

DAIRY SCIENCE DEPARTMENT
GUIDE TO GRADUATE STUDENT POLICIES AND PROCEDURES
(Last updated 10/24/16)

Table of Contents

Admission Requirements	2
Introduction	2
Terms of Employment	2
Graduate Assistantships	3
Payment of Tuition and Fees	3
Graduate Advisory Committee	4
Credit Hour Loads	4
Scholarly Integrity and Research Ethics Training	4
Other Training and Regulatory Requirements	6
Evaluation of Performance and Progress toward Degree	6
Time Limits for Degree Programs	7
Student Hints and Advice!	7
Graduate Seminar	8
Defense Seminar and Completing Student Interview	9
Publication Expectations	9
Graduate Honor Code	10
Advancement of Ph.D. students to Ph.D. Candidacy	10
Use of Departmental Equipment, Facilities, and Supplies	10
Travel and Meeting Support	11
Participation in Teaching and Extension Activities	13
Professional Associations	13
Animal Welfare and Biosafety	13
Herd and Farm Procedures	14
Guidelines for Graduate Student Involvement in Teaching	14

Admission Requirements

The GRE exam is required for all applicants. The results of the Test of English as a Foreign Language (TOEFL) is required for applicants who did not receive their bachelor's degrees from an Anglophone university and whose first language is not English. A minimum TOEFL score of 80 (internet) or 550 (paper based test) is required. Three letters of recommendation are also required.

It is expected that applicants should be near completion of a B.S. or M.S. degree in animal or dairy science, biology, microbiology, biochemistry, related biological fields, agricultural economics, or agricultural finance. Students should have a 3.0 GPA or greater and strong scientific writing and communication skills.

Students are required to apply [online](#). Applying online streamlines the application process and reduces processing time. Applicants must pay a non-refundable fee ~ \$75.

Introduction

The Dairy Science Department recognizes the significant contributions made by graduate students to departmental research, teaching, and extension programs and is committed to providing the best possible opportunity for students to learn and develop as professionals in their areas of interest. The primary purpose of this guide is to outline policies specific to the Dairy Science Department at Virginia Tech. Policies of the Graduate School are documented in the [Graduate Catalog](#) available on-line. Various [Forms](#) are available online.

Terms of Employment

Most graduate students in Dairy Science receive financial support in the form of a Graduate Research Assistantship (GRA) or Graduate Teaching Assistantship (GTA). Since all students conduct research as a part of degree requirements and assist with the teaching of classes, the Department of Dairy Science makes no meaningful distinction between graduate research and teaching assistantships. Some students are also recipients of fellowships awarded through federal agencies, the College, University, or Graduate School, and a few are supported by their own funds or funds from their home country, in the case of some international students. Regardless of the source or amount of support, all graduate students are considered to be half-time employees of the department. As such, graduate students are expected to work 20 hours per week (50 weeks per year with two weeks paid vacation) in support of departmental research, teaching, and/or extension programs. Much of this effort is related to the thesis or dissertation research conducted by all students and is heavily concentrated in the latter stages of a student's degree program. However, graduate students also are expected to contribute to departmental research projects, assist in classroom teaching, and participate in extension programs as requested by their faculty supervisors, to whom they are directly responsible. Participation in departmental research, teaching and extension activities serves not only to support departmental programs, but also to train students in areas important to eventual career success.

Because graduate students are supported by departmental funds and/or faculty funds during the summer terms, you are expected to be at work during the summer as you would be during the regular academic year. To illustrate nearly all college or university derived Graduate Assistantships are provided as 9-month academic year appointments. However, the department (or major professor) provides continuing financial support for students during the summer. This is in recognition that research projects, laboratory analysis, preparation of presentations and manuscripts do not stop simply because the Spring semester has ended. ***You should also note that your employment contract indicates that this is a yearly (12-month) appointment.*** Depending on the source of your funding, you may need to sign a supplemental employment contract to cover the summer period. If this applies to you, you will be reminded by Ms. Michael that your signature is required.

