

2019-2020

**ENERGY, ENVIRONMENTAL, AND FOOD
ECONOMICS (EEFE)**

GRADUATE STUDENT HANDBOOK

Introduction

The mission of the Intercollege Graduate Degree Program in Energy, Environmental and Food Economics (EEFE) is to educate students as applied research economists in the fields of energy economics, environment and natural resource economics, and industrial organization in the food sector. The EEFE graduate program offers Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees. Through completion of advanced course work and rigorous skills training, the Ph.D. and M.S. programs will prepare students to conduct independent research in accordance with the highest ethical standards, scientific integrity, and interpersonal collegiality, and to effectively interpret and communicate the results of their research. The M.S. degree includes training in theory and research methods applicable to the fields. The additional depth and breadth of training required in the Ph.D. curriculum will prepare students to conduct original research that advances scientific knowledge in their fields. Students will also acquire the background and skills necessary to be effective teachers, mentors, and practitioners of economics.

Intercollege Graduate Faculty

The EEFE program is an Intercollege Graduate Degree Program (IGDP), meaning that Penn State faculty members from departments in two or more colleges collaborate to offer this graduate major. The program is administered by a committee of graduate faculty members approved by the Graduate School under a Graduate Program Chair. The program's graduate faculty represents the Department of Agricultural Economics, Sociology, and Education in the College of Agricultural Sciences, the John and Willie Leone Family Department of Energy and Mineral Engineering in the College of Earth and Mineral Sciences, and the Department of Risk Management in the Smeal College of Business.

The IGDP model enables a unique and innovative graduate program in energy, environmental, and food economics that can offer student world class training in economic theory and methods, and opportunities to work with high profile leaders in energy, environmental, and food research.

Core Curricula

The core curricula for the M.S. and Ph.D. programs are composed of courses that all students are required to take and that will provide state-of-the-art training in those aspects of microeconomic theory, applied welfare economics, econometrics, and computational quantitative methods that are most relevant for cutting-edge research in the focal fields. The core curricula will give students the following specific research and computation skills:

1. Demonstrated knowledge of and ability to apply the concepts and tools of modern microeconomic theory to develop behavioral hypotheses for individual economic agents, markets, and institutions in energy resources and systems; environment and natural resources; and food industrial organizations.

2. Demonstrated knowledge of and ability to apply concepts and methods of modern econometric theory to test economic hypotheses.
3. Demonstrated knowledge of and ability to use the theory and tools of welfare economics to quantitatively describe the impacts of public policies, industrial decisions or market forces on the overall functioning of markets for relevant commodities and services, and the impacts on specific sectors of market actors.
4. Demonstrated knowledge of and ability to use computational tools for the assimilation of very large data sets for empirical analysis or the construction of appropriate models to address research questions that cannot be answered by empirical means.

The core curricula, other required and elective courses, seminars, and other trainings will be used to train all students in the program to

1. Communicate scientific findings effectively through written and oral methods to technical and lay audiences.
2. Conduct and communicate research in accordance with the highest ethical standards, scientific integrity, and interpersonal collegiality.

Fields of Concentration

In addition to receiving broad training in the fundamentals of applied economic research in the core curriculum, Ph.D. candidates are required to obtain specialized training through the selection of one or more field concentrations. The field concentrations are designed to position Ph.D. students to be able to perform research whose novelty is widely recognized by field experts. Educational objectives associated with each of the fields are as follows:

Energy Economics, Policy and Systems: Students will gain demonstrable expertise in the structure, function and performance of markets for crude oil, natural gas, electric power and transportation/industrial fuels. They will also demonstrate the ability to define and implement novel research questions based on a fundamental understanding of the energy industries.

Examples of specific areas of expertise include:

- Price formation and competition in crude oil, natural gas and electric power markets;
- Fundamentals of competition analysis in these markets;
- Modeling the interactions between technologies, energy conversion and delivery systems, and market processes;
- Assessing the impacts on firms and consumers from attempts to regulate energy markets, prices or other aspects of energy commodities;
- Understanding the major determinants and pace of innovation in energy technologies.

