit a one page petition justifying the exemption to the Candidacy Examination Committee along with evidence for speaking competency and writing competency. For example, the student may have published a research paper (in English) as primary author, and the student may have recently presented an oral presentation (in English) at a scientific meeting. A copy of the manuscript and presentation abstract should be attached to the petition. Furthermore, the student's major advisor will also be required to sign the petition. By signing the petition, the advisor is attesting to the fact that the student has attained a level of speaking and writing competency in English as defined in the section above.

Assessment of Science Competency

The Candidacy Examination must be taken within three semesters of entry into the doctoral program (Penn State 2004-2006 Graduate Degree Programs Bulletin). All Ph.D. students must have a M.S. degree or have completed at least 18 credits of graduate coursework beyond a Baccalaureate degree, prior to taking the Candidacy Examination (Pg. 48, Penn State 2004-2006 Graduate Degree Programs Bulletin). Approximately two months before the Written Candidacy Examination, the Chair of the Candidacy Examination Committee will ask all Food Science graduate students to inform the Chair of their intent to take the Candidacy Examination. Approximately one month prior to the Written Candidacy Examination the Chair of the Candidacy Examination Committee will meet collectively with those students scheduled to take the Candidacy Examination to clarify the protocol and evaluation criteria.

Examination Protocol:

The Candidacy Examination will consist of a **Written Examination** and an **Oral Examination**. The written examination will be administered through a 6-hour examination held during the first week of January and the second week of May. The Oral Candidacy Examination will be administered during the second and/or third weeks of January and the third and/or fourth weeks of May (1-2 weeks following the written examination). The chair of the Candidacy Committee will meet with the students in December and April to explain the procedures and expectations for the written and oral exam.

Evaluation Criteria:

The candidacy examination is given consistent with the policy of the Graduate School, as developed specifically by the Graduate Faculty of the Food Science Graduate Program. The general guidelines of the Graduate School are described in the Graduate Degree Programs Bulletin (<http://www.psu.edu/bulletins/whitebook/>). What follows is a description of the specific evaluation criteria as developed by the Graduate Faculty in Food Science and administered by the Candidacy Committee under the direction of the Department Head, who is also Head of the Food Science Graduate Program.

This examination serves to validate the transformation in the student's status from graduate student accepted to work toward the Ph.D. to graduate student recognized as a candidate for the Ph.D. in the Food Science Graduate Program.

In general, as administered in the Food Science Graduate Program, this examination is designed to test two things: 1) the student's ability to engage in critical thinking within the field of food science, and 2) the student's knowledge in broad areas of the field, with an emphasis on understanding central principles and concepts rather than specific factual detail. More detailed guidance with respect to items 1 and 2 is described below.

The examination is administered in two parts. The first part is the written portion. It will take place in a single day. It will include questions concerning both items 1 and 2. At the completion of the written portion, the student will be given a copy of the questions and the answers submitted to them, but evaluative feedback will not be provided prior to the second part of the examination, the oral examination. For the oral examination, the student will be given a research paper (selected by the adviser) one week before the examination. The oral examination will begin with a 30-minute critique by the student of that research paper. The examination will consist of two components: 1) questions pertaining to the critique of that paper (primarily to evaluate overall understanding of the work and critical thinking with respect to it), and 2) questions pertaining to knowledge in the field; at the discretion of the Candidacy Committee members there may be specific questions concerning previously submitted written portion of the examination.

The primary outcome of the examination is either pass, fail with an opportunity for a re-examination, or fail. Even with a passing outcome, an additional outcome may be a requirement for additional coursework.

Students must pass the Candidacy Examination to be considered a Ph.D. candidate. The Candidacy Examination (Science Competency) is used to evaluate a candidate's potential for Ph.D. research, including the candidate's ability to think critically, analyze research problems, and communicate means to approach and examine these problems. Before taking the Candidacy Exam, students should have knowledge of the following areas with an emphasis on principles/concepts rather than details:

1. The scientific method, including hypothesis development, basic experimental design and methods of data analysis.
2. Scientific ethics and academic integrity.
3. How to effectively communicate scientific research information to a wide variety of audiences.
4. Principles of chemistry and biochemistry of foods, including food ingredients and food systems from raw materials to during and after processing.
5. Principles of food microbiology, including beneficial and detrimental aspects of microorganisms in foods, as well as methods used for detection, enumeration and control of microorganisms important in foods.
6. Principles of nutrition with emphasis on aspects of human physiology and metabolism, nutrient intake and utilization, nutrition surveillance and dietary recommendations, and the impact of food intake patterns on health.
7. Principles of food engineering, including fluid flow and heat transfer, as applied to unit operations in food processing and manufacture.

Written Candidacy Examination

All students taking the exam during a specific period will be given the same questions in the areas of food microbiology, food engineering, nutrition, and food chemistry. Two questions will be given in the morning (Microbiology and Engineering from 9:00 A.M. to noon) and two questions will be given in the afternoon (Nutrition and Chemistry from 2:00 P.M. to 5:00 P.M). The written examination will include questions to evaluate the student's ability to synthesize knowledge and develop/test hypotheses. A separate grade will not be assigned to the written exam and, therefore, a graded exam will not be returned to the student prior to the Oral Candidacy Examination. However, a copy of the questions and the student's answers will be provided to the candidate at the time it is distributed to the Committee members.

Oral Candidacy Examination

Two weeks before the oral examination, the candidate shall submit to the Staff Assistant of Student Programs the following:

1. A copy of the master's thesis and any relevant published work.
2. Transcripts of undergraduate and graduate course work and GRE scores.
3. Statement of purpose for Ph.D. studies (professional goals, major research interests and plan for completing Ph.D.).
4. A list of courses taken and to be taken at Penn State.

All of the materials will be made available in a file in the main office for review by the Candidacy Examination Committee prior to the Oral Candidacy Examination.

One week prior to the oral examination, the student will be given a research paper in their area of research interest. This paper will be selected by the student's advisor in consultation with the Chair of the Candidacy Examination Committee. The oral exam will begin with the student presenting a **30** minute critique of the research paper. It is recommended that a copy of the Powerpoint presentation be made available to the Candidacy Committee members. An ideal research paper will describe food science research and be published in a core food science journal (e.g. Journal of Food Science, Journal of Agriculture, Food Chemistry, Applied Environmental Microbiology, Journal of Food Engineering, American Journal of Clinical Nutrition). The research paper should be broadly comprehensible to all members of the committee and should have some flaws that the student can identify and criticize. The research paper should be related to the student's research topic but not directly overlapping. The research paper should not have been previously discussed with the advisor or used in class.

Students may use visual aids and notes, but a written draft that could be read from will not be permitted. After the presentation, the committee will have the opportunity to ask questions regarding information presented in the paper. The aim of these questions is to determine the student's ability to show a clear understanding of the data presented and to demonstrate competency in explaining research data to a scientific group in a logical and precise manner. It is expected that the student will have a thorough understanding of all aspects of the selected research paper including background literature and all methodology used.

The final part of the oral exam may include questions from the committee on perceived deficiencies in the previously taken written exams. This part of the exam may also consist of questions of a general nature to further determine critical thinking skills of the student.

Decision of the Candidacy Examination Committee and Communication of Results

The result of the Candidacy Examination (pass, fail with the opportunity to retake, or fail with no opportunity to retake) will be communicated to each student immediately after their Oral Candidacy Examination. To pass, the student must receive at least 3 out of 4 positive votes from the Committee. If the decision is to fail the student (less than 3 of 4 positive votes from the Committee) the Committee will then vote to determine whether or not the student may retake the Candidacy Examination. At least 3 out of 4 positive votes are required to allow a retake. If a student fails the Candidacy Examination but is given the opportunity to retake, they must take the Candidacy Examination at the next available Candidacy Examination period in January or May. Students will only be given one opportunity to retake the Science Competency portion of the Candidacy Examination. If a student fails the Candidacy Examination and the retake vote is less than 3 out of 4 positive, the student will not be allowed to retake the Candidacy Examination.

After all Oral Candidacy Examinations are finished, each student taking the Candidacy Exam, their advisor(s), all members of the Candidacy Examination Committee, the Department Head and the Graduate Program Coordinator will be notified in writing as to the outcome of the Candidacy Examination, whether the Candidacy Examination Committee perceived any specific deficiencies and what coursework and/or other work are recommended to remedy the perceived deficiencies.

DOCTORAL COMMITTEE

After a student has been admitted to candidacy for the Ph.D. degree, the student's advisor in consultation with the candidate will recommend a doctoral supervisory committee to the Department Head. The "Graduate Student Committee Policies and Procedures and Committee Appointment Signature Form" will now be used to appoint and/or revise a doctoral committee (Please see back of handbook). The signature page of the "Graduate School Committee Policies and Procedures and Committee Appointment Signature Form" should be returned to Graduate Enrollment Services soon after the student is admitted to candidacy. If a committee change is necessary, the signature page must be resubmitted but only with the signature(s) of the new committee member (s). A doctoral examination will not be scheduled until the signature page is completed and on file in the Office of Graduate Enrollment Services. The Dean of the Graduate School, upon recommendation of the Department Head, will appoint a doctoral committee consisting of four or more active members of the Graduate Faculty, at least three of whom are members of the Food Science Graduate Faculty. In addition, it is required to have a member from another department of the University on the Committee. If a minor has been selected, a faculty member representing the minor field must be appointed to the Committee. The chairman of the committee generally is a member of the Food Science Graduate Faculty. The committee is responsible for:

1. Approving the broad outline of the student's program of course work and research.
2. Approving the student's communication abilities.
3. Approving the student's plan of research.
4. Administering and evaluating the comprehensive and final examinations, and approving the thesis.

COMPREHENSIVE EXAMINATION

The Ph.D. comprehensive exam is a thorough test of the student's knowledge and intellectual capability. The student is expected to demonstrate a mastery of the subject matter encompassed by the chosen field and ability to demonstrate how specific items interrelate. The student should be able to utilize knowledge in problem solving situations and for creative interpretation and speculation.

Candidates are required to have a minimum grade-point average of 3.0 for work performed at Penn State. The examination is officially scheduled and announced by the Dean of the Graduate School following recommendation by the doctoral committee chairman through the Department Head. The scheduling form is

available in the Office of Student Programs, 202 Food Science Building, and must be completed at least two weeks prior to the oral examination.

The examination shall consist of both a written and oral section. Each member of the student's committee will submit at least two written questions to the Chairman of the committee who will administer the written section. All questions and answers will be distributed to each member of the committee for review. Within one week the committee will meet for the purpose of conducting the oral portion of the examination.

A favorable vote of at least two-thirds of the members of the committee is required for passing. Based on the student's performance, the committee may recommend to the Dean of the Graduate School one of the following actions:

1. That the candidate be passed,
2. That the candidate be re-examined at a later date,
3. That the candidate be failed and eliminated from the program.

Note that in May 2001, the Food Science Faculty discussed the possibility of basing a substantive portion of the comprehensive examination on a thesis proposal drafted by the Ph.D. candidate. Although a thesis proposal is not currently required by our program, the Ph.D. candidate and his or her advisor are encouraged to use this approach for the comprehensive examination.

Students who pass their comprehensive exam can register for FD SC 601 (Ph.D. dissertation full time) for zero credits. Tuition is not charged for this course but there is a Ph.D. Dissertation Fee.

THESIS SEMINAR

Prior to the Final Oral Exam, student will present a seminar to the department. See Svend Pedersen to set up time and room for seminar and submit abstract to him via email (sep14@psu.edu) at least two weeks prior to the seminar. The student's committee should be invited to attend.

FINAL ORAL EXAMINATION/THESIS DEFENSE

A copy of your thesis must be given to each member of your committee two weeks prior to the scheduled Final Oral Examination. The thesis must be in the format acceptable for submission to the Graduate School. The majority of the committee members must agree to proceed with the defense, one week prior to the scheduled Final Oral Examination.

The doctoral candidate who has satisfied all other requirements for the degree will be scheduled by the Dean of the Graduate School, on recommendation of the doctoral committee through the Department Head, to take a final examination. The final examination may not be scheduled until at least three months have elapsed after the comprehensive examination was passed, unless permission is granted by the Dean of the Graduate School. The deadline for holding the examination prior to commencement is listed in the Graduate School calendar. The examination is oral, open to the public, and related in large part to the thesis. The final examination must be scheduled with the Graduate School Office at least two weeks before the examination is to be held.

The final thesis with all of the signatures of the committee members should be submitted to the head of the department, for his signature, at least one week prior to submission to the Graduate School

The following page contains a worksheet that can be used as a guideline to ascertain if all requirements for the Ph.D. degree have been fulfilled and must be completed and submitted to the Office of Student Programs, 202 Food Science Building, before the final oral examination can be scheduled. It is the responsibility of the student to insure that all appropriate requirements for a degree have been met.

ENTRY INTO THE Ph.D. PROGRAM WITHOUT FIRST OBTAINING A M.S. DEGREE

General Policy Statement

Although most applicants to the Ph.D. program have already obtained a Master's degree in Food Science or a related program, the M.S. degree is not a prerequisite for entrance into the doctorate program. The Graduate Program and Admissions committee will consider requests from exceptionally qualified students who have received or anticipate receiving a B.S. degree, and from students currently enrolled in the Food Science M.S. program who wish to transfer into the Ph.D. program without first completing the M.S. requirements. Final approval of all applications will be made by the Department Head upon recommendation of the Graduate Program and Admissions Committee.

New applicants with only a B.S. degree or equivalent who are not accepted into the Ph.D. program may apply for entrance into the M.S. program. Accepted students who subsequently fail the Candidacy Examination with no opportunity for retake or who fail the exam twice, may transfer to the M.S. program. In this case, credits earned while enrolled in the Ph.D. program may apply to course requirements for the M.S. degree.

Current M.S. students who are not approved for transfer into the Ph.D. program may continue their M.S. studies without penalty. Accepted transfer students who subsequently fail the Candidacy Examination with no opportunity for retake or who fail the exam twice, may return to the M.S. program. In this case, credits earned while enrolled in the Ph.D. program may apply to course requirements for the M.S. degree.

Application Procedures

New applicants who wish to enter the Ph.D. program with only a B.S. degree or equivalent must submit the following:

- All information, test scores, and fees currently required for M.S. to Ph.D. applicants
- A section within the personal statement that describes his/her justification for bypassing the M.S. degree

Current M.S. students who wish to transfer into the Ph.D. program without first completing all M.S. requirements must submit the following:

- Their original complete M.S. application file
- A letter written by the student that describes his/her justification for bypassing the M.S. degree
- A letter from the student's advisor

The student's advisor must provide a letter to the Graduate Program and Admissions Committee recommending transfer. This letter would generally be submitted within two semesters after admission of the student into the M.S. program. A second letter of recommendation must also be provided by another faculty member from Penn State supporting the student's transfer into the Ph.D. program. This letter must be submitted to the Graduate Program and Admission Committee at the same time that the advisor's letter is submitted. It is suggested that this second letter be provided by a faculty member who has had the student in at least one graduate level course (400 level or above).

Recommendations

Note that according to the Penn State Graduate School, "the student has no official status as a doctoral student and no assurance of acceptance as a doctoral candidate until the Candidacy Examination has been passed". Therefore, it is strongly advised that applicants be informed of the procedural requirements and evaluation criteria necessary for passing the Candidacy Examination. These include taking the exam within 3 semesters after official entry or transfer into the Ph.D. program (summer sessions do not count towards this requirement) and after having earned at least 18 credits earned in graduate courses beyond the baccalaureate.

Table 3. MINIMUM REQUIREMENTS for PH.D. DEGREE IN FOOD SCIENCE AT PENN STATE WITHOUT FIRST RECEIVING AN M.S. DEGREE

(as approved at the Faculty meeting on 06/7/2011)

	<u># Cr</u>
MINIMUM GRADUATE SCHOOL REQUIREMENTS¹	
Maximum Non-degree credits allowed (needs approval) (Transfer credits are <u>not</u> allowed for the Ph.D. degree)	15
Candidacy exam	Yes
Comprehensive exam	Yes
Thesis	Yes
Residency (# semesters) ²	2
Minimum GPA needed to graduate	3.0
Time limit (# years from date of passing candidacy exam)	8

The Graduate School has no minimum credit hours requirement for the Ph.D. program. However, the Department of Food Science requires that the following list of courses be completed.

MINIMUM DEPARTMENTAL REQUIREMENTS(which will also fulfill minimum Graduate School requirements)

FD SC 500A, FD SC 500B, FD SC 500C, FD SC 500D	4
FD SC 501	2
FD SC 602 ³	1
Other 500-level FD SC courses ⁴	6
FD SC 600 credits (minimum needed)	6
Additional 400-500 level courses	12
Statistics (STAT 500 or equivalent) ⁵	√
Candidacy exam	Yes
Doctoral committee	Yes
Comprehensive exam	Yes
Thesis seminar	Yes
Thesis defense	Yes

¹ University Bulletin on Graduate Degree Programs (<http://bulletins.psu.edu/bulletins/whitebook>)

² Two semesters within a 12-month period; summer session is not considered a semester.

³ Beginning with 2nd year, Ph.D. students are required to assist with one course each academic year as a Teaching Assistant (TA).