Graduate Assistantships

Graduate assistantships are currently paid at one of four steps. The graduate stipend table is divided into steps and may be found at the Graduate School website ([Graduate School Financial Info](#)). Step 8 applies to beginning MS students; Step 9 to second year MS students (specifically, students having completed 24 credit hours); Step 10 to beginning Ph.D. students or following successful defense of the MS thesis for continuing students; Step 11 applies to Ph.D. students after successful completion of the preliminary examination. In most instances, appropriate changes in pay steps occur automatically. However, students who feel that an increase has been overlooked should see Ms. Becky Michael in the departmental main office.

Payment of Tuition and Fees

The Department pays **Virginia resident** tuition and academic fees for students receiving departmental assistantships and occasionally for others as allowed by available departmental funding. Students are responsible for the University Comprehensive Fee in Fall and Spring semesters, and for tuition and fees during summer sessions in which they are registered. Current tuition rates and associated fees may be found at the Bursar's website (www.bursar.vt.edu). Full time students receiving assistantships of \$4,000 or more per year are eligible for in-state tuition regardless of their state of residence. However, establishing Virginia domicile is financially advantageous, both to the student and department. Eligible students are strongly encouraged to apply for Virginia residency through the Graduate School following their first year of residency (international students on J and F visas are not eligible).

Registration for summer terms is not required to hold assistantship and fellowship appointments but students must be registered full time (12 credit hours) during fall and spring terms. Tuition is paid by the student for any formal classes taken during summer terms, and students must be registered during any term in which preliminary or defense examinations are taken. Defending students (i.e. completing students "defending" their M.S. or Ph.D. research work) may request registration for Start of Semester Exception status (SSDS, 1 credit; [Start of Semester Defense Status](#)) when the defense exam occurs during the first 5 weeks of the succeeding term (see "Credit Hour Loads", below). Students on assistantship and not registered during the summer are subject to FICA and FICA Medicare withholding which are not withheld

during periods when they are registered. (Certain international students are not subject to FICA or FICA Medicare withholding at any time). Eligibility for benefits normally covered in the Comprehensive Fee (e.g., Health Service Fee, Bus Fee, etc.) **may** be a factor to consider if you elect not to register as a full time student.

Graduate Advisory Committee

All students are assigned a faculty supervisor (major professor) prior to, or immediately after initial enrollment. Assignments should be mutually agreeable to both student and faculty member, and each faculty supervisor should have an active research program in the area of student interest. **Within the first or second semesters of enrollment**, each student should work with his/her faculty supervisor to establish an advisory committee (a minimum of **three** members for MS committees; a minimum of **four** for Ph.D. committees) to assist in the development of a program of study and completion of the thesis or dissertation research project. Advisory Committee members are expected to provide appropriate and timely input to the academic and research programs of the student. Conversely, both students and faculty supervisors are expected to assure appropriate involvement of the advisory committees in each student's program. Students should discuss any problems related to their advisory committee with their faculty supervisor and, if needed, with the Dairy Science Graduate Student Committee or the department head.

Credit Hour Loads

Full-time credit hour loads are 12 hours in Fall and Spring semesters (in addition to courses audited). Typically, students will register for 6 to 9 credit hours of formal course work (2 to 3 classes) during Fall and Spring terms (or less during the latter stages of a graduate program), and for **sufficient hours of Research and Thesis (MS) or Research and Dissertation (PhD) credits to complete the 12-hour, full-time load**. Note that this is required for payment of assistantships and for progression from assistantship step 1 to step 2, since step 2 requires the completion of 24 credit hours.

Students who, prior to the beginning of a semester, will have 1) fulfilled all residency and course requirements and 2) scheduled their final exam to take place within the first 5 weeks of the term, are eligible to request registration for 1 hour as a *Start of Semester Defense Exception*. A Start of Semester Defense Exception Form must be submitted to the Graduate School in order to be registered as a Start of Semester Defense Exception Student. Registration as a Start of Semester Defense Exception student may affect eligibility for assistantships and certain student benefits and/or loans since students so registered do not pay the comprehensive fee and are not classified as full-time students.

Scholarly Integrity and Research Ethics Training

All students are required to meet the scholarly integrity and research ethics standards as outline below. These requirements are a part of the Dairy Science response to a CGS&P resolution on Graduate Ethics. Specifically, graduate students must complete degree program requirements for learning about 4 required scholarly ethics and integrity topics plus additional topics relevant

to the discipline. These requirements are part of the MS and PhD checklists as well as program of study form ([DASC Departmental Forms](#)).