Environment and Resource Economics: Students will learn theory and empirical methods used for applied economics research on causes of market failures applicable to environmental goods and natural resources, explain and predict the behavior of individual economic agents and collections of agents affecting environmental and natural resource outcomes under alternative property rights regimes and resource allocation mechanisms, measure the benefits and costs of environmental and resource policies, and develop innovative mechanisms for addressing environmental and natural problems. Examples of specific areas of expertise include:

- Developing structural models of land markets to analyze land use and transportation policies, and estimate associated benefits and costs;
- Developing and implementing surveys to test hypotheses regarding public preferences for environmental goods;
- Developing and implementing laboratory and field experiments to test hypotheses regarding economic behaviors under alternative natural resource allocation mechanism;
- Developing and applying integrated assessment models for analysis of climate change policies and impacts; and
- Developing coupled models of economic activity and water quality for analyzing benefits and costs of water pollution policy innovations.

Food Industrial Organization: Students will learn theory and empirical methods to investigate and research the structure and performance for food and agricultural markets. Students will gain expertise in both consumer and firm behavior, which includes strategic considerations of all major players in the market. Examples of specific topics include:

- Developing structural models of firm and consumer behavior in the market;
- Testing theoretical results with micro-level data and current marketing/industrial organization (IO) models;
- Investigating reduced-form models of market outcomes after identifying exogenous shifts in underlying market forces or policies;
- Exploring the evolution of theoretical models of consumer demand ; and
- Exploring linkages, via structural or reduced-form models between food behavior and health.

KEY ADMINISTRATIVE PEOPLE

The primary administrative contacts for EEFÉ students are the EEFÉ Graduate Program Chair and the EEFÉ Graduate Coordinator. The Graduate Program Chair is the EEFÉ faculty member who is the administrative leader of the EEFÉ program. This position is currently held by:

Professor Edward (Ted) Jaenicke
 EEFÉ Graduate Program Chair
 208-C Armsby Building
 814-865-5282
tjaenicke@psu.edu

The EEFÉ Graduate Coordinator is a staff position that directly supports the Program Chair. This position is currently held by:

Michelle Barnyak
 Graduate Coordinator
 201 Armsby Building
 814-865-0456

DEGREE REQUIREMENTS

Graduate School Degree Requirements

EEFE degree requirements are set by the Graduate School and by the EEFE program. The requirements and policies of the Graduate School apply to all Penn State graduate degrees. Graduate School requirements are given in the *Graduate Degree Programs Bulletin - the White Book* (<http://bulletins.psu.edu/bulletins/whitebook/>). Students should be familiar with this publication, with the Penn State academic calendar (http://registrar.psu.edu/academic_calendar/calendar_index.cfm), and with deadlines periodically announced by the Graduate School (<http://gradsch.psu.edu/calendar/>). The complete listing of Graduate School policies and resources for students can be found at <http://gradschool.psu.edu/current-students/student/>.

Note: There are two 16-week semesters in an academic year, Fall and Spring, and a 12-week Summer semester. The Summer semester is divided into two 6-week sessions. For purposes of this handbook the term “semester” includes the Fall, Spring, and Summer semesters.

EEFE Degree Requirements

Master of Science

Requirements listed here are in addition to requirements stated in the [DEGREE REQUIREMENTS](#) section of the *Graduate Bulletin*.

A minimum of 30 graduate course credits at the 500 and 600 level is required for the EEFE M.S. degree, including 6 credits of research (EEFE 600 or 610). Courses taken to remove deficiencies in preparation may extend the minimum number of credits required. A minor is not required. EEFE M.S. students are required to write a thesis and to pass a final oral examination as part of the requirements for the degree. The thesis must be accepted by the advisers and/or committee members, the EEFE Program Chair, and the Graduate School.