⁴ 3 credits of this requirement can be satisfied by 400 level Food Science courses with permission of the advisor.

⁵ Students receiving a Ph.D. in Food Science must have satisfactorily completed one 400-500 level course in each of these areas, during their undergraduate or graduate program.

**WORKSHEET DESCRIBING HOW COURSEWORK REQUIREMENTS WERE SATISFIED FOR
STUDENTS ENTERING PH.D. PROGRAM WITHOUT AN M.S. DEGREE**

This form must be submitted to Juanita Wolfe, 203 Food Science Building, before thesis defense date can be scheduled.

Name: _____ Date: _____

Course(s) taken to Meet Requirements

GRADUATE SCHOOL REQUIREMENTS¹

Non-degree credits (maximum 15)

Candidacy exam	Yes
Comprehensive exam	Yes
Thesis	Yes

Residency (minimum 2 semesters)

Current GPA (minimum 3.0)

years from date of passing candidacy exam (Maximum 8)

DEPARTMENTAL REQUIREMENTS

FD SC 500A (1 cr)

FD SC 500B (1 cr)

FD SC 500C (1 cr)

FD SC 500D (1 cr)

FD SC 501 (2 cr)

FD SC 602 (2 semesters x 1 cr)

FD SC 600 (6 cr)

Other 500-level FD SC courses (6 cr)

Additional 400-500 level courses (12 cr)

Statistics (STAT 500 or equivalent) ✓

Date of Candidacy exam

Date of Comprehensive exam

Please also provide the following information:

- Publications resulting from your thesis work (please list complete citation for articles published and also list titles and authorship of manuscripts planned or in preparation).
- Presentations at scientific meetings based on your thesis work (please list title and authorship on presentations, both oral and poster sessions, at regional or national scientific meetings).
- Awards (please list all scholarships and fellowships awarded during your graduate studies at Penn State).
- Please provide title and location of your employment after graduation.

Student Signature

Date

Advisor Signature

Date

FOOD SCIENCE GRADUATE COURSES OFFERED

400. FOOD CHEMISTRY (4) Chemical properties of food constituents as influenced by processing and storage. Selected experiments and demonstrations to illustrate chemical reactions of importance in foods. Prerequisite or concurrent: CHEM 202, BMB 211, BMB 212
Coupland
404. SENSORY EVALUATION OF FOODS (2) Sensory evaluation of food, methods of test analysis, panel selection and training, taste sensation theory, consumer testing methods. Prerequisite: STAT 250. Junior standing.
Hayes
405. FOOD ENGINEERING PRINCIPLES (3) Engineering principles of importance to food manufacturing, including units, dimensions, mass and energy balance, fluid flow, rheology, heat transfer, and psychrometrics. Prerequisites: MATH 110, PHYS 250
Anantheswaran
406. PHYSIOLOGY OF NUTRITION (3) Physiological mechanisms involved in thirst and appetite, digestion, absorption, utilization of nutrients, respiration, and body temperature regulation. Prerequisite: B M B 211
Thompson
407. Food Toxins (2) Microbiological and chemical aspects of food poisoning; toxicological principles; case histories and prevention of problems. Prerequisite: Senior standing in food science or related majors.
Lambert
408. FOOD MICROBIOLOGY (2) Significance of microorganisms in food commodities, microbial spoilage, food-borne infections, and intoxications; methods of preservation, processing, and control. Prerequisite: MICRB 201, 202.
Doores
- 409W. FOOD MICROBIOLOGY LABORATORY (3) Methods of isolation and detection of spoilage and pathogenic microorganisms in foods; effects of processing and preservation on survival of food microorganisms. Prerequisite: MICRB 202. Prerequisite or concurrent: FD SC 408.
Doores
410. CHEMICAL METHODS OF FOOD ANALYSIS (3) Qualitative and quantitative determination of food constituents. Prerequisite: BMB 212, FD SC 400.
Elias/Roberts
411. MANAGING FOOD QUALITY (2) Principles and applications of Hazard Analysis Critical Control Points. Statistical tools for the control and improvement of food quality. Prerequisite: FDSC 408, STAT 250.
Ziegler
413. SCIENCE AND TECHNOLOGY OF PLANT FOODS (3) Physical and chemical behavior of plant-based raw materials and ingredients, with emphasis on parameters influencing finished product quality. Prerequisite: FD SC 400, 405, 408, 410.
Elias/LaBorde
414. SCIENCE AND TECHNOLOGY OF DAIRY FOODS (3) Physical and chemical behavior of dairy-based raw materials and ingredients, with emphasis on parameters influencing finished product specifications. Prerequisite: FD SC 400, 405, 408, 410.
Roberts
415. SCIENCE AND TECHNOLOGY OF MUSCLE FOODS (3) Physical and chemical behavior of muscle food commodities, with emphasis on muscle-based ingredients in formulated foods. Prerequisite: FD SC 400, 405, 408, 410.
Mills
430. UNIT OPERATIONS IN FOOD PROCESSING (3) Thermal processing, refrigeration, freezing, dehydration, and concentration in the food industry, including effects on food quality, food packaging and waste management. Prerequisite: FD SC 400, 405, 408.
Anantheswaran
497. SPECIAL TOPICS (1-9) Formal courses given infrequently to explore, in depth, a comparatively narrow subject which may be topical or of special interest. Several different topics may be taught in one year or semester. A specific title may be used in each instance and will be entered on the student's transcript.
- 497A. BIOACTIVE COMPONENTS IN FOODS (2) Lecture course covering the occurrence, evidence for activity potential uses, and safety of important classes of non-nutrient biologically-active food components.
Lambert
- 497G. MOLECULAR BIOLOGY METHODS FOR FOOD MICROBIOLOGY (3) Lecture and laboratory-based course covering DNA-based methods for detecting and tracking microorganisms in food products.
Dudley

- 497Z. Product and Process Design (2) **UNDER DEVELOPMENT IN 2012** Ziegler
- 500A FUNDAMENTALS OF FOOD SCIENCE – MICROBIOLOGY. (1) Intensive overview of the field of Food Science with the focus on microbiology. Knabel
- 500B FUNDAMENTALS OF FOOD SCIENCE - ENGINEERING. (1) Intensive overview of the field of Food Science with the focus on Food Engineering. Anantheswaran
- 500C FUNDAMENTALS OF FOOD SCIENCE – CHEMISTRY. (1) Intensive overview of the field of Food Science with the focus on chemistry. Coupland
- 500D FUNDAMENTALS OF FOOD SCIENCE - NUTRITION. (1) Intensive overview of the field of Food Science with the focus on nutrition. Brown
- 501 RESEARCH METHODS IN FOOD SCIENCE. (2) Planning and conducting research in food science including: problem definition, experimental design, collecting and recording data, and effective communication. Ziegler
- 506 FLAVOR CHEMISTRY. (3) Formation, analysis and release of flavors in food systems. Prerequisite(s): FD SC 400.
- 507 ADVANCED FOOD MICROBIOLOGY. (3) Roles of microorganisms in food preservation, spoilage, health and disease. Recent advances in detection, tracking and control of foodborne pathogens. Prerequisite: FD SC 408 or FD SC 500 , and a 400-level course either biochemistry or molecular biology. Knabel
- 510 CARBOHYDRATE HYDROCOLLOIDS. (3) Physicochemical behavior of edible carbohydrates, with emphasis on starches and including selected exudates, extracts, flours, and fermentation products. Prerequisite(s): BMB 401 Thompson
- 514 FOOD PHYSICAL CHEMISTRY. (3) Physical principles underlying food structure and quality. Prerequisite: FD SC 400 or FD SC 500C Coupland
- 521 FOOD DEFENSE: PREVENTION PLANNING FOR FOOD PROCESSORS (3) Course prepares current and aspiring professionals to learn, recognize and apply measures to prevent intentional contamination of the food supply. Prerequisite: AGBIO 520 Cutter
- 596 INDIVIDUAL STUDIES (1-9) Creative projects, including nonthesis research, that are supervised on individual basis and fall outside the scope of formal courses. A specific title may be used in each instance and will be entered on the student's transcript. Multiple offerings may be accommodated by the use of suffixes a, b, etc. TO BE OFFICIALLY REGISTERED FOR INDIVIDUAL STUDIES STUDENTS MUST HAVE ON FILE IN THE FOOD SCIENCE OFFICE A SPECIAL PROBLEMS CONTRACT FORM (p. 43) THAT IS CO-SIGNED BY THE FACULTY MEMBER AND THE STUDENT. Students also must have a GPA greater than or equal to 3.0 in order to register for FD SC 596.
- 597 SPECIAL TOPICS. (1-6) Formal courses given on a special interest subject which may be offered infrequently; several different topics may be taught in one year or semester. A specific title may be used in each instance and will be entered on the student's transcript.
- 597F Microbial Metabolism in Foodborne Organisms (3) **UNDER DEVELOPMENT IN 2012** Dudley
- 597G (NUTRN 597G) READINGS IN INGESTIVE BEHAVIOR (1) Students lead discussion of original research in the field of ingestive behavior with a focus on food intake in particular. Hayes
- 597K. (NUTR 597K /BB H 597K) Food Addiction: Fact or Fiction? (3) Original literature using both human subjects and animal models relevant to the topic of food addiction will be discussed. Hayes
- 597X (1) Functional Foods and Dietary Supplements (concurrent with FD SC 497A) – **UNDER DEVELOPMENT IN 2012** Lambert
- 597X (1) Advanced Sensory Science (concurrent with FD SC 404 (3) **UNDER DEVELOPMENT IN 2012** Hayes
- 597X (1) Carcinogens and Anticarcinogens (concurrent with FD SC 407 (2) – **UNDER DEVELOPMENT IN 2012** Lambert
- 597X (1-3) Advanced topics in Food Engineering – **UNDER DEVELOPMENT IN 2012**
- 597Z (1) Product and Process Design (concurrent with FD SC 497Z (2) – **UNDER DEVELOPMENT IN 2012** Ziegler

600 THESIS RESEARCH. (on campus). FD SC 600 cannot be taken for a letter grade.

A master's candidate is not required to register for the final semester in order to graduate or in order to make minor revisions to the thesis and/or to take a final examination for the degree, unless required to do so by the program. However, international students should be registered each semester to meet F-1 Visa requirement, including the semester they defend.

601. Ph.D. DISSERTATION.

Registration requirements for FD SC 601

International Students

1. Ph.D. students who have passed their candidacy exam must continually be registered until the semester that they defend their thesis.
2. Students who need to be registered after they have passed their comprehensive exam, should register for FD SC 601.
3. After the defense, in order to remain in the U.S. on a legal status, the student should apply for OPT/CPT. Students are urged to contact ISS for appropriate guidance.
4. International students must retain their health insurance to retain their F-1 Visa status. If they would like to purchase insurance elsewhere, they must work with the Student Insurance Office to get approval.

Domestic Students

1. Ph.D. students who have passed their candidacy exam must continually be registered until the semester that they defend their thesis.
2. Students who have passed their Comprehensive Exam should register for FD SC 601.
3. Students should be formally registered during the semester (including summer) they intend to defend their thesis.

602 SUPERVISED EXPERIENCE IN COLLEGE TEACHING. (1-2)

610 THESIS RESEARCH. (off campus).

611 Ph.D. DISSERTATION. (part time)

Supervised Experience in College Teaching FD SC 602 - (1 cr)

Supervised and graded experience in the organization and conduct of lectures and/or laboratories at the undergraduate level and the evaluation and counseling of students. Preparation for performing TA duties.

General Policy - Enrollment in this course is limited to graduate students serving as a TA in food science. Registration will generally be limited to one credit per term. Credit for this course shall be counted as a part of the normal credit load for all students (including those on assistantships). However, credit for this course shall not be counted when calculating the grade-point average or in fulfilling any specific credit requirement for the M.S. and/or Ph.D. degree.

Teaching Assistant Selection - The Head of the Department, in consultation with the Graduate Program Coordinator and the faculty, is responsible for annual assignment of TAs. Students are asked to indicate their preferences for assignment and encouraged to provide information about their interests, background, and any previous instructional experience. Instructors of the various courses are also asked for their preferences for TAs. After the selection process, the TAs are informed of the assignment in a notification letter.

Course Requirements - Enrollment in FD SC 602 implies additional educational activity by the student. Duties carried out in the normal course of TA assignments are not sufficient to fulfill FD SC 602 requirements.

Grade - The grade for this course will be assigned jointly by the instructor for FD Sc 602 and the instructor for the course for which the student is the TA.

FD SC 602 Syllabus (Students who are TA's in the Department for the 1st time)

New Instructor Orientation on "Planning a class session" (a 4 hour session the week before classes)

Getting the big picture

What do your students already know?

Background knowledge probe

Misconceptions/preconceptions check

What do you want them to learn?

Defining your teaching objectives?

- Why is it important for them to learn it?
- Filling in the details
 - What teaching methods to use?
 - Matching methods to objectives
 - Examples and activities and their sequencing
- Gauging your progress
 - How will you assess student learning?
 - Evaluation criteria
 - Checking understanding
- Conclusions

FD Sc 602 Syllabus (Students who are TA's in the Department for the 2nd time)

An Orientation towards "Pedagogy & the Learning Process" (7 hours of discussion sessions during the semester)
(Text: Penn State Teacher II)

- Reading assignments & class discussion on learning styles & Bloom's Taxonomy (1 hour)
- Reading assignments & class discussion on Teaching methods (lectures, group discussions) (1 hour)
- Reading assignments & class discussion on Assessment/evaluations (1 hour)
- Development & presentation of teaching philosophy (4 hours)

FD Sc 602 Syllabus (Students who are TA's in the Department for the 3rd time)

- Development & presentation of a term paper related to the pedagogy, or
- Development & presentation of a laboratory session for an undergraduate class

AEOCPT (American English Oral Communicative Proficiency Test)

All International students who plan to be a teaching assistant must take the AEOCPT exam that is offered through the Department of Applied Linguistics. You should preregister via this website
http://aplmg.la.psu.edu/academicPrograms/ita_AEOCPT_reg.php

The score you receive on this test will determine when you may assume teaching duties as a teaching assistant. Also effective January 1995, an American English Oral Communicative Proficiency Test Score is required for enrollment in ESL 115G, ESL 117G, and ESL 118G. Students who have not taken the oral proficiency test will not be permitted to enroll in these courses.

The American Oral English Communicative Proficiency Test consists of four sections of questions and activities. Your responses to these are evaluated on the way you express your ideas, not the actual ideas.

In the first section, you are asked to explain a common term from your field. You should explain the term, using examples or analogies if appropriate, and its importance. The second section consists of a role play. You will interact with one of the evaluators about a topic that you should be able to discuss easily. In the third section, you are asked to respond to three questions of general interest. One of the evaluators will ask you the questions. They will not be in written form. In the fourth section, you are given information, which you are then asked to "present" to a group of students. You are able to refer to the information printed in the test booklet. You are given time to prepare your answers and should answer as completely as possible.

You will be evaluated on three important aspects of your English language proficiency. These include: pronunciation (the articulation of specific sounds, and the stress and intonation of your speech); fluency (the rate and appropriateness of pauses in your speech); and comprehensibility (how extensive and appropriate your usage of vocabulary and grammar is).

You will be tested by two evaluators (trained graduate students in the Department of Applied Linguistics). One of them will give you instructions, but both will be evaluating your English language proficiency. The test will be tape recorded. If there is a test discrepancy, a third rater will listen to the tape to score your test. Tapes are destroyed after six months.

Before the evaluators begin the test, one of them will explain procedures to you and ask you informal questions about yourself. This "warm-up" conversation is meant to help you relax. It is not graded, even if it is recorded.

One of the evaluators will give you a booklet so you can follow the instructions in writing as the evaluator reads them to you. You are allowed to ask questions about the instructors or the content of the test throughout. You will NOT be penalized for asking questions.

The test takes approximately 25 minutes to complete. Within one week of taking the test, you should check with Juanita Wolfe or Svend Pedersen to receive your score. Scores range from 0-300. Effective August 1999, a score of 250 or higher allows an international student to assume teaching responsibilities with no restrictions. Scores under 250 require additional coursework in English. The following scores and interpretations constitute the guidelines followed by the Department of Applied Linguistics.

AEOCPT SCORE	REQUIRED COURSE	PROGNOSIS
250-300	None	Student may assume teaching duties with no restrictions.
230-249	Enroll in ESL 118G before assuming teaching duties.	After one semester, student <i>should be</i> able to assume teaching duties with no restrictions. <i>Students enrolled in ESL 118G must receive a grade of "B" before they assume teaching duties with no restrictions.</i>
200-229	Enroll in ESL 117G	Will require at least two semesters before student is recommended to teach. <i>Students enrolled in ESL 117G must receive a grade of "B" before they will be allowed to enroll in ESL 118G.</i>
below 200	Enroll in ESL 115G	Will require at least three semesters before student is recommended to teach. <i>Students enrolled in ESL 115G must receive a grade of "B" before they will be allowed to enroll in ESL 117G.</i>

500 LEVEL FOOD SCIENCE COURSES

Even Years (2012, 2014, 2016)

Fall Semester

- FD SC 500A(1) Fundamentals of FD SC-Micro (Knabel)
- FD SC 500B(1) Fundamentals of FD SC-Eng (Anantheswaran)
- FD SC 521(3) - Food Defense (Cutter, on-line)
- FD SC 597G(1) - Ingestive Behavior (Hayes)
- FD SC 597(1) - Functional Foods & Dietary Supplements (Lambert) (concurrent with Bioactive Components in foods, 2 Cr.)
- FD SC 597Z(1) – Product & Process Design (Ziegler) (concurrent with FD SC 497Z, 2 cr.)