To aid your participation in scholarly activity and interaction with peers, students are **expected** to attend the Annual Graduate Research Symposium (including at least one poster session and one oral session). In addition, students are encouraged to participate in other Graduate Student Association (GSA), college, and university research-related meetings and events which provide exposure to research conduct and appropriate presentation styles in a peer driven environment. To meet the Graduate School requirements related to the resolution described above, DASC graduate students are required to complete the following actions.

Required Topics:

1. Plagiarism and other violations of the Graduate Honor Code
 - a. Students will complete CITI training on Responsible Conduct of Research
 - i. Biomedical Responsible Conduct of Research – RCR module
 - b. Proper use of professional conventions in citation of existing research and scholarship, accurate reporting and ownership of findings, and acknowledgement of contributions to the work.
 - c. Use of Endnote will be required of all students for theses and publications. Students are required to complete Endnote training.
2. Ethical standards in teaching, mentoring, and professional activities
 - a. All graduate students are required to complete the graduate TA workshop.
 - b. Students are encouraged to complete teaching pedagogy certificate, though not required at this time.
3. Available avenues for reporting alleged misconduct
 - a. Students are required to complete IACUC training as well as the CITI module: Investigators, Staff and Students - Basic Course
 - b. The DASC department has an active Graduate Committee that consists of 3-4 faculty members. All students are aware that they can meet with any of the faculty to report concerns, issues, and misconduct.

Optional Topics:

1. Appropriate lab procedures and maintenance of lab notebooks and other research documentation
 - a. Option A: Completion of the CITI training module which covers lab notebooks.
 - i. Biomedical Responsible Conduct of Research – RCR module
 - b. Option B: Completion of ALS-5324 Research Ethics Ag & Life Science is highly encouraged.
2. Appropriate research protocols involving human and animal subjects'
 - a. IACUC-related training completion is required by all graduate students.
3. Guidelines for maintenance of confidentially
 - a. Included in required CITI training
 - i. Biomedical Responsible Conduct of Research – RCR module

4. Guidelines for determination of authorship
 - a. Included in required CITI training
 - i. Biomedical Responsible Conduct of Research – RCR module

Other Training and Regulatory Requirements

While there may be differences between programs within the department, most graduate students (because of your involvement in laboratories, teaching in laboratories or at the farm facilities) will be required to complete a variety of [Environmental Health and Safety](#) training sessions, [Institutional Animal Care and Use Committee](#) (IACUC), and the [Office of Research Education & Administrative Compliance](#) training modules BEFORE you can actively participate in your research and teaching activities. Please consult with your major professor and laboratory personnel for details on specific training that will apply to you. This link ([Required Research Trainings](#)) via the Office of Research & Innovation provides a training overview that may apply to graduate students depending on specific research activities and sources of funding for your research project. This link to the [Collaborative Institutional Training Initiative](#) (CITI) website provides access to a number of training modules that satisfy departmental and VT requirements. On this homepage you log in through your institution (Virginia Polytechnic Institute and State University).

Specific to **EHS** some of the likely training topics include:

- Compressed Gas Cylinder Safety
- General Laboratory Safety
- Laboratory Hazardous Waste
- Laboratory Radiation Safety Training (Isotopes, X-Rays, Lasers)
- Personal Protective Equipment (PPE) Awareness
- Portable Fire Extinguishers
- Safe Autoclave Use and Verification

Specific to **IACUC**

- Core IACUC Training (Core)
- Virginia Tech-Specific IACUC Training (VT)
- Virginia Tech Occupational Health and Safety Education Training

Specific to the **Office of Research Education & Administrative Compliance** (CITI courses)

- Conflict of Interest and Commitment for Faculty, Staff and Student
- Biomedical Responsible Conduct of Research
- Working with Animals in Biomedical Research