M.S. Course Work Requirements

Core Course Requirements: 15 credits consisting of microeconomic theory (3 credits), applied welfare economics (3 credits), econometrics (6 credits), and quantitative methods (3 credits). The required courses for the core curriculum are:

- EEFE 510 Econometrics I (3 credits)
- EEFE 511 Econometrics II (3 credits)
- EEFE 512 Applied Microeconomic Theory I (3 credits)
- EEFE 527 Quantitative Methods I or EME 501 Design Under Uncertainty in Energy and Mineral Systems (3 credits)
- EEFE/EME 529 Foundations of Welfare Economics (3 credits)

Additional M.S. Course Requirements: 9 credits of field electives taught at the 500 level. These courses will be chosen in consultation with the student's academic adviser and cannot include readings or independent study courses (596s).

Thesis Research: 6 credits of thesis research (EEFE 600).

EEFE 590/SARI Requirements: Penn State requires graduate students to complete a Scholarship and Research Integrity (SARI) program as a requirement for graduation. The complete EEFE SARI requirements are described in detail below. Among these requirements, M.S. Students are expected to register for EEFE 590 in the Fall Semester of their second year. This course will assist their Graduate School required SARI training utilizing their thesis research experience to develop and explore essential concepts and principles.

Doctoral Program

Requirements listed here are in addition to requirements stated in the [DEGREE REQUIREMENTS](#) section of the *Graduate Bulletin*.

Students in the EEFE Ph.D. program will be required to complete 36 credits of course work at the 500-level, write and successfully defend a second year paper, write and successfully defend a Ph.D. dissertation, and pass a candidacy examination and a comprehensive examination. The dissertation must be accepted by the doctoral committee, the head of the graduate program, and the Graduate School.

Course work requirements include 21 credits of core course work, at least 12 credits of field courses, and 3 credits of elective courses selected from a list of approved electives.

Ph.D. Course Work Requirements

Core Requirements: 21 credits consisting of microeconomic theory (6 credits), applied welfare economics (3 credits), econometrics (6 credits), quantitative methods (3 credits), and computational economics (3 credits). The required courses for the core curriculum are:

- ECON 502 Microeconomic Analysis* (3 credits)
- EEFE 510 Econometrics I (3 credits)
- EEFE 511 Econometrics II (3 credits)
- BA 513 Advanced Microeconomic Analysis for Business or ECON 521 Advanced Microeconomic Theory (3 credits)
- EEFE 527 Quantitative Methods I (3 credits)
- EEFE 532 Applied Computational Economics (3 credits)
- EEFE/EME 529 Foundations of Welfare Economics (3 credits)

*Students selecting the Energy Systems Field may petition to substitute EME 500 Energy and Mineral Project Investment Evaluation (3) for ECON 502

Field Requirements: Two fields consisting of a minimum of 6 credits each from designated field courses.

Energy Economics, Policy and Systems

- ENNEC 540 Economic Analysis of Energy Markets (3 credits)
- ENNEC 560 Mineral and Energy Finance I (3 credits)

Environment and Natural Resource Economics

- EEFE 519 Resource and Environmental Economics I (3 credits)
- EEFE 541 Resource and Environmental Economics II (3 credits)

Food Industrial Organization

- EEFE 535 Empirical Analysis in Food Marketing (3 credits)
- EEFE 536 Economics of Food Behavior and Health (3 credits)

Electives: A minimum of 3 credits at the 500 level, of which 3 credits must be selected from the following list:

- EEFE 531 Microeconometrics I (3 credits)
- EEFE 530 Microeconometrics II (3 credits)
- EEFE 550 International Economic Development and Agriculture (3 credits)
- ENNEC 541 Economics of Energy and the Environment (3 credits)

EEFE 590/SARI Requirements: Penn State requires graduate students to complete a Scholarship and Research Integrity (SARI) program as a requirement for graduation. The complete EEFE SARI requirements are described in detail below. Among these requirements, Ph.D. Students are expected to register for AEREC 590 in the Fall Semester of their second year. This course will assist their Graduate School required SARI training utilizing their second year paper research experience to develop and explore essential concepts and principles.