Spring Semester

- FD SC 500C(1) Fundamentals of FD SC-Chem(Coupland)
- FD SC 500D(1) Fundamentals of FD SC-Nutr (Brown)
- FD SC 501(2) Research Methods in FD SC (Lambert)
- FD SC 507(3) - Advanced Food Microbiology (Knabel)
- FD SC 597K(3) – Food Addiction (Hayes)
- FD SC 597G(1) – Ingestive Behavior (Hayes)
- FD SC 597(1) – Advanced Sensory Science (Hayes) (concurrent with 404, 3 cr.)

Odd Years (2011, 2013, 2015)

Fall Semester

- FD SC 500A(1) Fundamentals of FD SC-Micro
- FD SC 500B(1) Fundamentals of FD SC-Eng
- FD SC 514(3) - Food Physical Chemistry (Coupland)
- FD SC 521(3) - Food Defense (Cutter on-line)
- FD SC 597F(3) – Microbial Metabolism in Foodborne Organisms (Dudley)
- FD SC 597G(1) - Ingestive Behavior (Hayes)
- FD SC 597(1) – Carcinogens and Anticarcinogens (Lambert) (concurrent with 407, 2 cr.)
- FD SC 597Z(1) – Product & Process Design (Ziegler) (concurrent with FD SC 497Z, 2 cr.) Beginning 2012.

Spring Semester

- FD SC 500C(1) Fundamentals of FD SC-Chem
- FD SC 500D(1) Fundamentals of FD SC-Nutr
- FD SC 501(2) Research Methods in FD SC
- FD SC 597(1) – Advanced Sensory Science (Hayes) (concurrent with 404, 3 cr.)
- FD SC 597G(1) – Ingestive Behavior (Hayes)
- FD SC 597(1-3) – Advanced topics in Food Engineering

CONTRACT FOR FOOD SCIENCE SPECIAL PROBLEMS COURSES (FD SC 596)

Please complete this form and submit to Juanita Wolfe, 203 Food Science Building, to complete registration.

Student's Name _____
(print)

Professor's Name _____
(print)

Semester and Year _____

Course Number and Name _____

Number of Credits _____

Student's Signature

Date

Professor's Signature

Date

Comments:

SUGGESTED NON FOOD SCIENCE COURSES THAT MAY BE USED TO FULFILL GRADUATE DEGREE REQUIREMENTS

The list is only a suggestion. Choice of courses is a decision based on input from advisor, committee members and the interests of the students.

- A. **ENGINEERING**
 ABE 465 Food/Biological Processing Engineering
 ABE 513 Applied Finite Element, Finite Difference and Boundary Element Methods
 ABE 559 Agricultural and Biological Systems Simulation
 ABE 562 Boundary Element Analysis
 CH E 446 Introduction to Transport Phenomena
 CH E 453 Advanced Chemical Engineering Thermodynamics
 CH E 544 Transport Phenomena
 CH E 545 Transport Phenomena I
 CH E 546 Transport Phenomena II
 ME 411 Heat-Exchanger Design
 ME 420 Compressible Flow I
 ME 421 Viscous Flow Analysis and Computation
 ME 512 HEAT TRANSFER--Conduction
 ME 513 HEAT TRANSFER--Convection
 E MCH 560 Finite Element Analysis
- B. **BIOCHEMISTRY/CHEMISTRY**
 BMB 400 Molecular Biology of the Gene
 BMB 401 General Biochemistry
 BMB 402 General Biochemistry
 BMB 443W Laboratory in Protein Purification and Enzymology
 BMB 464 Molecular Medicine
 BMMB 514 Molecular Biology and Cellular Regulations
 BMMB 520 Carbohydrates, Lipids and their Integrated Metabolism
 BMMB 525 Proteins and Enzymes
 CHEM 410 Inorganic Chemistry
 CHEM 452 Physical Chemistry
 CHEM 525 Analytical Separations
 CHEM 526 Spectroscopic Analysis
- C. **MICROBIOLOGY**
 MICRB 412 Medical Microbiology
 MICRB 413 Microbial Diversity
 MICRB 416 Microbial Biotechnology
 MICRB 421W Laboratory of General and Applied Microbiology
 MICRB 422 Medical Microbiology Laboratory
 MICRB 450 Microbial/Molecular Genetics
- D. **NUTRITION**
 NUTR 445 Nutritional Metabolism-I
 NUTR 446 Nutritional Metabolism-II
 NUTR 451 Nutritional Throughout the Life Cycle
 NUTR 452 Nutritional Aspects of Disease
 NUTR 453 Diet in Disease
 NUTRN 511 Maternal and Infant Nutrition
 NUTRN 512 Nutrition and Aging
 NUTRN 513 Atherosclerosis and Nutrition
 NUTRN 514 Prostaglandins and Leukotrienes
 NUTRN 515 Mathematical Modeling in Nutrition
 NUTRN 581 Regulation of Nutrient Metabolism I
 NUTRN 582 Regulation of Nutrient Metabolism II
- E. **STATISTICS**
 AG 400 Biometry/Statistics in the Life Sciences (
 ENT 597G Applied Statistics Technology
 R SOC 573 Survey Data Analysis
 STAT 460 Intermediate Applied Statistics
 STAT 462 Applied Regression Analysis

STAT 480	Introduction to SAS (
STAT 500	Applied Statistics
STAT 501	Regression Methods
STAT 502	Analysis of Variance and Design of Experiments
STAT 503	Design of Experiments

F.

OTHERS	
AG BM 460	MANAGING THE FOOD SYSTEM
HORT 412W	Post-harvest Physiology
PPATH 540	Plant Disease Control
MAT SE 501	THERMODYNAMICS OF MATERIALS
MAT SE 441	Polymeric Materials I
MAT SE 442	Polymer Synthesis
MAT SE 443	Introduction to Materials Science of Polymers
MAT SE 444	Solid State Properties of Polymeric Materials

PROCEDURES AND REGULATIONS — FOOD SCIENCE DEPARTMENT RESEARCH LABORATORIES

The Department operates its research laboratories in a very open manner; that is, with appropriate permission, people are relatively free to use equipment and space in various labs as needed for their research. This is possible, however, only with the cooperation and respect of everyone working together. **Please make the proper inquiry before using equipment or removing equipment and special glassware from the laboratories.** The different laboratories and the person-in-charge are:

Food Science Building

<u>Room Number</u>	<u>Faculty</u>	<u>Room Number</u>	<u>Faculty</u>
103	Ford/Palchak	319	--
132 chemistry teaching lab/249 microbiology teaching lab		320	Dudley
134 (wet) pilot plant/135 (dry) pilot plant	Kaylegian	408	Floros
225/226	Brown	409	LaBorde
228, 243, 244 Sensory Lab Center	J. Hayes	410	Beelman
307	Anantheswaran	415	Cutter, Doores
308	Ziegler	418	Knabel
315	Coupland	419	Cutter
316	Elias	420	Doores
317	Thompson	421	Roberts
318	Lambert		

Be sure to sign out when removing equipment from another laboratory. Write down the piece of equipment borrowed and when it was borrowed. Be sure to return equipment as soon as you are finished with it and write down the date the equipment was returned.

HAZARDOUS AGENTS -- USE AND DISPOSAL

Although the Facilities Coordinator, Robert Lumley-Sapanski, is ultimately responsible for coordinating hazardous waste disposal in the Food Science department, each graduate student is responsible for the proper disposal of his/her waste. Any questions regarding proper disposal should be addressed to the Facilities Coordinator. See also Appendix A 5.

The University has policies governing the use and disposal of any material which may be hazardous to health or the environment. These policies conform to regulations promulgated by the Pennsylvania Department of Environmental Resources, the U.S. Environmental Protection Agency, the U.S. Department of Health Education and Welfare, and other pertinent government agencies.

Food Science Department Flammable Solvent and Hazardous Waste Policy -

In addition to generally accepted chemistry laboratory safety procedures, the following precautions must also be noted:

1. Flammable solvents should not be stored in refrigerators or cold rooms that are not explosion proof.
2. When working with flammable solvents, always use fume safety hoods. Under no circumstances should flammable solvent fumes be detectable in the hallways of the Food Science Laboratory or in the Meats Laboratory.
3. All flammable solvents should be stored in approved safety cans or in safety storage cabinets. There will be a cabinet in the new Food Science Building, that you will be able to store small amounts of solvents in. Appropriate arrangements can also be made for the storage of bulk solvents.
4. Disposal of waste solvents -- Solvents must not be poured down the drain. Containers in this cabinet are labeled for solvents commonly used, for example "Waste Ethyl Ether." **Everyone** is responsible for transferring their waste solvents into these containers. If there is not a container available for the solvent or mixture you are using, it is your responsibility to make arrangements for a properly labeled

container. Periodically, you must also make arrangements with the University to dispose of waste solvents. If you have questions about this procedure, you can contact the Facilities Coordinator for assistance.

Flammable Solvents and Hazardous Waste - All graduate students are responsible for the inventory and disposal of solvent waste. The primary responsibility of this student will be to assist with chemical waste generated in the teaching laboratory because each research laboratory is independently responsible for its own waste disposal. All chemical waste must be reported to the Environmental Health and Safety Office. This office is responsible for waste collection. The waste must be described on a Chemical Manifest Form. These forms are available from the Environmental Health and Safety Office.

Radioactive Materials - These materials are handled by the University Health Physics Department, 228 Academic Projects Building. All radioisotope users are required by University and federal regulations to receive basic instruction in radiation safety. The Health Physics Office at Penn State regularly offers a 4 hour radiation orientation/safety class. An exam is given at the end of this class. Any student that will be working in a laboratory containing radioisotopes — ***whether or not these isotopes will be handled by that student*** — MUST take this course. When class dates are announced, they will be posted on the door to the first floor copy room.

Biohazard Materials - This class of materials includes infectious agents and chemical carcinogens. A bound booklet published by the University Biohazards Committee is available to describe the use and disposal of Biohazards. The Department of University Safety, Safety Services has copies for distribution of the "Biohazards Control and Procedures manual" of Penn State. All biohazard waste must be autoclaved prior to collection by the Environmental Health and Safety Office. All used petri plates and tissue culture flasks must be double-bagged within Autoclave Bags for Biohazard Materials. Following autoclaving, each bag must be placed into the large, white "Biohazard" waste cans located near every autoclave in Borland. Any plastic culture ware which has not been used but is to be disposed of, may be deposited in the normal trash containers. All plastic pipettes, Pasteur pipettes, and syringes with needles which have been in contact with any viable organisms must be deposited in autoclavable sharps containers. These containers must be marked with autoclave tape, autoclaved and placed in or next to the large, white Biohazard waste cans and collected by Environmental Health and Safety for disposal. Any sharp items not in contact with any viable organisms may be disposed of in the maroon waste receptacles intended for broken glass disposal, which should be located throughout the labs.

All reusable glassware which has been in contact with viable organisms must be autoclaved within leakproof autoclavable containers before it is washed and reused. This includes all glass pipettes, flasks, beakers, plates, syringes, etc.

Hazardous Materials - This University policy covers any hazardous materials not covered by other University Policies. This policy is termed "The Hazardous Waste Disposal Policy".

Other Research Procedures:

- Human Participants in Research - University policy concerning this issue is stated in Appendix A-5.
- Care and Use of Vertebrate Animals - University policy on this subject is covered in Appendix A-6.
- General Standards of Professional Ethics - See Appendix A-1.
- Handling Inquiries/Investigations into Questions of Ethics in Research and In Other Scholarly Activities - See Appendix A-3.
- Co-authorship of Scholarly Reports, Papers and Publications - See Appendix A-4.

EMERGENCY CONTACTS:

Please contact one of the following for facility, equipment or other emergencies:

- Bob Lumley-Sapanski
- Tom Dimick
- Kim Ripka

GRADUATE STUDENT RESOURCES

International Student Services provides answers to questions and needs that are unique to international students. The office is located at 410 Boucke Building. <http://www.international.psu.edu/>

Graduate Student Association (GSA) is the representative body for all graduate students. The GSA addresses issues of concern to graduate students and elects members to sit on shared-governance bodies of the University. The GSA also organizes social events for graduate students. <http://www.clubs.psu.edu/up/gsa/>

The Office of Student Aid is a good place to begin the search for financial assistance. <http://www.psu.edu/studentaid/>

The Office for Disability Services provides information and assistance to students with disabilities. <http://www.equity.psu.edu/ods/>

The Writing Center is sponsored by the Graduate School and provides assistance to graduate students who wish to enhance their writing skills. Graduate students are invited to schedule appointments for one-on-one discussions of their writing projects. <http://www.psu.edu/dept/cew/GWC.shtml>

Penn State Escort Service is operated under the auspices of Police Services and will provide an escort for students walking on campus after dark. The escort service may be reached at 5-WALK (865-9255). <http://www.psu.edu/dept/police/escortservic.html>

Off-Campus Housing opportunities are listed in 213 HUB-Robeson Center, 865-2346. <http://www.sa.psu.edu/ocl/>

Office of Judicial Affairs is responsible for dealing with violations of the Code of Conduct including sexual assault, harassing, stalking, and physical assault. The phone number is 863-0342. <http://www.sa.psu.edu/ja/>

The Code of Conduct is available at <http://www.sa.psu.edu/ja/conduct.shtml>

The Affirmative Action Office is committed to ensuring the University maintains an environment free of harassment and discrimination. <http://www.psu.edu/dept/aaoffice/>

HUB-Robeson Center is the site for multiple student services including restaurants, a copy center, a bank (Penn State Federal Credit Union), STA Travel, a convenience store, the Penn State Bookstore, the Center for Arts and Crafts, Art Galleries, and the main information desk for the University. <http://www.sa.psu.edu/usa/hub/>

Counseling and Psychological Services (CAPS) can help students resolve personal concerns that may interfere with their academic progress, social development, and satisfaction at Penn State. Some of the more common concerns include difficulty with friends, roommates, or family members; depression and anxiety; sexual identity; lack of motivation or difficulty relaxing, concentrating or studying; eating disorders; sexual assault and sexual abuse recovery; and uncertainties about personal values and beliefs. <http://www.sa.psu.edu/caps/>

Career Services, located in the MBNA Career Services Building, is fully equipped to assist graduate students in the preparation of resumes and curriculum vitae and in developing effective interviewing skills. Career Services hosts a career fair that is open to graduate as well as undergraduate students. <http://www.sa.psu.edu/career/>

Research Protections is the office that oversees all research on human participants, animals, radioisotopes and biohazardous materials. You must have permission from this office prior to conducting research involving any of these subjects. Permission can not be obtained after the work has

begun.

<http://www.research.psu.edu/orp/>

Pasquerilla Spiritual Center is home to more than fifty spiritual organizations. The center is non-denominational and provides students with opportunities to explore ethical and spiritual issues.

<http://www.sa.psu.edu/insights/jan04/spiritual.shtml>

Problem resolution

Graduate students occasionally have difficulties with their advisors, their programs or an academic matter associated with their programs. The first step in problem resolution is always to talk with your advisor and then with the program chair or department head and then the associate dean of your college. If satisfactory resolution remains elusive, the associate dean of the Graduate School is available to provide guidance and maintain neutrality. Issues discussed during meetings with the assistant dean will remain confidential if requested by the student. Appointments may be made by calling 865-2516.

Academic Integrity

The University does not tolerate violations of academic integrity, which include but are not limited to: plagiarism, cheating, falsification of information, misrepresentation or deception. The complete policy is available at: <http://www.psu.edu/dept/ufs/policies/47-00.html#49-20>

Plagiarism

Plagiarism is often a confusing concept. At Penn State, plagiarism means taking someone's words and presenting them as your own. Cutting and pasting from a web site is considered plagiarism. Copying verbatim from any source without using quotation marks and the full reference is plagiarism. Plagiarism is a serious violation of academic integrity regardless of whether it is a homework exercise, an exam, a thesis, or a manuscript for publication.

University policies may be viewed on line. Important policies include:

Sexual Harassment (AD41)

Professional Ethics (AD47)

Parking Rules (BS04)

Intellectual Property (RA11)

<http://www.guru.psu.edu/policies/>

Graduate Student Policies are available on line

These include:

Grade mediation (G-10)

Resolution of problems (Appendix II)

Termination of program (Appendix III)

Termination of assistantship (Appendix IV)

Residency requirements (Appendix V)

<http://www.gradsch.psu.edu/policies/student.html>

FOOD SCIENCE FACULTY AND THEIR RESEARCH INTERESTS

Members of the Graduate Faculty

John D. Floros, Ph.D. (Georgia) Head and Professor of Food Science.