Evaluation of Performance and Progress toward Degree

In an effort to foster communications between graduate students, their faculty supervisors, and advisory committees, the Dairy Science Department requires an **annual evaluation** and **communication** of graduate student performance and progress toward either the M.S. or Ph.D. degree. The process is initiated with a written report, from each graduate student to his/her

faculty supervisor, which appropriately details the graduate student's academic and research program progress during the preceding year. The form of the report is the prerogative of the faculty supervisor and due by **February 1st** of each year or earlier as designated by the faculty supervisor. In response, faculty supervisors will, by **March 1st** of each year, write a letter which details the supervisor's evaluation of each graduate student's performance and progress toward a degree. Graduate students and faculty supervisors should meet at an appropriate and convenient time to discuss the student's report and supervisor's evaluation, concentrating most especially on any differences in expectations or evaluation between the student and supervisor. Both the student's report and supervisor's letter will become a part of the student's file. It is expected that advisory committee members will be used appropriately to develop each student's academic program, in the planning and execution of the research project, and in contributing to and review of the evaluation letter.

To assist you and your advisor, the department has created a **Graduate Student Check List** and the **Annual Graduate Student Evaluation Form**. These are available on the DASC webpage [VT DASC Homepage](#). Briefly, the evaluation would include a listing of milestones accomplished, documentation of committee meetings, listing of talks presented, publications, teaching activities, service activities, awards and honors, a student statement, etc.

The annual evaluation of graduate students provides an opportunity to insure that appropriate progress toward degree requirements is occurring and to allow for adjustments in the program of study, teaching activities, or research efforts. Clearly, it is also important to keep the advisory committee informed. Remember your advisory committee is not likely to seek you out. It is your responsibility to use your advisory committee effectively. These members can provide excellent insight, perspective, and encouragement but only if you engage them. Since the evaluations occur in the Spring Semester (see above) – to meet graduate school requirements -- your first evaluation may well be rather brief.

Time Limits for Degree Programs

Guidelines for time to complete graduate degree programs are established as departmental recommendations in the interest of both the department and student. As a general guideline, it is expected that MS programs will be completed within **2.0 years** and that Doctoral programs will be completed within **3.5 years**. Successful students should expect to continue receiving financial assistance from the department and/or major professor's program. In the event that these recommendations are exceeded, there is the possibility that financial support can be lost.

Student Hints and Advice!

To assist you and your major professor staying on track with your program, some major milestones you need to keep in mind are listed below. You may need to jog your major professor's memory on these matters! Not to be harsh but ultimately it's your career and your future that is at stake – take the responsibility to keep on top of the details.

- Create an advisory committee and complete your [program of study](#) form by the end of the first 6 months after the start of an MS degree or by the end of the first year for Ph.D. candidates (earlier would be better in most cases).
- A thesis or dissertation proposal should be submitted and approved by your Advisory Committee as soon as practical e.g. no later than the end of the second semester for the MS or end of the first year for Ph.D. students. [Clearly, this depends on close communication with your major professor].
- The MS thesis should be completed – defended, approved, and turned into the graduate school no later than **2.0 years** into your program [see previous regarding support expectations]. If you go beyond this recommendation you may be without financial support during the semester that you defend your thesis (see defending student status).
- It is fully anticipated that Ph.D. candidates should complete their programs in **3.5 years**. However, to be successful requires, planning, and careful attention to details. This also means practically that most research problems will have to be a part of ongoing and likely at least partially previously planned research by your major professor.
- New Ph.D. students who have not initiated research projects should strongly consider taking a full load of courses (probably 4 per semester) during the first and/or second semester.
- Ph.D. students should take their preliminary exam by the end of their second year.
- Publications of research findings in professional journals is critically important to the department, your major professor, and your professional development. Keep this in mind as you prepare you thesis or dissertation. It is now very common to develop thesis or dissertation chapters essentially as papers.
- Take advantage of opportunities to teach class, give presentations and make reports to hone your written and oral communication skills.

Graduate Seminar

Public speaking is a critically important skill in almost all careers, and one which can be perfected only through practice. The primary objective of the graduate seminar in Dairy Science is to give students the opportunity to make group presentations with constructive evaluation of their performance. A secondary objective is to provide both speaker and audience with a learning experience which broadens their base of knowledge by presenting topics beyond the often narrow scope of their own research work.