Qualifying Examination: All Ph.D. students are required to pass an EEFE qualifying (candidacy) exam at the end of the first year of the Ph.D. program. Any student not taking the exam at the end of the first year must receive written approval from the EEFE exam committee. All students must sit for a pass both sections of the qualifying exam within 18 months of entering the program. Successful completion of this exam admits the student to candidacy and continuation in the Ph.D. program.

The qualifying exam consists of two sections, one covering microeconomic theory and the other covering econometrics and quantitative methods. Each section is four hours long, consists of four questions, and is graded as Pass, Marginal Pass, Marginal Fail, or Fail. The entire exam is administered by the EEFE exam committee. To pass each section of the exam a student must receive a Pass or Marginal Pass from two-thirds of the exam committee. Each section is graded and passed independently. Each student is given two chances to pass each section. Both exams must be taken at the end of the first year of the Ph.D. (unless a student has special exemptions).

If a student fails to pass the exam by the end of the process, he or she will be dropped from the EEFE Ph.D. program.

The initial offering of the qualifying exam will be held in mid-May of the first year of the Ph.D. program. The microeconomics section will take place on the second Friday after the last day of exams of the Spring semester and the econometrics and quantitative methods section will take place on the following Wednesday, three business days after the microeconomics section. The retake of the exam (if needed) will be held in mid-August. The microeconomics section will take place on the third Friday of August and the econometrics and quantitative methods section will take place on the following Wednesday, three business days after the microeconomics section. Results from the exam are reported to the Graduate Staff Assistant and he/she will file the paperwork and send it to the Graduate School. Students will be notified of their scores no later than two weeks after completion of the second section of the exam.

The qualifying exam is designed to test a student's knowledge and application of the materials and topics covered during the first year of the Ph.D. program. Its primary exam is to provide each student both the opportunity and the responsibility to review and synthesize the material in microeconomic theory, welfare economics, econometrics, and quantitative methods considered essential to successful performance in subsequent course work, dissertation research, and as a graduate of an economics Ph.D. program. It is NOT intended to be a "super final" with well-posed questions and solutions.

The Penn State Graduate School's policies overseeing all programs' qualifying exam can be found here: <http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-604-qualifying-exam-temp/>

English Competency: Competency in the English language in all forms of expression is essential for progress in graduate study and is required by Graduate Council. The EEFE Graduate Committee assesses each entering student's English language competency as part of both the admissions process and the qualifying exam process. The Graduate Committee may require an entering Ph.D. student to take an exam to better determine his/her English language competency. If a student fails the exam, the Exam Committee will present a remediation plan to the student and the EEFE Graduate Committee. This remediation plan may require the student to take appropriate courses or instruction. Upon completion of the recommended remediation plan, the student will be required to retake the English competency exam. If the student fails the retake exam, she or he will be dropped from the Ph.D. program.

Ph.D. Committee Formation: Within one year of successfully passing the qualifying exam, a student must form a Ph.D. Committee to guide their research training. A student's Ph.D. Committee shall consist at minimum of four members of the Graduate Faculty. A majority of the members shall be from the EEFE graduate program. Each Committee shall have a Ph.D. Committee Chair, Major Program Member, Outside Field Member, Outside Unit Member, and include the student's Dissertation Adviser.

- The Ph.D. Committee Chair and Dissertation Adviser may be one and the same.
- The Major program member should be from EEFE and within the student's field of study.
- The Outside Field Member must have a disciplinary expertise different from the student's primary field of study and is responsible for broadening the disciplinary perspective

available to the student and the Ph.D. Committee. Ideally, the Outside Field Member will be from EEFE but not within the student's field of study.