Research in Food Process Engineering and Packaging: Mass transfer in food processing and packaging; process, product and package optimization; alternative processes for improving food safety of minimally processed foods; active packaging; aseptic packaging; package testing; fruit and vegetable processing.

Ramaswamy C. Anantheswaran, Ph.D. (Cornell) Professor of Food Science.

Microwave processing of foods; dielectric properties of food materials; ingredient interactions during microwave heating of foods; moisture and fat migration in confectionary products; modified atmosphere and modified humidity packaging of fresh produce; rapid cooling of shell eggs.

Robert B. Beelman, Ph.D. (Ohio State) Professor of Food Science.

Control of microbiological and biochemical phenomena in post-harvest storage and processing of importance to quality and safety of products of fruits, vegetables and mushrooms, such as malolactic fermentation in wine; minimal processing technology including use of natural preservatives; functional foods from plants and mushrooms.

J. Lynne Brown, Ph.D. (Massachusetts Institute of Technology) Professor of Food

Science. Understanding consumer perception of risk associated with food ingredients and food production practices; building a model of how food choices are negotiated in different types of families over the family life cycle. Evaluation of the impact of educational programs on behavior.

John Coupland, Ph.D. (University of Leeds) Professor of Food Science.

Physical chemistry of foods. Food emulsions and biopolymers and their behavior during processing. Ultrasonic sensors.

Catherine N. Cutter, Ph.D. (Clemson) Associate Professor of Food Science.

Processing and manufacturing of muscle foods with an emphasis on food safety; pathogen reduction, application of antimicrobials or interventions to muscle foods; understanding the mechanisms of bacterial attachment to muscle foods.

Paul S. Dimick, Ph.D. (Penn State) Professor Emeritus.

Stephanie Doores, Ph.D. (Maryland) Associate Professor of Food Science.

Growth and survival of *Listeria monocytogenes* in food, particularly dairy and meat products; predicting the thermal kinetics and destructive force of microwave heating on food-borne pathogens; characterization of *Sporolactobacillus* and other *Bacillus*-*Lactobacillus* intermediates.

Edward G. Dudley, Ph.D. (Wisconsin) Assistant Professor of Food Science.

Molecular biology and genomics of foodborne bacteria, with emphasis on pathogenic *Escherichia coli* strains. Molecular mechanisms of bacterial survival and persistence in the environment and in foods; mechanisms of *E. coli* pathogenesis."

Ryan J. Elias, Ph.D. (Massachusetts) Assistant Professor of Food Science

Free radical chemistry of foods: Metal-catalyzed lipid and protein oxidation in complex foods; development and evaluation of novel antioxidants; oxidative stability of wine and beer.

Hassan Gourama, Ph.D. (Nebraska) Associate Professor of Food Science. (Berks Campus).

Significance of molds and mycotoxins in foods: Identification of molds, mold growth and mycotoxin production, control of mold contaminants and development of rapid detection methods for molds. Occurrence and control of bacterial pathogens in foods.

John E. Hayes, PhD (University of Connecticut) Assistant Professor of Food Science. Flavor perception, behavioral genetics, and food choice. Influence of genetic variation in sensation or reward on intake. Understanding factors that impact consumption of foods or beverages with strong potential health impact (alcohol, vegetables, & fat/sugar mixtures). Acquisition of preference for

initially aversive stimuli (hot chiles, black coffee, alcohol).

William R. Henning, Ph.D. (Kentucky) Professor Emeritus.

Kerry Kaylegian, Ph.D. (Cornell) Director of Industrial Outreach, Pilot Plant Manager

Primary research and outreach interests are dairy chemistry and processing. Technical support and access to the pilot plants to increase the partnership between the food industry and the Department of Food Science.

Philip G. Keeney, Ph.D. (Penn State) Professor Emeritus.

Stephen J. Knabel, Ph.D. (Iowa State) Associate Professor of Food Science.

Recovery and detection of injured foodborne pathogens; heat resistance of *Listeria monocytogenes*; control of food-borne pathogens; biological function of heat-shock proteins and their role in thermotolerance; microbiology of poultry, eggs, dairy products, fish, red meats and mushrooms.

Manfred Kroger, Ph.D. (Penn State) Professor Emeritus.

Luke LaBorde, Ph.D. (Wisconsin) Associate Professor of Food Science.

Quality and safety of minimally processed and shelf-stable fruits and vegetables. Development of food safety Extension programs for fruit, vegetable, and mushroom producers.

Joshua D Lambert, Ph.D. (University of Arizona) Assistant Professor of Food Science. Prevention of obesity, fatty liver disease and metabolic syndrome by dietary components; potential toxicities of high dose dietary polyphenols and dietary supplements; bioavailability and cancer preventive activities of dietary components

Joseph H. MacNeil, Ph.D. (Michigan State) Professor Emeritus.

Audrey N. Maretzki, Ph.D. (Pittsburgh) Professor Emeritus.

Edward Mills, Ph.D. (Purdue) Associate Professor of Dairy and Animal Science.

Meat composition and processing with emphasis on pre-rigor processing techniques.

Robert F. Roberts, Ph.D. (Minnesota) Associate Professor of Food Science.

Understanding the relationship of processing parameters to microstructure and sensory attributes of cultured dairy products and ice cream, exopolymer-production of *Lactobacillus delbrueckii* subsp. *Bulgaricus*; application of colicins as preservatives in food systems.

Donald B. Thompson, Ph.D. (Illinois) Professor of Food Science.

Food chemistry, with emphasis on starch molecular structure and granule function; nutrition, with emphasis on the effect of processing on nutrient bioavailability.

Gregory R. Ziegler, Ph.D. (Cornell) Professor of Food Science.

Foods as composite materials. Physical properties and processing of polymeric and particulate foods, with an emphasis on chocolate and confectionery products.

ELECTRONIC SUBMISSION OF THESES AND DISSERTATIONS (ETD)

Electronic submission of the final dissertation (eTD) became a requirement for all doctoral candidates at Penn State starting in fall semester 2006. Master's candidates now have the choice of submitting the final thesis either in the traditional paper format or as an electronic document. (It cannot be submitted as both.) Formatting requirements are essentially the same for a paper copy and an eTD, but the submission process itself is somewhat different. For additional information on the mechanics of eTD preparation, visit the eTD Web site (<http://www.etd.psu.edu/>).

REFERENCE PUBLICATIONS

"Graduate Degree Programs." Dean of the Graduate School, 114 Kern Building, University Park, PA 16802. <http://www.psu.edu/bulletins/whitebook/>

"Policies and Procedures." Office of the Vice-president for Student Affairs, 101 Boucke Building, University Park, PA 16802. <http://www.psu.edu/oue/aappm>

"A Guide to Graduate Life." Graduate Student Association, 111B Kern Building, University Park, PA 16802. <http://www.clubs.psu.edu/up/gsa/NGGLMAIN.html>

"Thesis Guide." Graduate Thesis Office, 115 Kern Building, University Park, PA 16802. <http://www.gradsch.psu.edu/enroll/thesisguide.html>

Appendix A 1
Administrative Policy AD47

GENERAL STANDARDS OF PROFESSIONAL ETHICS

<http://guru.psu.edu/policies/AD35.html>

Contents:

- [Purpose](#)
 - [Statements](#)
 - [Cross References](#)
-

PURPOSE:

To set forth statements of general standards of professional ethics to serve as a reminder of the variety of obligations assumed by all members of the academic community

STATEMENTS:

I. Professors, guided by a deep conviction of the worth and dignity of the advancement of knowledge, recognize the special responsibilities placed upon them. Their primary responsibility to their respective subjects is to seek and to state the truth as they see it. To this end, they devote their energies to developing and improving their scholarly competence. They accept the obligation to exercise critical self-discipline and judgment in using, extending, and transmitting knowledge. They practice intellectual honesty. Although they may follow subsidiary interests, these interests must never seriously hamper or compromise their freedom of inquiry.

II. As teachers, professors encourage the free pursuit of learning in their students. They hold before their students the best scholarly standards of their respective disciplines. They demonstrate respect for the student as an individual, and adhere to their proper role as intellectual guides and counselors. They make every reasonable effort to foster honest academic conduct and to assure that their evaluations of students reflect the students' true merit. They respect the confidential nature of the relationship between professor and student. They avoid any exploitation of students for private advantage and acknowledge significant assistance from them. They protect their students' academic freedom.

III. As researchers/scholars, professors recognize that their goal is to discover, develop, and communicate new understanding. This goal is rarely achieved without making use of knowledge gained from others. Researchers must always exercise gracious and appropriate recognition of published work in the literature, conversations with colleagues, and the efforts of students who work under the researchers' guidance. They must be scrupulous in presentation of their own data; it must be verifiable as a result of the highest standards in data gathering techniques. They must be extremely careful in the use of data reported by others, especially if used in the formation of broad comparative or contradictory hypotheses, since they may not know of any compromising circumstances in such data gathering. They must be comprehensive in consideration of work with human subjects; they must have thoroughly researched all procedures, must have informed individuals involved of all aspects of their cooperation, and must report all responses accurately, both positive and negative results. As open-minded researchers, when evaluating the work of others, they must recognize the responsibility to allow publication of theories or experiments that may contradict their own findings, as only by free inquiry and dissemination of all facts will the fruits of the labor of the whole community be allowed to mature.

IV. As colleagues, professors have obligations that derive from common membership in the community of scholars. They respect and defend the free inquiry of their associates. In the exchange of criticism and ideas they show due respect for the opinions of others. They acknowledge their academic debts and strive to be objective in their professional judgment of colleagues. They accept their share of faculty responsibilities for the governance of their institution.

V. As members of their institution, professors seek above all to be effective teachers and scholars. Although they observe the stated regulations of the institution, provided the regulations do not contravene academic freedom, they maintain their rights to criticize and seek revision. They determine the amount and character of the work they do outside their institution with due regard to their paramount responsibilities within it. When considering the interruption or termination of their service, they recognize the effect of this decision upon the programs of the institution and give due notice of their intentions.

VI.As members of the community, professors have the rights and obligations of all citizens. They measure the urgency of these obligations in the light of their responsibilities to their respective subjects, to their students, to their profession, and to their institution. When they speak or act as private persons they avoid creating the impression that they speak or act for their respective colleges or the University. As citizens engaged in a profession that depends upon freedom for its health and integrity, professors have an articular obligation to promote conditions of free inquiry and to further public understanding of academic freedom.

All tangible assets (including equipment, software, audio-visual material, theatrical costumes, etc.) owned, leased or operated by the University are to be used in the conduct of University programs and activities at University owned or leased locations.

>University departments may offer services only to other University departments and only for University-related work. Permitted work includes, instructional work for credit and non-credit courses, conferences, workshops, institutes, training programs, etc.; support for faculty research, publications, presentations, and outreach activities; services for recognized student organizations; and services for other organized student extramural activities.

University tangible assets and services may not be used for personal gain, by employees for purposes outside the scope of their employment (see also Policy [HR35](#)), or by students beyond their instructional requirements.

CROSS REFERENCES:

Additional Policies to refer to would include:

[RA10](#) - Handling Inquiries/Investigations into Questions of Ethics in Research and in Other Scholarly Activities,

[RA13](#) - Coauthorship of Scholarly Reports, Papers and Publications,

[HR35](#) - Public Service by Members of the Faculty and Staff,

>[HR91](#) - Conflict of Interest, and

>[RA14](#) - Use of Human Subjects in Research.

Effective Date: May 10, 1996
 Date Approved: June 10, 1996
 Date Published: June 24, 1996 (Revision History added June 14, 2006)

Most Recent Changes :

- June 14, 2006 - Revision History added.

Revision History (and effective dates):

- May 10, 1996 - Former policy had been HR95 (previously PS95). Relocated to Administrative Policy section.
- March 24, 1989 - Title changes, plus addition of "Cross Reference" section.
- October 20, 1986 - New Policy.

Appendix A 2
Payroll Policy PR06

GRADUATE ASSISTANTS

<https://guru.psu.edu/policies/psu/PR06.html>

Contents:

- [Purpose](#)
- [Types and Salary Ranges](#)
- [Eligibility](#)
- [Offer of Appointment](#)
- [Responsibilities](#)
- [Length of Appointments](#)
- [Health Insurance Benefit](#)
- [Forms to be Completed By and For Graduate Assistants](#)
- [Submission of Forms for the Appointment of Graduate Assistants](#)
- [Submission of Forms for the Reappointment of Graduate Assistants](#)
- [Credits That May be Scheduled](#)
- [Evaluation and Performance](#)
- [Payment of Stipends](#)
- [Rates Charged to Funding Sources](#)
- [Changes](#)
- [Termination](#)

PURPOSE:

To state the Graduate Assistant Policy of the University.

TYPES AND SALARY RANGES:

Graduate assistantships are of three types: quarter-time, half-time, and three-quarter-time. The expected duration of assigned tasks is the same for all graduate assistants within the same type. Thus, for all quarter-time graduate assistants, irrespective of stipend, 10 hours of regular work per week are expected; for all half-time assistants, 20 hours; and for all three-quarter-time assistants, 30 hours. A semester normally consists of 18 full weeks, and extended summer session 12 weeks. Appointments are to be made at one of several grades in consideration of experience and qualifications of the individual. Refer to the [Table of Stipends for Graduate Assistants](#) and the [Penn State Graduate Degree Programs Bulletin](#) for further information.

Within any department or other administrative unit of the University, there shall be the same pay for the same work for graduate assistants regardless of the field of study in which the student is enrolled. This policy shall not preclude a scale of stipends based on merit, seniority or degree candidacy.

ELIGIBILITY:

A candidate for graduate assistantship must be eligible for admission to the Graduate School.

OFFER OF APPOINTMENT:

Every Graduate Assistant shall be offered his or her appointment each year in writing, using a standard form, the [Terms of Offer of a Graduate Assistantship](#), together with an individual letter of transmittal. The letter will indicate any extensive duties other than professional and preprofessional they will be called upon to perform.

RESPONSIBILITIES:

A graduate assistant may assist in classroom or laboratory instruction, in research or in other work. The tasks assigned to a graduate assistant often are identical in nature to those required for the advanced degree sought. If the duties are identical in nature to those required for the advanced degree sought, it must be noted in the Terms of Offer of a Graduate Assistantship, the individual letter of transmittal and on the appropriate IBIS appointment, reappointment or change form. Additional compensation is paid to a graduate assistant by the University for additional hours of work only with special, advance approval of the administrative head of the academic unit in which the assistantship is held, and of the chair of the student's graduate academic program, and provided that such compensation is not for additional hours of work on the assigned assistantship duties.

LENGTH OF APPOINTMENTS:

The appointment may be for the summer session or one or two semesters and must terminate on or before the end of the spring semester in any fiscal year. When an appointment will terminate before the end of the spring semester, the appointee should be informed of this when offered the assistantship.

HEALTH INSURANCE BENEFIT:

International Graduate Assistants are required to have health insurance coverage for themselves and their dependents in the United States. For domestic Graduate Assistants, health insurance is optional. The University provides a health insurance benefit as part of the assistantship contract. The University will pay a percentage of the annual premium for the Penn State Student Health Insurance Plan. The remaining percentage will be automatically deducted from the student's assistantship stipend. The University will not supplement, nor will a payroll deduction be made, for insurance policies other than the Penn State Student Insurance Plan.

International Graduate Assistants who have adequate alternate medical coverage and who do not wish to be enrolled in the Penn State Student Health Insurance Plan must submit a waiver application. In order to be granted a waiver, alternate plans must meet certain standards as established by the University Student Insurance Committee. This Committee will approve or disapprove the waiver application.

International Graduate Assistants who do not apply for a waiver will be automatically enrolled in the Penn State Student Insurance Plan.

(NOTE: Applications for a waiver demonstrating adequate alternate insurance must be submitted on a yearly basis each fall.)

Domestic Graduate Assistants will automatically enrolled in the Penn State Student Insurance Plan. Domestic Graduate Assistants who do not wish to be enrolled in the Penn State Student Insurance Plan must decline the insurance. Dependent health insurance coverage for domestic Graduate Assistants must be submitted on a yearly basis each fall.

For further information, contact the Student Insurance Office, 865-7467.

FORMS TO BE COMPLETED BY AND FOR GRADUATE ASSISTANTS:

A graduate assistant is appointed by completing an "NAPP/GFSA" in IBIS. Each appointment is approved, based upon the budget administrator's recommendation and certification of eligibility by the Dean of the Graduate School.

According to Policy [HR30](#), the budget executive is responsible for providing proof that there are no subversive persons employed in his/her area of responsibility.

In accepting an appointment as a graduate assistant, the recipient is required to complete the following forms:

1. [Employee's Withholding Allowance Certificate - Form W-4](#). Also, see Policy [PR13](#).
2. [Employment Eligibility Verification \(INS Form I-9\)](#).
3. [University Intellectual Property Agreements](#).
4. [Salary Deposit Request](#).

SUBMISSION OF FORMS FOR THE APPOINTMENT OF GRADUATE ASSISTANTS:

The Employee's Withholding Allowance Certificate (W-4) and Salary Deposit Requests are attached and submitted together to the Financial Officer. The forms are required in the Payroll Office **one month before** the first pay date each semester/session. The "GFSA" is approved and processed electronically.