- The Outside Unit Member is responsible for bringing to the attention of the student and the Ph.D. Committee [non-academic] issues (including, for example, conflicts of interest) that may impact a student's progress. Outside Unit Members must have their primary academic appointment in an administrative unit different than the Ph.D. Committee Chair(s) and Dissertation Adviser(s).

The EEFE Graduate Program Head shall review annually each student's Ph.D. Committee to ensure that all Ph.D. Committee members continue to qualify for service in their designated roles.

Second-Year Paper: Under the direction of their EEFE faculty adviser and Ph.D. committee, Ph.D. candidates are required to submit an original research manuscript at the conclusion of the Spring semester of the second year, and to present the findings of the research to the EEFE faculty in a seminar in the Fall Semester of the third year. The paper and presentation are intended to develop and demonstrate candidates' ability to identify research questions, conduct appropriate theoretical and/or empirical analyses to address these questions, and effectively present research findings in written and verbal forms appropriate for scholarly publication and presentation. The manuscript must address a question of scholarly significance in economics, ideally in the candidate's major field of specialization.

The second-year paper is submitted and evaluated by the student's doctoral committee. Accordingly, completion of the second-year paper requirement requires a student to select their thesis advisor and to form a doctoral committee in consultation with the advisor.

The committee may accept the paper as initially submitted, or may reject the paper. If rejected, the committee will provide the student with a critical review indicating revisions that must be made for the paper to be accepted. Students are expected to complete the required revisions by the end of the Fall semester of their year. Acceptance of the second-year paper is required before students may take their comprehensive exam.

Comprehensive Examination: A comprehensive examination with oral and written components is required. Students can take the comprehensive exam only after successfully passing the candidacy exam, having their second year paper accepted, and forming their doctoral committee. The exam is administered and graded by the student's doctoral committee. The timing of this examination is at the convenience of the student and the doctoral committee that administers it. Since the exam is comprehensive, it is recommended that it be given after the student's course work has been completed.

The comprehensive exam serves as a field exam for the student's major field of specialization and a dissertation proposal defense. It may also cover material presented in the student's course work. The specific content of the exam within these parameters is determined by the student's committee. Students must prepare and submit a written proposal to their committee prior to the date of the exam. The timing of the proposal submission in relation to the timing of the exam is

at the discretion of the doctoral committee but typically the proposal would be presented to the committee a minimum of two weeks prior to the exam.

The thesis proposal, prepared under the guidance of the Ph.D. advisor, states the research problem, its significance, proposed procedures, tentative time schedule, and other relevant matters. Students are expected to seek the advice and counsel of all members of the committee in preparing the proposal in completing the thesis.

Final Oral Examination: Upon completion of the student’s doctoral dissertation, a final oral examination is scheduled. The examination consists of an oral presentation of the dissertation by the candidate and a period of questions and responses. These will relate in large part to the dissertation, but may cover the candidate's entire program of study. The exam is administered by the student’s doctoral committee and open to the public. The dissertation must be accepted by the doctoral committee, the EEFE Graduate Program Chair, and the Graduate School, and the student must pass a final oral examination.

Recommended Plan: The recommended course schedule for a student starting the Ph.D. program in the Fall semester without any course work deficiencies is shown in the table below. Such a student would take the candidacy examination in May or June following their first Spring Semester. The timing of the comprehensive exam varies from one student to another, but it is usually taken after a student has completed most of his or her course work. Students making normal progress would be expected to complete and defend their dissertation in the fourth year after starting the program.

Year	Semester		
	Fall	Spring	Summer
First Year	ECON 502 Microeconomic Analysis	BA 513 Advanced Micro- economic Analysis for Business or Econ 521 Advanced Microeconomic Theory	Candidacy Exam
	EEFE 527 Quantitative Methods I	EEFE 511 Econometrics II	
	EEFE 510 Econometrics I	EEFE/EME 529 Applied Welfare Econ and Policy	
Second Year	EEFE 531 Applied Micro Econometrics I	EEFE 533 Applied Computational Economics	Second-Year Paper
	Field Course	Field Course	
	Elective or Field Course	EEFE 531 Applied Micro Econometrics II, or other Elective or Field Course	
	EEFE 590 Graduate Colloquium		
Third Year	Elective or Field Course	Elective or Field Course	Comprehensive Exam

DUAL-TITLE DEGREES IN DEMOGRAPHY OR OPERATIONS RESEARCH

M.S. and Ph.D., dual-title degrees are available in Demography (EEFE/Demography) for students with a strong interest in demographic theories and techniques as applied to EEFE, and in Operations Research (EEFE/Operations Research) for students with a strong interest in operations research techniques as applied to EEFE. A dual-title degree in AEREC/Demography can help a student develop skills in demographic techniques and methodologies, including geographic information systems (GIS) and statistical methods. A dual-title degree in AEREC/Operations Research can provide a student with interdisciplinary perspectives on the formulation, analysis, and solution of decision-making problems. Operations Research draws on techniques from many fields, including economics, mathematics, and engineering.

The Demography program is affiliated with Penn State's Population Research Institute (PRI). A student pursuing a dual-title degree in EEFE/Demography must meet all EEFE degree requirements as well as all Demography degree requirements. Some courses may count toward both sets of requirements. Students who wish to pursue this dual degree option must submit an application for admission to the Director of the Graduate Program in Demography. Admission to the Ph.D. dual-title degree program should be completed before the student the EEFE qualifier exam. Additional information on Demography admission and degree requirements is available online at <http://www.pop.psu.edu/demography/front-page/>.

A student pursuing a dual-title degree in EEFE/Operations Research must meet all EEFE degree requirements as well as all Operations Research degree requirements. Some courses may count toward both sets of requirements. Students who wish to pursue this dual degree option must submit an application for admission to the Chair of the Operations Research Committee. Admission to the Ph.D. dual-title degree program should be completed before the student takes the EEFE qualifier exam.

The doctoral committee for a Ph.D. dual-title degree student is recommended by the graduate major program granting the degree. The chair and at least two members of a doctoral committee must be approved by the Operations Research Committee as qualified to supervise a doctoral thesis in operations research. The Operations Research Committee is responsible for administering an examination in operations research which constitutes a portion of the comprehensive examination administered to the doctoral students in this dual-title degree option. More information about the Operations Research dual-title degree program can be obtained at <http://www2.ie.psu.edu/or/index.html>.

ACADEMIC ADVISOR AND GRADUATE COMMITTEE

Temporary Advisor

Incoming graduate students are assigned to a temporary academic advisor who consults with the new student to identify deficiencies, design a proposed program of study, and provide assistance in initial scheduling of courses. This process is to be completed before registering for the first

semester. The temporary advisor also assists the student in the selection of a permanent academic advisor.

Academic Advisor and Graduate Committee

A student's academic advisor serves as the chairperson of the M.S. or Doctoral committee. It is the responsibility of the committee to assist students in planning a course of study consistent with their interests, EEFE and Graduate School policies, supervise research required for the degree, and administer certain examinations. It is ultimately the responsibility of the student to ensure that all the requirements for his/her degree have been met.

EEFE students are required to obtain an academic advisor by the end of their first year in the program. Students who fail to obtain an academic advisor by the end of the first year could be considered to be making insufficient progress toward completion of degree. Students are permitted to switch academic advisors at any time during their graduate program.

M.S. Committee

M.S. graduate committees are required to have at least three Penn State Graduate School Faculty members. The chairperson and at least two members of the committee must be active EEFE Graduate Faculty members. The committee may include an outside member.