Appointments are to be submitted in accordance with stipends authorized in the Table of Stipends for Graduate Assistants.

SUBMISSION OF FORMS FOR THE REAPPOINTMENT OF GRADUATE ASSISTANTS:

The "GRAD" is submitted with the block "Reappointment" marked. It is not required that a new Employee's Withholding Allowance Certificate (W-4) be completed if the graduate assistant's status (i.e., number of withholding exemptions, local earned income tax, address and/or name) is unchanged, providing that the graduate assistant's original appointment has not been terminated for more than a year.

CREDITS THAT MAY BE SCHEDULED:

The privileges of graduate study are the same for all graduate assistants within the same type. The table that follows shows the number of credits that normally may be scheduled for **each** semester or session.

	Fall/Spring	Summer
Graduate Assistant - Quarter-Time	9-14	5-7
Graduate Assistant - Half-Time	9-12	4-6
Graduate Assistant - Three-Quarter-Time	6-8	3-5

The credits specified are the number which the appointee is ordinarily expected to carry. With approval of the person to whom the student is responsible for his or her assignment, the credit load of a graduate assistant may be adjusted to take into account unusual departmental service loads in particular semester/sessions, provided:

- The credit load and the service load are properly balanced in each semester and the total credit load over a period of time conforms with the specified limits.
- The total number of credits scheduled during the interval of appointment is consistent with the type of appointment.
- The student is assigned no more than the normal work load during the first semester/session as a graduate student at the University, thus permitting him or her to be primarily a student during this period.

EVALUATION AND PERFORMANCE:

Each graduate assistant shall be supervised and assisted in assigned tasks until they gain experience and skill enabling them to take responsibility. Each graduate assistant shall have his or her work evaluated at least once each year, and the supervisor shall discuss with them how well they are considered to have performed.

PAYMENT OF STIPENDS:

All graduate assistant appointees are paid monthly. Direct salary deposits shall be mandatory and a condition of hire.

See the Schedule of Graduate Assistant Pay Dates, for pay dates and the portion of the stipend paid each month of the appointment.

Graduate assistants who miss the first regular monthly payroll may request a salary advance (of up to 70% of gross) through the Financial Officer. The Financial Officer will process an IBIS Special Request for Check for the advance. The subsequent payment will deduct the amount of advance.

Payments made in June for Summer Session are pre-payments against the following year's budget.

RATES CHARGED TO FUNDING SOURCES:

Graduate Assistant tuition will be charged to sponsored agreements at an average in-state rate.

Flat rate dissertation fees will be charged to a sponsored agreements for assistantships.

Tuition coverage through the Tuition Assistance Program is not available during any period for which the student is appointed on an assistantship.

CHANGES:

All changes to the appointment are accomplished by submitting an IBIS "*GRAD*."

TERMINATION:

All graduate assistant appointments are terminated automatically upon expiration without submitting termination forms; however, early terminations must be made by submitting an IBIS "*TRMN/GFST*."

The amount of final pay for an early termination is to be determined by subtracting the amount of stipend paid to the graduate assistant from the number of weeks of service rendered to the date of termination. If additional days are involved, the daily rate of 1/7th of the weekly rate applies.

Effective Date: March 24, 2005
Date Approved: March 11, 2005
Date Published: March 23, 2005

Most Recent Changes:

- March 24, 2005 -
 - In RESPONSIBILITIES section, added verbiage for proper completion when the tasks assigned to a graduate assistant are identical in nature to those required for the advanced degree sought.
 - In the HEALTH INSURANCE BENEFIT section, added verbiage that distinguished benefits of international Graduate Assistants and domestic Graduate Assistants.
 - Changed fall/spring credits for half-time Graduate Assistants from 8-11 to 9-12.
 - Editorial changes made throughout the policy, where applicable, to remove references to the General Forms Usage Guide.

Revision History (and effective dates):

- March 6, 2003 -
 - Provisions moved from Policy BT03 to this policy:
 - Payments made in June for Summer Session are pre-payments against the following year's budget.
 - Appointments are to be submitted in accordance with stipends authorized in the Table of Stipends (Appendix 5 of the General Forms Usage Guide).
 - Credits that may be scheduled by half-time graduate assistants increased from 8-11 to 9-12.

Appendix A 3
Research Administration Policy RA10

HANDLING INQUIRIES/INVESTIGATIONS INTO QUESTIONS OF ETHICS IN RESEARCH AND IN OTHER SCHOLARLY ACTIVITIES

<http://guru.psu.edu/policies/RA10.html>

Contents:

- [Purpose](#)
- [Preamble](#)
- [Policy](#)
- [Definition of Terms](#)
- [Procedure](#)
- [Reporting To The Sponsor](#)
- [Cross-References](#)

PURPOSE:

To establish a means to handle inquiries and/or investigations into questions of ethics related to research and other scholarly activities.

PREAMBLE:

Public trust in the integrity and ethical behavior of scholars is essential if research and other scholarly activities are to play their proper role in the University and in society. The maintenance of high ethical standards is a central and critical responsibility of faculty and administrators of academic institutions. Policy [AD47](#) sets forth statements of general standards of professional ethics within the academic community.

POLICY:

Violation of University policy shall be considered to be a serious breach of the trust placed in each member of the faculty and staff, as well as all students, and may result in the imposition of disciplinary sanctions, including, but not limited to, dismissal from employment or enrollment. Misconduct in research or other scholarly activities is prohibited and allegations of such misconduct in research shall be investigated thoroughly and resolved promptly.

Faculty and staff members and students have a personal responsibility for complying with this policy and for assisting their associates in continuing efforts to avoid any activity which may be considered in violation of University policy.

DEFINITION OF TERMS:

Research Misconduct:

(1) fabrication, falsification, plagiarism or other practices that seriously deviate from accepted practices within the academic community for proposing, conducting, or reporting research or other scholarly activities;

(2) callous disregard for requirements that ensure the protection of researchers, human participants, or the public; or for ensuring the welfare of laboratory animals;

(3) failure to disclose significant financial and business interest as defined by Penn State Policy [RA20](#), *Individual Conflict of Interest*;

(4) failure to comply with other applicable legal requirements governing research or other scholarly activities.

Research misconduct does not include disputes regarding honest error or honest differences in interpretations or judgments of data, and is not intended to resolve bona fide scientific disagreement or debate.

Allegation is defined as any oral or written statement of possible research misconduct made to an institutional official.

Inquiry is defined as information-gathering and preliminary fact-finding to determine whether an allegation or apparent instance of research misconduct warrants an investigation.

Investigation is defined as a formal examination and evaluation of relevant facts to determine whether research misconduct has taken place or, if research misconduct has already been confirmed, to assess its extent and consequences and determine appropriate action.

Budget Executive - Those individuals who are responsible to the President, Executive Vice President and Provost, or a Vice President for a section of the budget. These individuals are normally the President's administrative staff, academic Deans, and Chancellors. The budget executive approves transactions at the upper dollar levels and specified categories, affirming the programmatic need for the action and that the action is appropriate within University Policies and Guidelines.

Budget Administrator - Those individuals designated by the Budget Executive as being responsible for operating and controlling specific budget areas within the Budget Executive's administrative area. These individuals approve documents in their own name within the limits of the authorization policy stated below. This group normally includes associate deans, division heads, and department heads. The budget administrator approves transactions at the specified dollar levels and categories, affirming the programmatic need for the action and that the action is appropriate within University Policies and Guidelines.

PROCEDURE:

1. Anyone having reason to believe that a member of the faculty, staff, or a member of the student body has engaged in misconduct in research or other scholarly activity should discuss the situation with his or her Budget Administrator or Budget Executive, or the Vice President for Research. Allegations may be the result of misinterpreted communication or misunderstanding and therefore, they may be subject to resolution on a collegial basis, through discussion(s) designed to ascertain whether there is reason to believe that research misconduct may have occurred in violation of this policy. If the results of such discussion(s) confirm the possibility of research misconduct in violation of this policy, the matter should be reported, in writing, to the Vice President for Research. Upon receipt of written allegations of research misconduct, the Vice President for Research shall promptly provide a copy of such written allegations to the Budget Executive and Budget Administrator of the area in which the accused individual is primarily employed, and the Director of The Office For Research Protections. In addition, the Vice President for Research shall notify the accused individual of the alleged violation(s) of University policy.

The foregoing procedure shall also be followed in the event that an investigatory Committee appointed in accordance with Section 5 hereof obtains information that any individual, other than the one initially under investigation, has allegedly engaged in research misconduct.

2. Upon receipt of the written allegation(s) of research misconduct, the Vice President for Research, the Director of the Office for Research Protections, and the Budget Executive of the area in which the accused individual is primarily employed, in consultation with the Budget Administrator of the area in which the accused individual is primarily employed, shall immediately conduct an inquiry and shall take all necessary steps to protect government or industrial research funds and insure that the purpose of the Federal and industrial support are being carried out. If an emergency situation arises (e.g., illness, out of the country, etc.) that prevents the Budget Executive or Budget Administrator to participate in all or part of the inquiry, the Vice President for Research shall appoint an appropriate replacement. Relevant research records, documents, and/or materials shall be immediately sequestered. If the person(s) designated to conduct the inquiry does not have the necessary and appropriate technical expertise or background in the field of question, technical consultants (from within the University whenever possible) should also be appointed to assist in the inquiry. The inquiry must be completed within 60 calendar days of its initiation unless circumstances clearly warrant a longer period (up to 30 additional days). The Vice President for Research shall provide written notice to the accused individual that an inquiry shall be conducted as to specified allegation(s) of research misconduct. Precautions against real or apparent conflict of interest shall be taken, including, if necessary, referral by the Vice President for Research to another University officer or third party.

The privacy of the accused and the accuser, and the confidentiality of information shall be protected to the maximum extent possible.

3. A written report shall be prepared that states what evidence was reviewed, a copy of all interview transcripts and/or summaries, and includes the conclusions of the inquiry. The accused individual(s) shall be given a copy

of the report of inquiry. If they comment on that report, their comments may be made part of the record. If the inquiry takes longer than 60 days to complete, the record of inquiry shall include documentation of the reasons for exceeding the 60 day period.

4. Documentation in sufficient detail to permit a later assessment, if necessary, of the reasons for determining that an investigation was not warranted shall be maintained for a period of at least three years by the Vice President for Research, and shall be made available upon request to any involved Federal agencies.
5. If it is determined from the inquiry that the research misconduct allegation(s) warrant further investigation, the Vice President for Research, shall;
 - a. in consultation with the Budget Executive and Budget Administrator of the area in which the accused individual is primarily employed, appoint an ad hoc Investigatory Committee composed as provided herein,
 - b. refer the research misconduct charge to the Committee,
 - c. take such interim action as may be necessary to ensure the integrity of research or other scholarly work, the rights and interests of research participants and the public, and the observance of legal requirements or responsibilities, and
 - d. provide written notification to the accuser and the accused individual of the initiation of the investigation and of the misconduct allegation(s) to be investigated.

Thereafter, the Director of The Office For Research Protections shall provide on-going administrative support and assistance to the investigatory committee.

6. The Committee shall consist of at least five tenured University faculty members, each of whom should have no conflict of interest and be competent, in the judgment of the Vice President for Research, to evaluate the questions before the Committee. External scholars or persons with relevant expertise may be consulted by the Committee where warranted by the nature of the field or by the nature of the allegation(s).
7. Within 30 days of the completion of the inquiry, the Committee shall initiate and conduct a prompt and thorough investigation in order to ascertain the facts of the case and to determine whether the accused individual has violated University policy. The Committee shall provide the accused individual the opportunity to be heard by the Committee, through presentation of statements and/or documents with respect to the research misconduct allegation(s), as the accused person prefers.
8. The investigation normally will include examination of all documentation, including but not necessarily limited to relevant research data and proposals, publications, correspondence, and memoranda of telephone calls. Whenever possible, interviews should be conducted of all individuals involved, including the accused and the accuser(s), as well as other individuals who might have information regarding key aspects of the allegations; complete summaries of these interviews should be prepared, provided to the interviewed party for comment or revision, and included as part of the investigatory record.
9. Upon conclusion of the investigation, the Committee shall prepare a preliminary investigation report setting forth its findings with respect to the research misconduct allegation(s) and the grounds on which such findings were based. A copy of the preliminary investigation report and a copy of all interview transcripts and/or summaries shall be provided to the accused individual, who shall be permitted to present a written response to said report within fourteen days. Upon expiration of the fourteen-day response period, the Committee shall prepare a final investigation report.
10. Requirements for a finding of misconduct (42 Code of Federal Regulations, Part 93.104):
 - a. There must be a significant departure from accepted practices of the relevant research community;
 - b. The misconduct must have been committed intentionally, knowingly, or recklessly;
 - c. The allegation must have been proven by a preponderance of the evidence.
11. If a majority of the Committee finds that the individual has violated University policy and committed misconduct, it shall recommend an appropriate course of action to the Vice President for Research, which may include disciplinary sanctions and which shall include adequate steps to ensure that the University meets its obligations, if any, to third parties affected by the violation; these third parties shall include co-investigators and coauthors, granting agencies and other research sponsors, professional journals and relevant clients.

12. The Vice President for Research shall consider the Committee's findings and recommendations, and in consultation with the Budget Executive and Budget Administrator of the area in which the accused individual is primarily employed, prepare a written decision upholding or rejecting, in whole or in part, the findings and recommendations in the Committee's final investigation report. The Vice President for Research shall provide a copy of the written decision to the accused individual.
- a. If the Vice President for Research finds University policy has been violated based on the preponderance of the evidence, he or she shall;
 - i. take all appropriate actions to ensure that the University meets its obligations to all parties affected by the violation, and;
 - ii. notify the Budget Executive and Budget Administrator of the area in which the accused individual is primarily employed, in writing, of the actions to be taken and will notify all affected parties.
 - b. If the Vice President for Research finds University policy not to have been violated, either at the inquiry stage or after a full investigation, these proceedings will be closed and the accused individual and the accuser so notified in writing. Diligent efforts should be undertaken, as appropriate, to restore the reputations of the accused when allegations are not confirmed, and also diligent efforts should be undertaken to protect the positions and reputations of those who, in good faith, make allegations of research misconduct.
- Throughout these proceedings, the privacy of the accused and the accuser, and the confidentiality of the information related to the proceedings shall be protected to the maximum extent possible.
13. If an investigation is undertaken pursuant to this policy, the investigation should normally be concluded, and a decision made by the Vice President for Research, within 120 days from the initiation of the investigation.
14. All records related to research and scholarly ethics investigations shall be retained in the Office of the Vice President for Research for a minimum of ten (10) years.

REPORTING TO THE SPONSOR:

The Vice President for Research shall take steps to notify, and keep informed, research sponsors in compliance with applicable laws, regulations and agreements. In particular, research sponsors shall be:

- a. informed immediately in writing if an initial inquiry supports a formal investigation;
- b. kept informed during such a formal investigation;
- c. notified immediately, or as required during an inquiry or investigation;
 - i. if the seriousness of apparent research misconduct warrants,
 - ii. if immediate health hazards are involved,
 - iii. if the research sponsor's resources, reputation, equipment, or other interests require protection,
 - iv. if Federal action may be needed to protect the interest of a subject of the investigation or of others potentially affected,
 - v. if the scientific community or the public should be informed, or
 - vi. if there is reasonable indication of possible criminal violation, in which event notification must be made within 24 hours of obtaining that information.

The Vice President for Research will notify other outside parties as may be appropriate, including publishers or institutions with whom the individual found to have committed research misconduct is now or has been professionally affiliated.

If the sponsor is the Department of Health and Human Services, the Director of the Office of Research Integrity (ORI) must be notified within 24 hours of obtaining any reasonable indications of possible criminal violations. If an investigation cannot be completed within 120 days, a written request for an extension must be submitted to ORI including an explanation for the delay that includes an interim report on the progress to date. If an inquiry or an investigation is planned to be terminated prior to completion, a written report of such planned termination, including a description of the reasons for such termination, shall be made to the Director of ORI.

Where applicable, all documentation substantiating the findings hereunder shall be made available to the Federal agency involved, and in the case of HHS, to the Director of ORI.

CROSS-REFERENCES:

Other Policies in this Manual should also be referenced, especially the following:

RA11 Patents and Copyrights (Intellectual Property)

RA12 Technology Transfer and Entrepreneurial Activity (Faculty Research)

RA14 The Use of Human Participants in Research

Effective Date: May 21, 2007

Date Approved: May 17, 2007

Date Published: May 18, 2007 (editorial changes February 24, 2010)

Most Recent Changes:

- February 24, 2010 - Editorial changes. Changed the title of "Senior Vice President for Research and Dean of the Graduate School" TO "Vice President for Research," along with capitalizing Budget Executive and Budget Administrator references, where necessary. Updated links and other policy titles throughout the policy.