Doctoral Committee

A doctoral committee consists of at least 4 members of the [Graduate School Faculty](#). At least half of the members must be from the [EEFE Program](#). The committee will include:

- A chair (typically the advisor)
- One or more additional members of the EEFE faculty
- An Outside FIELD member. This person may or may not be a member of the EEFE faculty but must represent a field outside the student's major field of study.
- An Outside UNIT member. This person must have a primary appointment in a different administrative unit than the advisor (and co-advisor, if applicable). Please contact the Program Office for advice on selecting an outside unit member

In some cases, an individual may have a primary appointment outside the administrative home of the student's dissertation adviser and also represent a field outside the student's major field of study. In such cases, the same individual may serve as both the Outside Field Member and the Outside Unit Member. In cases where the student is also pursuing a dual-title field of study, the dual-title representative to the committee may also serve as the Outside Field Member and as the Outside Unit Member if eligible. Doctoral committees are formally listed with the Graduate School at the time of the candidacy examination.

Further guidelines regarding doctoral committees can be found in the [Graduate Degree Programs Bulletin](#).

ADDITIONAL GRADUATION REQUIREMENTS

Grade point: All graduate students are required to have a minimum grade point average (GPA) of 3.0 for graduation.

Time to completion: Ph.D. students are required to complete the program within eight years from the date of acceptance into candidacy. All requirements for the M.S. degree must be met within eight years from date of entry.

Registration: M.S. Candidates do not have to be registered the semester they graduate. The EEFE program will send a letter to the Graduate School when all requirements are met. Ph.D. Candidates must have continuous registration from passing comprehensives through graduation. However, if they have successfully defended their dissertation before the graduation semester starts, but after submission deadline for the current semester, they do not have to register for the graduation semester; e.g., complete defense by mid-August, which is too late for Summer graduation but before Fall semester begins, the student would not have to register for Fall even though that is when they would officially graduate. Students do not need to register for summer semesters, unless the student will officially graduate at the end of the summer semester (August).

Scholarship and Research Integrity (SARI): Penn State requires graduate students to complete the Scholarship and Research Integrity (SARI) program as a requirement for graduation. The SARI program has two parts:

Part I: CITI Online RCR Training Program

During the first year of enrollment, graduate students are required to complete an online Responsible Conduct of Research (RCR) training program provided by the Collaborative Institutional Training Initiative (CITI). The training program is available at <http://www.citiprogram.org/>. The first step is to register at this website. When doing so, please be sure to select Penn State as your affiliation. Once you have logged in and answered the appropriate question ("I need to take RCR training to satisfy requirements"). The online course consists of a series of modules. Each module contains text and case studies related to a particular topic followed by a quiz. Please note that it will take several hours (>5 hours) to complete the entire course, so it would be best to pace yourself and complete it one module at a time.

Student participation will be monitored by the Graduate Program Coordinator. Students will be required to provide documentation to the Graduate Program Coordinator. Documentation will be kept in student files. When you have completed the on-line training program, send a copy of the certificate that you receive to the EEFE Graduate Coordinator so your records are noted for fulfilling this requirement.

Part II: Five Hours of Discussion Based RCR Education

Graduate students are also required to engage in an additional 5 hours of discussion-based RCR education prior to degree completion. This requirement is met in different ways by different graduate programs. The EEFE program requires students to take 2 credits of workshops offered

on RCR topics by the Penn State Office of Research Protections (ORP). These workshops may be taken in the first or second year, but the EEFE program recommends students the second year.

In addition to these workshops, EEFE students are required to have 3 hours of discussion-based training in the second year of their program addressing the following topics: (1) Acquisition, management, sharing, and ownership of data; and (2) Publication practices and responsible authorship, and (3) Conducting peer review of scientific research, including manuscripts and proposals. The workshops are conducted by EEFE faculty (individually or in teams) with expertise in the workshop topics. Students are assigned readings to provide background information and principles for each topic. The workshops review principles, but make extensive use of case studies to generate discussion.

Thesis and Dissertation Guidelines: M.S. and Ph.D. theses must conform to the regulations of the Graduate School as given in the Thesis Guide (<http://www.gradschool.psu.edu/current-students/etd/>).