Revision History (and effective dates):

- January 1, 2010 - Editorial changes. Title changed FROM "Senior Vice President for Research and Dean of the Graduate School" TO "Vice President for Research and Dean of the Graduate School," to reflect position changes, effective January 1, 2010.
- November 7, 2007 - Editorial changes; revised title in "Definitions" section- changed "Campus Executive Officers" to "Chancellors."
- May 21, 2007 - Revisions to the POLICY, DEFINITIONS and PROCEDURES sections to clarify the handling of inquiries and investigations.
- November 8, 2006 - Editorial change - changed Vice President for Research to Senior Vice President for Research.
- November 11, 2003:
 - Purpose revised to emphasize ethic related to research and other scholarly activities.
 - Under the DEFINITIONS section: changed "misconduct" to "research misconduct" and updated the definition thereof; added a definition for "allegation."
 - For the reporting and oversight of misconduct investigations, changed "budget administrator" to "Vice President for Research."
 - Provided for sequestering of relevant documents and records.
 - Other editorial clarifications.
- February 20, 1998 - Relocating and renumbering Policy RA10 from AD04, and updated RA11, RA12, and RA14 locations.

Appendix A 4
Research Administration Policy RA13

CO-AUTHORSHIP OF SCHOLARLY REPORTS, PAPERS AND PUBLICATIONS

<http://guru.psu.edu/policies/ra13.html>

Contents:

- [Purpose](#)
- [Guidelines](#)
- [Cross References](#)

PURPOSE:

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

GUIDELINES:

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 coauthor 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 coauthor without the person's consent. Exceptional circumstances, such as death or inability to locate a coauthor, 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 public action might be more appropriate than co-authorship.

(2) In cases of theses for advanced degrees, if any publication derived from the thesis is not published with the degree recipient as sole author, then that person should be listed as coauthor. In no instance should publications derived from a thesis be published under the sole authorship of the thesis adviser.

(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 coauthor 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 coauthor has responsibility. If a potential coauthor 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 coauthors, the individual should decline co-authorship.

CROSS REFERENCES:

Other policies may also be referenced, especially the following:

[AD47](#) - General Standards of Professional Ethics.

[RA10](#) - Handling Inquiries/Investigations into Questions of Ethics in Research and in Other Scholarly Activities

Effective Date: May 23, 2007
Date Approved: May 17, 2007
Date Published: May 22, 2007 (editorial changes February 25, 2010)

Most Recent Changes:

- February 25, 2010 - Minor editorial changes made throughout the policy.

Revision History (and effective dates):

- May 23, 2007 - Revisions to Guideline #2, to clarify publishing particulars involving theses for advanced degrees.
- February 20, 1998 - Relocated and renumbered Policy RA13 from AD48, and updated RA10 location.

Appendix A 5
Research Administration Policy RA14

THE USE OF HUMAN PARTICIPANTS IN RESEARCH

<https://guru.psu.edu/policies/RA14.html>

Contents:

- [Purpose](#)
- [Policy](#)
- [Definitions](#)
- [Applicability](#)
- [Authority of the IRB](#)
- [Types of Review](#)
- [IRB Application Procedure](#)
- [Other Institutions](#)
- [Regulatory Agencies](#)
- [Research Agreement, Financial Information and Conflict of Interest](#)
- [Principal Investigator Responsibilities](#)
- [Cross References](#)

PURPOSE:

The Pennsylvania State University (PSU) is positively and unequivocally committed to the promotion, encouragement, and facilitation of academic and clinical research in the broad area of general or specific measurements of human development, health, and performance. PSU is dedicated to the ethical treatment of human participants in all research activities conducted under the auspices of this institution and assumes responsibility for safeguarding their rights and welfare. The purpose of this policy is to outline PSU's standards for the protection of human participants of research.

POLICY:

PSU's policy for the protection of human participants is guided by ethical principles, Federal law, and institutional standards. The guiding ethical principles are embodied in the Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research (<http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.htm>). Compliance with this policy provides protections for human participants as mandated by applicable laws, regulations, and standards of local, state and Federal government agencies concerning the protection of human participants, including the U.S. Code of Federal Regulations (CFR):

- Title 45 CFR 46, Protection of Human Subjects, U.S. Department of Health and Human Services (DHSS), Office for Human Research Protections (OHRP) (<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm>) and
- Title 21 CFR 50, 56, 312, 600 and 812 of the Food and Drug Administration (FDA) (<http://www.fda.gov/oc/ohrt/irbs/>)

PSU's policy for the protection of human participants also meets high institutional standards in its ethical principles and regulations. Institutional requirements are mandated for all research, not just federally funded research.

The Institutional Review Board (IRB) is a specifically constituted administrative review board established for the purpose of protecting the rights and welfare of human participants who are recruited to participate in research. The jurisdiction of the IRB relates to the institution with which it is affiliated.

An Assurance is kept on file with the Department of Health and Human Services' (DHHS) Office for Human Research Protections (OHRP) covering all PSU colleges and campus locations, with the exception of the College of Medicine (COM), which maintains a separate Assurance with OHRP. These Assurances set forth the policies for the protection of human participants, and include the duties and procedures of the IRBs.

PSU-related research, as defined by 45 CFR 46 and 21 CFR, 50, 56, 312, 600, and 812, involving human participants directly or through the use of records, tissues, or other indirect means must receive prior review and approval before any project can begin. Research involving human participants may not be conducted within or on behalf of PSU without prior review and approval of the project prior to involving human participants.

Thus, the IRB is the final authority for safeguarding, as defined by 45 CFR 46 and 21 CFR, 50, 56, 312, 600, and 812, research involving human participants. Failure to have research involving human participants reviewed and approved by the IRB is a violation of PSU policy, Federal regulations, and the Assurance. In addition to review by the IRB, research may be subject to further appropriate review and approval or disapproval by the officials of the institution; however, those officials may not override a decision by the IRB to disapprove research.

DEFINITIONS:

This policy defines “human research” or “research involving human participants” as any activity that meets the DHHS definition of “research” which involves persons who meet the DHHS definition of “human participant,” OR any activity that meets the FDA definition of “research” which involves persons who meet the FDA definition of “human participant.”

“**Research**” under the DHHS regulations means a “systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge” (45 CFR §46.102[d]) (<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm#46.102>).

“**Human participant**” under the DHHS regulations means a “living individual about whom an investigator (whether professional or student) conducting research obtains: (1) data through intervention or interaction with the individual or (2) identifiable private information” (45 CFR §46.102[f]) (<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm#46.102>). Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the participant or the participant’s environment that are performed for research purposes. Interaction includes communication or interpersonal contact between investigator and participant. Private information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individual identifiable (i.e., the identity of the participant is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human participants.

“**Research**” under the FDA regulations means any experiment that involves a test article and one or more human participants and that either is subject to requirements for prior submission to the Food and Drug Administration under section 505(i) or 520(g) of the act, or is not subject to requirements for prior submission to the FDA under these sections of the act, but the results of which are intended to be submitted later to, or held for inspection by the FDA as part of an application for a research or marketing permit. The terms research, clinical research, clinical study, study and clinical investigation are deemed synonymous for purposes of the FDA regulations (21 CFR §56.102[c]) (<http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfCFR/CFRSearch.cfm?fr=56.102>). In practice, all uses of drugs or medical devices constitute “research” under this definition unless the drug or device is both approved and being used in the course of medical practices. In addition, all uses of FDA-regulated test articles in which the results will be submitted to the FDA or held for inspection by the FDA constitute “research” under this definition.

“**Human participant**” under the FDA regulations means an individual who is or becomes a participant in research, either as a recipient of a test article or as a control. For medical device studies in which data will be submitted to the FDA or held for inspection by the FDA, a human participant includes a human on whose specimen an investigational device is used.

“**Minimal risk**” means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests (45 CFR §46.102[j]) (<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm#46.102>).

“**Research Agreement**” is defined as the mutually binding legal document between the funding entity and the University specifying the terms and obligations under which the externally-funded project services will be conducted.

APPLICABILITY:

Research conducted at PSU includes both biomedical research and social science research. Due to the large volume and diverse nature of research conducted at PSU, multiple IRBs have been established in order to provide the review

and oversight for all research involving human participants. The committee members are appointed by the Vice President for Research or the Associate Vice President for Health Sciences Research to recommend and implement policies and regulations for the protection of human participants in research.

1. PSU has established two IRBs located at the University Park Campus: (a) the Social Science IRB and (2) the Biomedical IRB. These IRBs review all of the research conducted by investigators from all PSU colleges and campus locations except the COM.
2. Penn State's College of Medicine located at the Penn State Milton S. Hershey Medical Center (PSHMC) has established four IRBs to review and provide oversight for biomedical and social science research projects conducted at the COM and PSHMC. PSHMC has a separate Assurance with OHRP and has designated the COM IRBs for the review of research under this Assurance. PSHMC has a written agreement with the COM documenting this reliance on the COM IRBs.

AUTHORITY OF THE IRB:

The IRB has the authority to review all human participant research regardless of funding, including the categories exempted or waived by OHRP or FDA regulations, provided that one or more of the following apply to all or part of the research:

- The research is sponsored by PSU or PSHMC; or
- The research is conducted by or under the direction of any employee or agent of PSU or PSHMC in connection with his or her institutional responsibilities; or
- The research is conducted by or under the direction of any employee or agent of PSU or PSHMC using any property or facility of PSU or PSHMC; or
- The research involves the use of PSU's or PSHMC's non-public information to identify or contact human research participants or prospective participants.

The IRB has the authority to:

- Approve, require modification to secure approval, disapprove all research activities overseen and conducted by the organization;
- Suspend or terminate IRB approval of research that is not being conducted in accordance with IRB requirements or that has been associated with unexpected serious harm to participants;
- Observe, or have a third party observe, the consent process; and
- Observe, or have a third party observe, the conduct of the research.

The IRB will review research performed by PSU or PSHMC employees and students at other institutions or sites, and research performed at PSU or PSHMC by investigators who are not affiliated with PSU or PSHMC. When research reviewed by the IRB is conducted at or in cooperation with another entity, all requirements of the IRB review will remain in effect for that research.

The IRB will review and approve research conducted outside the United States of America by PSU or PSHMC employees or students even if the foreign research receives no U.S. government funding. Such collaborative research activities must meet high ethical standards similar to those required within this policy. The IRB may approve such research, provided it determines that (a) the research conforms to proper codes of ethics (e.g., the *Declaration of Helsinki* or the *Belmont Report*), and (b) the research is approved by the foreign research site's ethical review authority. Requirements for the informed consent process will follow the laws and customs of the country in which the research is being conducted. If a U.S. Department or Agency funds the research, then it is probable that the foreign research site will need to file an FWA application. Instructions and templates for foreign research are available from OHRP (Assurances and IRB Registration at <http://www.hhs.gov/ohrp/>).

TYPES OF IRB REVIEW:

Three levels of IRB review/approval for research involving human participants have been established: (1) FULL BOARD REVIEW, (2) EXPEDITED REVIEW, and (3) EXEMPT REVIEW. Each type of review is specifically defined in the Federal regulations. The PSU IRBs must follow these specifications for designating the review type to remain in compliance with the Assurances. For additional information, please see <http://www.research.psu.edu/orp/areas/humans/reviewtypes.asp>.

Full Board Review - All projects involving human participants exposed to greater than minimal risks (including all research that exposes the participant to x-rays and/or microwaves) must be submitted for review by the IRB at a

convened meeting. Such projects require submission of the application form, informed consent/assent form(s), and supporting documents (e.g., protocol documents, recruitment material, questionnaires, surveys, investigator brochures and grant proposals [if applicable]).

Following initial review and approval by the IRB at a convened meeting, investigators conducting research designated by the IRB as Full Board Review are required to do the following:

- have all modifications to the research protocol reviewed and approved by the IRB prior to instituting them;
- report to the IRB problems that require prompt reporting (see “Standard Operating Procedures on Reporting of Unanticipated Problems Involving Risks to Participants or Others”);
- maintain IRB approval until data collection and analysis is complete and all research activity has ceased;
- submit reports/information to the IRB as requested; and
- submit progress reports at intervals stipulated by the IRB (including a final report to the IRB upon completion of the data collection and analysis).

Expedited Review - All projects involving human participants exposed to no more than minimal risk, as defined above, or to no risk (e.g., existing record review, use of existing pathology, surveys) AND that are included on the list of types of research designated by Federal regulations as qualifying for expedited review may be approved through the expedited review process (45 CFR 46.110) (<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm#46.110>). Such projects do NOT have to wait for a convened meeting of the full IRB, but may be reviewed and approved by the IRB chair or his/her designee, and reported to the IRB at a convened meeting. These projects require submission of the application form, informed consent/assent form(s) (if applicable), and supporting documents (e.g., protocol documents, recruitment material, questionnaires, surveys, and grant proposals [if applicable]).

Following initial review and approval by the IRB Chair or Chair's designee, investigators conducting research designated by the IRB as qualified for expedited review are required to do the following:

- have all modifications to the research protocol reviewed and approved by the IRB prior to instituting them;
- report to the IRB problems that require prompt reporting (see “Standard Operating Procedures on Reporting of Unanticipated Problems Involving Risks to Participants or Others”);
- maintain IRB approval until data collection and analysis has been completed, and all research activity has ceased;
- submit reports/information to the IRB as requested; and
- submit progress reports at intervals stipulated by the IRB (including a final report to the IRB upon completion of the data collection and analysis).

Exempt Research - Certain types of research may be found by the IRB to be exempt from IRB oversight (45 CFR 46.101[b]) (<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm#46.101>). At PSU, investigators may not make an independent determination that research involving human participants is exempt from Federal regulations. Only a designated IRB member or qualified staff from the Office for Research Protections or Human Subjects Protection Office has the authority to make this determination following review of a research application, informed consent form if applicable, and supporting documents (e.g., recruitment materials, questionnaires/surveys, and grant proposals, [if applicable]). Investigators conducting research designated at the exempt level are required to submit modifications that may affect the exempt status for review prior to instituting the proposed changes.

Some studies may not meet the definition of “research” and/or a “human participant.” However, investigators may not make an independent determination that their study does not meet the definition of “research” and/or “human participant.” Only qualified staff from the Office for Research Protections or Human Subjects Protection Office has the authority to make this determination.

IRB APPLICATION PROCEDURE:

The most current applications for human participant research are available at the following locations: the Office for Research Protections, University Park Campus (<http://www.research.psu.edu/orp/>) or the Human Subjects Protection Office, and College of Medicine (<http://www.hmc.psu.edu/irb/>). Completed forms and other required materials as indicated on the application should be returned to the appropriate IRB administrative office.

OTHER INSTITUTIONS:

The IRB interacts with other institutions to ensure that IRB policies and procedures are followed when PSU or PSHMC employees and students perform research at other institutions, or when personnel or students from other institutions perform research at PSU or PSHMC facilities.

The IRB may agree to permit another federally sanctioned IRB to serve as the IRB of record for studies to be conducted by, or with the assistance of PSU personnel, at the facilities of a second institution. The IRB may agree to function as the IRB of record for another investigator and/or institution if the project involves material collaboration from PSU personnel. Such agreements will require written letters of agreement and may include the completion of additional documentation under the Federal-wide Assurance process. Copies of these agreements will be maintained at the respective administrative area.

REGULATORY AGENCIES:

As required by Federal regulations and by the Assurances, the IRB will contact directly the appropriate governmental authority at OHRP and/or FDA regarding questions or to notify them of reportable events, such as unanticipated problems involving risks to participants or others, serious or continuing investigator non-compliance, or termination or suspension of IRB approval of research protocols.

RESEARCH AGREEMENT, FINANCIAL INFORMATION AND CONFLICT OF INTEREST:

The research agreement and financial information related to sponsored research, such as project budget, schedule of payments to PSU and human participants, arrangements for medical care for research-related injury, and monetary or other enrollment incentive/bonus payments, if offered, must be submitted to the Office of Sponsored Programs at the University Park Campus or the Office of Research Affairs at College of Medicine for review (see [RA16](#)). If, as the project progresses, there are changes in financial arrangements, medical care for research-related injury arrangements, or a sponsor decides to institute incentive/bonus offers, these new arrangements must be submitted to the Office of Sponsored Programs or the Office of Research Affairs for review and approval prior to instituting these changes. For federally funded projects, see [RA04 - Making Revisions to Budgets and Program Plans on Federally Sponsored Projects](#). It is the policy of PSU that neither it, nor its investigators, or other study personnel, will accept unauthorized incentives or bonuses tied to the rate of recruitment of project participants or to early enrollment of participants in clinical trials, whether such incentives or bonuses are offered as a part of a research agreement or at any other time. For the purposes of this policy, the terms, incentives, or bonuses include anything of value.

In accordance with PSU Policy [RA20- Individual Conflict of Interest](#) and [HR91- Conflict of Interest](#), all project personnel must apprise the IRB of any significant financial or business interest. The term "Significant Financial or Business Interest" is defined in Policy [RA20](#). Final IRB approval for any project will be withheld pending disclosure, management and/or resolution of any conflict-of-interest issues to the satisfaction of the IRB.

NOTE: For the purposes of this item, "project personnel" includes, but is not limited to, the principal investigator, co-investigators, study coordinators, research collaborators, or any other provider of direct services or participant care.

PRINCIPAL INVESTIGATOR RESPONSIBILITIES:

The Principal Investigator (PI) is the individual responsible for the implementation of research. The IRB recognizes one PI for each project. All official IRB correspondence is addressed to the PI. Co-investigators communicate with the IRB through the PI. The PI has the ultimate responsibility for his/her research project by:

- Acknowledging and accepting his/her responsibility for protecting the rights and welfare of human research participants and for complying with all applicable Federal, state, and local regulations, as well as PSU policies regarding research with human participants;
- Ensuring that a project is designed to minimize risks to participants while maximizing research benefits;
- Ensuring that all members of the research team know and understand the research project and they comply with the findings, determinations, and requirements of the IRB;
- Ensuring the adequacy of both the informed consent form and the informed consent process;
- Ensuring that all human participant research that he/she conducts receives initial prospective review and approval by the IRB;
- Ensuring that continuing review and approval of the research has been accomplished within the time frame stipulated by the IRB;

- Ensuring that no changes in approved research are initiated without prior IRB review and approval, except where necessary to eliminate apparent immediate hazards to participants;
- Ensuring that no research is continued beyond the IRB designated approval period;
- Notifying the IRB promptly of:

o Any significant problems that require prompt reporting to the IRB according to the IRB policy "Reporting of Unanticipated Problems Involving Risks to Participants or Others;" and;

o Any suspected non-compliance as described in the IRB policy on the "Handling of Allegations of Non-compliance" with applicable regulatory requirements or determinations of the IRB of which he/she becomes aware.

For additional information, contact:

Office for Research Protections Penn State University 201 Kern Building University Park, PA 16802 (814) 865-1775	OR	Human Subjects Protection Office Penn State University COM 500 University Drive, Mail Code H112 Hershey, PA 17033-0850 (717) 531-5687
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This policy is reviewed and approved by the Vice President for Research & Dean of the Graduate School.

CROSS REFERENCES:

AD19 - Use of Penn State Identification Number and Social Security Number,

AD47 - General Standards of Professional Ethics,

HR91 - Conflict of Interest,

RA04 - Making Revisions to Budgets and Program Plans on Federally Sponsored Projects,

RA10 - Handling Inquiries / Investigations into Questions of Ethics in Research and in Other Scholarly Activities,

RA16 - Administration of Sponsored Project Contract and Subcontracts of the University,

RA20 - Individual Conflict of Interest,

RA21 - Institutional Financial Conflict of Interest Involving Sponsored Projects, Dedicated Gifts, Research, Scholarship, and Technology Transfer

Procedure CR2078, Payment to Research Participants

Effective Date: June 17, 2009

Date Approved: June 15, 2009

Date Published: June 16, 2009

Most recent changes:

- June 17, 2009 - Revisions made in all sections of the policy to provide clarification and more detail about the process and definitions. Title changed from "The Use of Human Subjects in Research" to "*The Use of Human Participants in Research.*"

Revision History (and effective dates):

- September 12, 2005 - Major revisions, developed collaboratively with the College of Medicine, and with input from the Office of Sponsored Programs (UP) and the Office of Research Affairs (College of Medicine):

Expanded "Contents," with the following sections added:

- Authority of the Institutional Review Board (IRB)
 - Types of Review
 - Other Institutions
 - Regulatory Agencies
 - Research Agreement, Financial Information and Conflict of Interest
 - Principal Investigator Responsibilities
 - Cross References "
-
- February 20, 1998 - Relocated and renumbered Policy RA14 from SY22

Appendix A 6
Research Administration Policy RA15

CARE AND USE OF VERTEBRATE ANIMALS

<https://guru.psu.edu/policies/RA15.html>

Contents:

- [Purpose](#)
 - [Policy](#)
 - [Applicability](#)
 - [Exclusions](#)
 - [Definitions](#)
 - [Submission Procedure](#)
 - [Biohazardous Agents and Radioisotopes in Animals](#)
 - [Cross References](#)
-

PURPOSE:

This policy provides the following assurances:

1. Vertebrate animals involved in any research, testing or teaching procedures receive humane care and treatment.
2. Animal research is conducted in a well-controlled research environment.
3. Concerns regarding the care and use of vertebrate animals at the University are addressed in a professional and responsible manner.
4. Research involving the use of live animals is performed in an ethical manner, designed to minimize pain and distress, and comply with applicable federal and state regulations.

This policy enacts certain necessary provisions of the University's "Assurance of Compliance with Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals," an agreement with the Office for Laboratory Animal Welfare (OLAW) at the National Institutes of Health (NIH) which provides eligibility for receipt by University investigators of funding from various federal agencies.

POLICY:

Approval by the University's Institutional Animal Care and Use Committee (IACUC) is required prior to the actual involvement of a vertebrate animal in any University research, testing or teaching procedures. Any such project involving an external sponsor must be reviewed and approved by the IACUC before funding is accepted.

IACUC records are subject to regular unannounced inspections by representatives of the United States Department of Agriculture (USDA). USDA inspection reports describe any institutional deficiencies or apparent IACUC record violations, and are accessible to the public under the Freedom of Information Act. For this reason, all IACUC submissions must be carefully prepared and detailed; a written memo must document all submission supplements or clarifications. The Office for Research Protections (ORP) in The 330 Building, Suite 205 (865-1775), is responsible for coordinating IACUC reviews and approvals.

Concerns regarding the proper care and use of vertebrate animals in a University project are to be reported to the ORP, investigated by the IACUC and resolved in a timely manner.

APPLICABILITY:

This policy is applicable to all research, testing or teaching activities involving vertebrate animals (live or dead*) or animal parts except as excluded below, conducted under the auspices of the University and applies to all University locations, excluding the College of Medicine at Hershey which maintains a separate animal welfare assurance with OLAW. University projects involving the use of vertebrate animals at other institutions must receive IACUC approvals from both the cooperating institution and Penn State University. The College of Medicine at Hershey Medical Center will serve as

the cooperating institution during a collaborative effort between the College of Medicine at Hershey Medical Center and any other University location.

* The IACUC reviews the use of dead animals to verify that they originate from a reputable source and are disposed of appropriately.

EXCLUSIONS:

The following materials are excluded from this policy and are exempt from IACUC review:

1. Animal tissues or parts collected from animals euthanized under an approved IACUC protocol.
2. Animal tissues or parts collected from USDA inspected slaughter houses.
3. Established cell lines, as well as biological fluids and foods available as standard inventory from a conventional commercial supplier

DEFINITIONS:

Vertebrate Animal --

Penn State University defines an animal as being any non-human organism possessing a well-developed nervous system as characterized by the presence of a dorsal notochord protected by a vertebral column. This policy applies to non-human vertebrate animals, live or dead.

IACUC--the Institutional Animal Care and Use Committee --

This committee is appointed to review all proposed research, testing or teaching activities involving vertebrate animals to be conducted under the auspices of the University. Projects are reviewed for compliance with the principals of humane animal care and use as set forth by policies and regulations promulgated by the United States Department of Agriculture and the Public Health Service. The membership of this committee provides for a balanced review of all submitted activities by inclusion of veterinarians, faculty, staff, and local community representatives.

SUBMISSION PROCEDURE:

Submission forms can be obtained from the [ORP WEB site](#). Completed forms should be returned to the ORP, The 330 Building, Suite 205, University Park, PA 16802. Copies of submissions received by ORP will be circulated to IACUC committee members.

The IACUC has final authority to disapprove or suspend indefinitely an activity involving the use of vertebrate animals.

Appeals will be heard by the IACUC; however, by federal law the IACUC has final authority and disapprovals cannot be overruled by any administrator at the University.

BIOHAZARDOUS AGENTS AND RADIOISOTOPES IN ANIMALS:

Any IACUC submission involving a biohazardous agent or radioisotope also will require prior approval by the Institutional Biosafety Committee or the University Isotopes Committee, respectively. The investigator is to include, in the IACUC submission, a safety protocol describing procedures for work with biohazardous materials used with animals. The University Biosafety Officer, in consultation with animal care personnel, will aid investigators in designing appropriate safety protocols for the handling and disposal of animals contaminated with biohazardous materials. The University Health Physicist will advise investigators in the development of safety protocols involving the use of radioisotopes.

Approved by the Institutional Animal Care and Use Committee on March 22, 2004

CROSS REFERENCES:

Other Policies in this Manual should also be referenced, especially:

[SY20](#) - Hazardous Waste Disposal, and

SY24 - Use of Biohazardous Materials in Research and Instruction.

Effective Date: May 24, 2007

Date Approved: May 17, 2007

Date Published: May 23, 2007 (Editorial changes, August 12, 2010)

Most recent changes:

- August 12, 2010 - Editorial changes made; updated address and website links were revised in the POLICY and SUBMISSION PROCEDURE sections, respectively.

Revision History (and effective dates):

- May 24, 2007 - Major revisions to entire policy, as approved by the Institutional Animal Care and Use Committee (IACUC).
- February 23, 2005:
 - Responsibility moved from Office for Protection from Research Risks to Office for Laboratory Animal Welfare.
 - Under the section BIOHAZARDOUS AGENTS AND RADIOISOTOPES IN ANIMALS, the procedure was rewritten.
 - Under the APPROVAL PROCEDURE, upon completion of the IACUC review, ORP prepares letters of approval for proposals.
 - Under the section DISAPPROVALS, "lack of availability of adequate animal housing or care" was changed to "inadequate animal housing or care."
 - Lack of compliance with federal regulations was added as a reason for disapproval.
 - Changes to several office names.
- February 20, 1998 - Relocated and renumbered Policy RA15 from SY23, and clarified "Exclusions."
- September 1, 1994 - Office addresses updated.
- March 24, 1992 - New policy.

Appendix A 7
Safety Policy SY24

USE OF REGULATED AND BIOHAZARDOUS MATERIALS IN RESEARCH AND INSTRUCTION

<https://guru.psu.edu/policies/SY24.html>

Contents:

- [Purpose](#)
- [Applicability](#)
- [Policy](#)
- [Responsibilities](#)
- [Definitions](#)
- [Requests for Biohazards Reviews](#)
- [Approval Procedure](#)
- [Compliance](#)
- [Cross References](#)
- [Appendix A](#)

PURPOSE:

To ensure safe handling, storage, and disposal of potentially biohazardous materials, as defined below, used in University research or instructional projects. Compliance with the provisions of this policy will provide a safe working environment, as well as protect the people and facilities of the larger University community and the surrounding areas. Institutional Biosafety Committee (IBC) review also assists the University and its employees in their compliance with federal regulations on the use of recombinant DNA, as well as federal and state regulations regarding pathogens, toxins, toxicants, and carcinogens.

APPLICABILITY:

This policy applies to any research and instructional activities, sponsored and unsponsored, conducted under the auspices of the University. This policy is applicable to all University locations (except the Hershey Medical Center which conducts independent biosafety committee reviews), and to research conducted off-site by University personnel. University projects involving the use of biohazardous materials at other institutions shall receive Institutional Biosafety Committee (IBC) approval from the cooperating institution. In the case of collaboration between the Hershey Medical Center and any other University location, Hershey will be treated as a cooperating institution. Copies of IBC approvals from cooperating institutions should be forwarded to the Office for Research Protections (ORP) along with a completed IBC application. The Penn State IBC may require approval from the cooperating institution prior to granting their approval.

POLICY:

All University research and instructional activities involving biohazardous materials, as defined below, shall be reviewed and approved by the Institutional Biosafety Committee (IBC) prior to the use of any such reagent. Projects submitted for sponsorship by external agencies should be submitted for IBC review prior to acceptance of funding. The Office for Research Protections (ORP), The 330 Building, Suite 205, University Park, PA 16802 (814-865-1775) coordinates IBC reviews and approvals. The IBC is vested with the right and authority to monitor the use of biohazardous material as approved hereunder.

RESPONSIBILITIES:

Budget executives and budget administrators shall ensure that all supervisors in their area are familiar with the provisions of this policy. Supervisors (department chairs, faculty and other employees with direct oversight of University employees and students) shall ensure that all University research is conducted in compliance with this policy. Employees and students shall ensure that their activities comply with any and all safety policies and procedures mandated by this policy.

DEFINITIONS:**Regulated/Biohazardous Material -**

The categories below represent the areas of primary concern with respect to biosafety. Projects involving material(s) included by any of these categories should be submitted for IBC approval.

1. Chemical Carcinogens used in conjunction with animals.
2. Toxic/Infectious agents used in conjunction with animals.
3. Oncogenic viruses used in conjunction with animals.
4. Infectious agents requiring handling conditions above Biosafety Level-1. (Biosafety Level determinations are based on the recommendations outlined by the CDC-NIH publication Biosafety in Microbiological and Biomedical Laboratories.)
5. Recombinant DNA.

Definitions For Clarification

- Recombinant DNA (rDNA) molecules are defined as either: (i) molecules that are constructed outside living cells by joining natural or synthetic DNA segments to DNA molecules that can replicate in a living cell, or (ii) molecules that result from the replication of those described in (i) above.
 - Nucleic acids that are not and cannot be replicated inside organisms, cells, or viruses are not considered rDNA. Commonly encountered examples of synthetic DNA not considered to be rDNA include Polymerase Chain Reaction (PCR) products, synthetic oligonucleotides/primers, and complementary DNA (cDNA) obtained by reverse transcription of RNA.
6. Human or non-human primate blood and blood products, human or non-human primate body fluids, and/or human or non-human primate tissue.
 7. Toxins produced by living organisms (>1 mg of pure toxin, or solutions with concentrations of >1 mg/ml pure toxin). This provision excludes toxins covered by the Select Agent regulations (see #9).
 8. Whenever a contractual agreement or grant proposal requires Institutional Biosafety Committee approval for the safe handling of a biological or chemical product.
 9. HHS and USDA Select Agents and Toxins, as defined in Federal Regulations 7CFR331, 9CFR121, and 42CFR73, Additional Requirements for Facilities Transferring or Receiving Select Agents, Public Law 107-188, Public Health Security and Bioterrorism Response Act. The current list is available at <http://www.selectagents.gov/Select%20Agents%20and%20Toxins%20List.html>. These regulations also apply to nucleic acids that can produce infectious forms of any select agent virus, and recombinant nucleic acids that encode the functional forms of any select agent toxin.
 10. USDA Restricted Animal Pathogens, as determined by the United States Department of Agriculture (USDA), which are listed in Appendix A.
 11. Wild Poliovirus or materials that may contain wild poliovirus [contact Environmental Health and Safety (814) 865-6391 for additional information on this subject].

The IBC also serves as an advisory committee for University projects that involve possible biohazards that do not appear to fall into one of the above areas. When it is unclear as to whether a material constitutes a potential biohazard, the IBC should be consulted. Questions should be directed to ORP or to Environmental Health and Safety at 6 Eisenhower Parking Deck.

IBC--the Institutional Biosafety Committee -

A Committee appointed by the Vice President for Research to review and approve the use of biohazardous materials in research. The membership of this Committee includes Penn State faculty and staff with expertise in relevant areas. In addition, at least two members of the local community are appointed to the committee to

represent local concerns. Membership of this Committee is consistent with federal regulations on the review of projects involving the use of recombinant DNA.

REQUESTS FOR BIOHAZARDS REVIEWS:

IBC submission forms can be obtained from the ORP web site. Completed forms should be returned via email to ORP-Biosafety@rtto.psu.edu. The Principal Investigator is responsible to provide sufficient information to allow the IBC to determine if this work can be conducted safely and appropriately.

A written safety protocol will be required for projects that involve biohazardous materials used in conjunction with animals, for project using Select Agents, for projects involving USDA Restricted Plant Pathogens, and for any project conducted at Biosafety Level 3 or higher. The safety protocol will require signatures from the Biosafety Officer and the appropriate facility manager.

APPROVAL PROCEDURE:

The IBC consists of the following subcommittees:

- Recombinant DNA
- Pathogens and Oncogenes
- Carcinogens and Toxins

Each IBC submission received by ORP will be pre-reviewed by the Compliance Coordinator and forwarded to a member of the appropriate IBC subcommittee(s). The subcommittee member will either approve the Application for the Use of Biohazardous Materials, and determine the appropriate biosafety requirements, request a second review by another member of the subcommittee, or schedule the project for consideration at the monthly meeting of the full IBC. In some instances, the PI may be asked to appear before the IBC. The Biosafety Officer will determine if a lab inspection is needed. Once the reviewer ballot and notification regarding the lab inspection are received from the subcommittee member and the Biosafety Officer, ORP will either issue an approval letter or request additional information. Additional information could consist of clarification of comments posed by the reviewer or the need for scheduling a lab inspection. The principal investigator will be responsible for responding to the request for additional information in a timely manner.

Once approval is granted, it is the responsibility of the PI to ensure that approval letters are properly directed to any funding agency or sponsor.

COMPLIANCE:

The IBC has express authority (1) to monitor research covered by approval letters it has issued; and (2) to enforce biosafety requirements, including the suspension of research, or recommending to the Vice President for Research and Dean of the Graduate School penalties and sanctions for non-complaint investigators. The IBC, through the Office for Research Protections, shall report such noncompliance to EH&S and may request their assistance in implementing sanctions, penalties, and/or suspensions.