When the M.S. thesis or the Ph.D. dissertation is completed to the satisfaction of the student's graduate committee and the final oral examination has been passed, the members of the candidate's committee will sign the appropriate signatory page. After the foregoing are completed, the thesis/dissertation is to be submitted to the EEFE Program Chair for signature. The EEFE Program Chair will review the thesis/dissertation before providing the required signature. Each candidate is responsible for determining the time the EEFE Program Chair wishes for review far enough in advance of the submission deadline of the Graduate School that the review can be accomplished without undue time pressure. Do not make assumptions about the EEFE Program Chair schedule immediately before the Graduate School deadline. Inquire early!

A library containing electronic copies of student theses is maintained in by the EEFE program. Students are expected to provide the EEFE program a "pdf" copy of their theses for the library. A listserv has been created through which they can be sent – L-EEFE-Thesis@lists.psu.edu.

Penn State also maintains an electronic library of student theses for all graduate programs. Information on the availability of microfilm copies and/or descriptions of dissertations at other universities may be obtained through the Reference EEFE program of Pattee Library, 105 East Pattee. Students also submit electronic copies of their theses to the University's electronic theses and dissertations (*eTD*) program (see <http://www.etd.psu.edu/>).

TERMINATION OF GRADUATE STUDY

A graduate student will not be permitted to continue in the EEFE program in a degree program for any of the following reasons:

(a) The student's committee reports insufficient progress is reported to the EEFE Graduate Program Chair.

- (b) The student is in the Ph.D. program and does not pass all sections of the qualifier (candidacy) exam within the time specified for the exam.
- (c) The student is in the Ph.D. program and fails to have the second year paper accepted by the doctoral committee by the end of the Fall semester of the third year.
- (d) The student is in the Ph.D program and fails the Ph.D. Comprehensive or Final Examinations.
- (e) The student is in the M.S. program and fails the Final Examination.
- (f) A student fails to meet the English competency requirements.

When it is determined that a student is to be terminated for unsatisfactory scholarship, the student will be given written notice. The student will be advised in general terms the reason(s) for termination.

STUDENT GREIVANCE PROCEDURES

Students have the right to have grievances related to their academic program head. This right is exercised by submitting the grievance to the EEFE Graduate Program Chair who will in turn appoint a Grievance Committee consisting of three (3) EEFE faculty members and one (1) student to hear the case. The Program Chair will not be a member of the Grievance Committee. Normally one of the EEFE program's graduate officers will be a member of the committee. The submission must be a written statement describing the grievance which is to be addressed to the EEFE program Grievance Committee. The Grievance Committee will prepare a written report addressed to the Program Chair. The letter will be kept in the student's permanent file and transmitted to the Dean of the Graduate School for further action.

If at any time the student presenting the grievance engages legal counsel, the EEFE program grievance procedure will cease, the Grievance Committee will be disbanded, and the case will be immediately be referred to the Dean of the Graduate School.

GRADUATE ASSISTANTSHIPS

Many graduate students hold research assistantships, and occasionally graduate students receive other forms of financial support. Research Assistantships are normally provided through participating departments. Students seeking a Research Assistance should indicate this when applying to the program and should contact the EEFE Graduate Program Chair who can assist in matching students to source of support.

Service and Facilities

Participating departments provide office space, office equipment and supplies, computing facilities and support, and other services and resources.

ACADEMIC INTEGRITY

According to University Faculty Senate Policy 49 20 (<http://www.psu.edu/ufs/policies/47-00.html#49-20>), "Academic integrity is the pursuit of scholarly activity in an open, honest and

responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts."

Policy 49 20 continues, "Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others."

Students should bear in mind the importance of academic integrity in their course work, assistantship and wage payroll work, and work on theses and dissertations. If a student has questions about whether a particular action would be a violation of academic integrity, the student's academic advisor and the appropriate departmental Graduate Committee can provide guidance. The College of Agricultural Sciences' guidelines for implementing Policy 49-20 are available online at <http://agsci.psu.edu/students/resources/academic-integrity>.