CROSS REFERENCES:

Other Policies in this Manual should also be referenced, especially:

RA14 - The Use of Human Subjects in Research

RA15 - Care and Use of Vertebrate Animals

SY01 - Environmental Health and Safety Policy

SY14 - Use of Radioactive Materials

SY20 - Hazardous Waste Disposal.

USDA Restricted Animal Pathogens/Diseases:

- African horse sickness
- African Swine fever virus*
- Akabane virus
- Avian Influenza virus
- Besnoitia besnoiti
- Bluetongue virus*
- Bovine spongiform encephalopathy
- Bovine infectious patechial fever agent
- Brucella abortus
- Brucellosis melitensis*
- Burkholderia mallei * (Pseudomonas mallei - Glanders)
- Camelpox virus
- Classical Swine fever
- Cochliomyia hominivorax (Screwworm)
- Cowdria ruminantium (heartwater)
- Creutzfeldt-Jacob Disease variant
- Ephemeral fever virus
- Foot and mouth disease virus*
- Histoplasma (Zymonema) farciminosuim
- Louping ill virus
- Lumpy skin disease virus
- Mycobacterium bovis
- Mycoplasma agalactiae
- Mycoplasma mycoides (mycoides)
- Mycoplasma Capricolum/M.F38/M.
- Mycoides Carpi (Contagious Bovine Pleuropneumonia Agent)
- Nairobi sheep disease virus (Ganjam virus)
- Newcastle disease virus* (velogenic strains)
- Peste des petits ruminants* (plague of small ruminants)
- Rift Valley fever virus*
- Rinderpest virus*
- Sheep and goat pox*
- Swine vesicular disease virus*
- Teschen disease virus*
- Theileria annulata
- Theileria lawrencei
- Theileria bovis
- Theileria hirci
- Trypanosoma brucei
- Trypanosoma congolense
- Trypanosoma equiperdum (dourine)
- Trypanosoma evansi
- Trypanosoma vivax
- Venezuelan equine encephalomyelitis
- Vesicular exanthema virus
- Vesicular stomatitis virus
- Viral hemorrhagic disease of rabbits
- Wesselsbron disease virus

*Export license required by Department of Commerce

Effective Date: May 10, 2011
 Date Approved: May 4, 2011
 Date Published: May 10, 2011

Most recent changes:

- May 10, 2011– Clarified responsibilities.

Revision History (and effective dates):

- January 1, 2010 – Editorial change made in "Compliance" section. Title changed FROM "Senior Vice President for Research and Dean of the Graduate School" TO "Vice President for Research and Dean of the Graduate School," to reflect position changes, effective January 1, 2010.
- March 11, 2009– Editorial changes made in "Definitions" section, adding 'non-human primate' to the materials defined in #6 which require IBC approval, in observance of biosafety requirements.
- November 11, 2008– Editorial changes have been made, as follows: policy title has been amended to include "Regulated" materials; DEFINITIONS section modified to include regulated materials, and #5 revised; link to SY14 added in CROSS REFERENCES section.
- October 24, 2007 – Added clarification on nucleic acids from select agent viruses and toxins, as approved by the University Biosafety Committee.
- November 8, 2006 - Editorial change - changed Vice President for Research to Senior Vice President for Research.
- September 27, 2005 - Procedures modified and link to Select Agent list added.
- December 5, 2002 - Definitions of Biohazardous Materials expanded and responsibilities added.
- September 1, 1994 - Updated office addresses and revised procedure for requesting biohazards reviews.

Appendix A 8
Safety Policy SY20

HAZARDOUS WASTE DISPOSAL

<https://guru.psu.edu/policies/SY20.html>

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PURPOSE:

To establish a policy and procedures for the handling, transportation and disposal of hazardous waste at all locations of The Pennsylvania State University (except the Hershey Medical Center).

Hazardous wastes may be generated by a variety of University activities such as teaching, testing and research laboratories, maintenance, housekeeping and agricultural operations. These wastes may cause severe illness or death or pose substantial environmental threats when improperly stored, transported, treated or disposed.

REFERENCE:

The University is required by regulation 25 PA Code Ch. 260 a - 262 a and by *Environmental Protection Agency regulation 40 CFR 260-262* to ensure the proper disposition of these wastes.

DEFINITION:

A waste may be designated as a hazardous waste if it meets **one** of the following criteria:

1. Acute hazardous waste is a waste which has been found to be **fatal in humans** in low doses or, in the absence of data on humans, has been found to have, in laboratory animals:

- (A) an oral LD50 of less than 50 mg/kg,
- (B) an inhalation LC50 of less than 2 mg/l, or
- (C) a dermal LD50 of less than 200 mg/kg.

- A waste is hazardous if it contains any of the toxic constituents listed in the regulations.
- A waste is hazardous if it exhibits any of the following characteristics:

- (A) Ignitability
- (C) Reactivity
- (B) Corrosivity
- (D) Toxicity

POLICY:

The SeniorVice President for Finance and Business establishes and approves the policy and procedure for hazardous waste disposal within the environment of The Pennsylvania State University. The basis for such policy and procedure

shall be recommendations of the University Hazardous Waste Advisory Board. This Board shall review and recommend revisions to these procedures as appropriate.

Environmental Health and Safety shall be the University agency responsible for implementing and enforcing the established policy and procedure. This agency shall also be responsible for the coordination of all hazardous waste disposal efforts.

The Directors of Business Services, in conjunction with the individual hazardous waste generators at non-University Park locations, and the individual hazardous waste generators at University Park, shall be responsible for coordinating the collection of hazardous waste with Environmental Health and Safety.

The custody and disposition of all chemicals/materials obtained or produced by, for and/or resulting from experiments, research or purchase is the responsibility of the University employee and/of their organizational unit so pre-occupied. The organization's budget under which such chemicals/materials are obtained or produced may also be required to fund the analysis of such items which cannot be identified by their proper or generic name or are improperly labeled. All containers of chemicals/materials must be clearly identified and labeled as to their contents. **UNKNOWN OR IMPROPERLY LABELED CHEMICALS/MATERIALS WILL NOT BE ACCEPTED FOR DISPOSAL.**

Normal hazardous waste disposal costs will be funded through Environmental Health and Safety.

Generators of hazardous waste are responsible to ensure the appropriate storage, labeling, inspection, auditing, documentation, and segregation of chemicals, and to provide and document training of all personnel involved in the handling of this waste.

The indiscriminate drain-disposal of chemicals/materials is not permitted. Drain disposal of chemical waste materials shall be permitted only with specific written approval by Environmental Health and Safety.

Departments that generate hazardous chemical wastes shall ensure that a waste reduction program is in effect and that it is being adhered to.

REDUCING HAZARDOUS MATERIALS:

To effect a reduction in the volume of hazardous waste generated at the University, as mandated by the Pennsylvania Department of Environmental Protection (PA DEP), and the Environmental Protection Agency (EPA), generators of hazardous waste shall minimize the volume or toxicity of their waste.

- Substitutions can be made to eliminate or reduce the amount of hazardous ingredients.
- Management practices can greatly reduce unnecessary waste generation. This includes the purchase of only the quantity of material anticipated to be used and establishing usage parameters for each chemical.
- Hazardous materials may be redistributed or returned. Often, surplus chemicals can be redistributed within the University or returned to the manufacturer. Lists of redistributable chemicals should be circulated among faculty and staff within work units or departments. Such a list should contain the following information:
 - chemical name,
 - amount,
 - manufacturer,
 - Purity, as stated on label, and
 - whether the container is unopened.

EHS maintains a listing of chemicals that are available for redistribution.

- Bulking of compatible chemicals. Environmental Health and Safety shall provide guidance in the consolidation of compatible chemicals. A significant reduction in disposal costs can be achieved in the bulking of these chemicals.
- Waste segregation. Mixing wastes **can be** hazardous; incompatible wastes can react - and explode. Wastes transported to the Chemical Waste Storage facility must be segregated to avoid these reactions. A further

reduction in the costs for waste disposal can be achieved by reducing packaging time as compatible chemicals can be packed more efficiently. Chemicals should be segregated into the following categories: flammables, corrosives, poisons, and oxidizers.

- Integrate micro-scale techniques into organic and inorganic chemistry laboratory courses and research projects. These techniques can reduce chemical purchase costs and significantly reduce the quantities of waste chemicals for disposal. Use of micro-scale also reduces student and faculty exposure to toxic chemicals, carcinogens, flammables and explosives.

RESPONSIBILITIES:

Individuals responsible for laboratories and other areas which handle and store hazardous waste are required to:

1. Each room generating chemical waste must designate a location within the room for waste accumulation. This area is referred to as the "Accumulation Area."
2. Designate an individual who is responsible to oversee the proper storage, labeling and inspection of this Accumulation Area and who conducts weekly inspections of this area, documenting and maintaining the results of the inspection.
3. Ensure all laboratory personnel involved in chemical waste management are trained and documentation of training records is maintained.
4. Establish, implement and document an annual review of all hazardous materials to ensure those exceeding safe and practical usage are properly disposed of.
5. Incorporate waste disposal management practices into all procedures, including laboratory manuals used for instruction.
6. Conduct audits of waste management procedures as established in this policy to ensure compliance and implement the necessary changes.

Department heads/heads of administrative units are responsible to:

1. Prepare a written program description for compliance with this policy and designate an individual responsible for department-wide compliance.
2. Maintain a listing of accumulation areas and individuals responsible for oversight.
3. Maintain copies of training documents.
4. Conduct audits of waste management procedures within facilities under their jurisdiction as established in this policy to ensure compliance and implement the necessary changes.

Deans of Academic Colleges/Heads of Administrative Units are responsible to:

1. Designate a College/Unit-wide individual to oversee program.
2. Conduct audits of waste management procedures established in this policy to ensure compliance and implement the necessary changes.

PROCEDURES:

Collection and transportation of hazardous waste at University Park:

A laboratory or facility that has hazardous waste for disposal shall contact Environmental Health and Safety, 6 Eisenhower Parking Deck, www.ehs.psu.edu, Phone 865-6391 to obtain the necessary form (Chemical Waste Manifest Form), which must be properly completed for all requests for disposal of chemicals/materials. Environmental Health and Safety personnel will collect and transport the hazardous waste to the Chemical Accumulation Facility. Procedures for the collection of specially-arranged disposal activities will be established by EHS. The spill or discharge of any hazardous material must be reported to Environmental Health and Safety at 865-6391 during regular working hours (8:00 a.m. to 5:00 p.m.). At other times and on weekends, the incident must be reported to

University Police. Callers from 862, 863, and 865 telephones, dial 911; from other numbers, dial 863-1111. Environmental Health and Safety personnel will report to the site of the incident and provide guidance and direction in proper cleanup procedures, as deemed appropriate. They will provide or recommend appropriate equipment for the cleanup, and arrange for the proper disposal of the hazardous waste.

Disposal of hazardous waste at non-University Park locations (except Hershey Medical Center):

Other locations that have hazardous waste for disposal will forward a properly completed Chemical Waste Manifest Form to Environmental Health and Safety. Environmental Health and Safety will arrange to have the hazardous waste picked up by a commercial vendor.

Effective Date: November 9, 2000

Date Approved: November 7, 2000

Date Published: November 9, 2000 (editorial change - August 13, 2004)

Most recent changes:

- August 13, 2004 - (editorial change) Removed cross-reference to SYG01.
- November 9, 2000 - Policy updated to reflect changes in regulations, waste minimization and responsibilities.

Revision History (and effective dates):

- November 11, 1999 - EHS website address added and various minor editorial changes made.
- February 26, 1992
- April 26, 1988 - New Policy

APPENDIX A 9

UNIVERSITY FACULTY SENATE LEGISLATION

BACKGROUND:

In 1981, the University Faculty Senate passed legislation pursuant to the instructional duties of graduate teaching assistants (TAs). This legislation stated only the determination that TA preparation would satisfy two general requirements:

1. All international teaching assistants (ITAs) should take and pass a test of spoken English.
2. All teaching assistants, regardless of country of origin, should undergo some form of training or preparation for their instructional responsibilities.

Both these issues came to the fore only because of complaints from undergraduates—complaints that TAs could not be understood in class and that TAs in general were not providing quality instruction. Then, in 1991 and 1993, the University Faculty Senate passed more detailed legislation that mandated TA preparation and outlined more specifically how these two requirements would be met. At the heart of the senate legislation are the following six criteria of TA preparation:

1. All TAs must be provided the instructional goals and objectives for the course, and, if teaching in any capacity in front of the class, direction as to the content to be used to accomplish the goals and objectives.
2. TAs must be offered preparation in generic teaching strategies (e.g., how to question, how to respond to student comments, how to incorporate different types of explanations into lesson plans, how to construct and grade exams, etc.,
3. Departments must provide TAs with information on appropriate teaching methods, activities, exercises, and/or grading policies and techniques for the course to which the TA has been assigned.
4. Departments must provide all TAs with faculty supervision and/or mentorship.
5. All TAs must receive some type of formative instructional evaluation (i.e., evaluation that provides feedback about instructional effectiveness for the purpose of improving the TA's teaching).
6. Departments must direct international teaching assistants (ITAs) who score below 250 on the modified AEOCPT test (Penn State's American English Oral Communicative Proficiency test) to take the appropriate course (which constitute certification, required by Pennsylvania State Law) offered through the Program in English as a Second Language in the speech communication department and follow the guidelines for teaching responsibilities that correspond with the appropriate course.

APPENDIX A 10

THE ROLE AND DUTIES OF THE FOOD SCIENCE TEACHING ASSISTANT

BACKGROUND:

Efforts have been made to amend the role of the food science TA for the benefit of faculty, TAs, and students in the course being conducted. Important facts of the TA assignment and guidelines for its fulfillment are summarized below.

1. The assignment as a teaching assistant (TA) is a requirement for graduation. This requirement is unrelated to graduate research assistantship or fellowship status.
2. The student will act as a teaching associate and share professional goals and responsibilities with the supervising professor.
3. The TA assignment will provide the student an opportunity to gain teaching experience. It also offers an opportunity to learn a subject well, and to improve thinking and interpersonal skills.
4. All TAs will perform teaching and grading activities in addition to other duties.
5. During the first TA assignment, the student will work closely with the professor and contribute to such activities as instruction during labs, grading of lab reports, and answering questions pertaining to the course. The TA is expected to take initiative and ask the professor as appropriate to contribute to the success of the course. The TA may also be required to give one or more lectures. The tasks assigned to the TA will vary depending on the course, the professor, and the TA.
6. During a second TA assignment, more responsibility and more customized tasks will be given. The TA is expected to take more initiative and demonstrate an ability to more independently handle class duties. There are opportunities for innovative teaching. All Ph.D. students will get experience of both lecture and laboratory teaching during their tenure in the Department.
7. A TA assignment may require 20 hours per week and can reduce the student's opportunities to conduct research.
8. The TA is expected to be available for questions and help outside of class to an extent corresponding to about 2 hours per week. The student can offer weekly office hours or flex time for this purpose.

(Source: Improvements in the role of the food science teaching assistant. A FD SC 602 project by Tor Nordmark, Department of Food Science, PSU. 1997.)

Masters Committee Appointment and Signature Form

Student Name: _____

Advisor: _____

Committee Chair

Name Signature Date

Committee Members

Name Signature Date

Name Signature Date

Name Signature Date _____ (Optional)

Please return to Juanita Wolfe or Svend Pedersen

FOOD SCIENCE GRADUATE STUDENT GRADUATION/TRANSFER CHECK-OUT SHEET

Food Science graduate students should follow the procedure listed below before leaving the University to ensure that they are in good standing at the time of their departure. The procedure consists of obtaining the signature of the following individuals, ascertaining that the student has fulfilled all obligations in the Food Science Department. This form should be returned to **Juanita Wolfe** to be included with your permanent file.

Student's Name _____ **Today's Date** _____

Thesis/Paper Status: Complete/Incomplete (circle one)

Thesis Title: _____

Schedule of Thesis Defense (schedule with Juanita or Svend) _____

Have you activated your intent to graduate through eLion? Yes or No Graduation Date: _____

The signatures below confirm the student named above has fulfilled all obligations in the following areas:

	<u>Signature</u>	<u>Date</u>
1. Advisor: <ul style="list-style-type: none"> • Oral presentation of thesis • Name removed from computer accounts • All borrowed equipment returned • Arrangements made for completion of thesis, etc. 	_____	_____
2. Graduate Program Coordinator & Dept. Head <ul style="list-style-type: none"> • Certification of all degree requirements and transmission of information to the Graduate School 	_____	_____
3. Accounting Assistant, Greg Davidson <ul style="list-style-type: none"> • Returned Purchasing Card • Submitted all paperwork for P-Card, Travel expenses, petty cash, etc. • Cancelled dept. copier access • Cancelled eBuy Access (<i>UDBA processed</i>) 	_____	_____
4. Return Keys, Vacate office <ul style="list-style-type: none"> • Return <u>all</u> keys to Room 115 Ag. Admin. • Receive key deposit refund 	_____	_____
5. Schedule Exit interview with Department Head: (Schedule with Svend Pedersen <u>at least</u> 7 days in advance)	_____	_____
6. Submit one hard bound copy of thesis to Juanita Wolfe	_____	_____
7. Forwarding address: _____ _____	Employer Name & Address: _____ _____	