Requirements for graduate degrees in Dairy Science include **two** seminars for the MS Degree and **three** for the Ph.D., given for academic credit (A-F, grading). Continuing Ph.D.

students (with 5 credits of seminar required by the Department) will be affected by the Graduate School policy which allows a maximum of 4 seminar credits to be counted toward meeting minimum degree requirements. However, it is both acceptable and common for Ph.D. students to exceed minimum requirements, and seldom do students use the maximum credits for Research and Dissertation allowed toward meeting degree requirements. The courses and grades will appear on the student's transcript.

One seminar for either or each degree will be given on a topic of the student's choosing (but cannot include data from ongoing thesis/dissertation research). Topics will be certified by the student's major advisor to be outside the primary research area of the student. All other topics will be suggested by the student. Seminars given for credit in discipline seminar series (e.g., genetics or nutrition) may be used to substitute for departmental seminars, but will be considered as seminars on topics of the student's choosing. Attendance at Graduate Seminar is required for students taking seminar for credit during a given semester. Attendance for other graduate students is expected, as it is for faculty, except where unavoidable conflicts occur. It is also expected that students attending seminar BUT not presenting register for seminar (DASC 5004, 1 credit) using the pass / fail option. Those presenting in a given semester register for seminar (DASC 5004, 1 credit) using the A-F grading option. The graduate seminar also includes a written assignment. A description of the graduate seminar assignment and the rubrics used for scoring of the written assignment and the oral presentation are available on the DASC website.

Defense Seminar and Completing Student Interview

Students completing degree requirements are expected to present a concise seminar (40 to 45-minute presentation with 5-10 minutes for discussion), on their thesis or dissertation research, immediately preceding their defense examination. This seminar is intended to replace the traditional opening statement to the graduate committee during the defense and to keep faculty and graduate students informed regarding departmental research programs. The requirement for the defense seminar is waived in the event that a departmental seminar has been, or will be, given on the completed thesis or dissertation research.

All graduate students are requested to complete a graduate program evaluation form and to schedule a completing student interview with the department head prior to leaving the university. Information provided by students, which is confidential with respect to source, contributes significantly to the evolution and improvement of departmental graduate programs.

Graduate students are now required to submit theses and dissertations electronically. Procedural details are available on the ETD Project [homepage](#). ETD workshop schedules and access to support materials also are available from the above address.

Publication Expectations

All graduate students are expected to submit a minimum of one draft of a paper for submission for publication **PRIOR** to graduation or completion of degree requirements. It is expected that your research activities should lead to publication of your results in a refereed

scientific journal. The choice of an appropriate journal format, style for your draft paper is to be agreed upon between yourself and your major professor. For some perspective, it is anticipated that an MS program would lead to **at least** one publication but depending on the specific circumstances 1-3 publications are often possible. In the case of Ph.D. programs 2-3 publications should likely be viewed as a minimum number. It is not uncommon for Ph.D. efforts to produce 4 or more full publications.

Graduate Honor Code

All graduate students are expected to abide by the standards of academic integrity and ethical behavior established in the Virginia Tech Graduate Honor Code. Details of the Code, including penalties for violations, are included in the Graduate Catalog. Since some aspects of appropriate conduct are course-specific (e.g., collaborative work with other students on assignments), the syllabus for each course should be examined carefully to determine instructor expectations.

Advancement of Ph.D. students to Ph.D. Candidacy

To advance to Ph.D. Candidacy, Ph.D. students must take and pass preliminary (qualifying) exams; this should occur during the second year of the student's program. Particular attention is drawn to written preliminary examinations for admission to candidacy for the Ph.D. degree. These examinations are unique in that they generally are administered outside the traditional, in-classroom examination setting and may permit the use of various informational resources in responding to questions. Typically, there is a written portion of the exam which occurs over the course of about a week. During this time the student responds to questions submitted to the major professor by members of the advisory committee. Depending on the wishes of the committee these questions can be either open book or closed book. After the written exam – typically the following week – an oral examination follows. The format for this exam typically involves follow-up questions related to responses to the written examinations as well as wide ranging questions in the general area of the student's interest and in areas related to course work taken by the student. Students taking preliminary examinations are **not** allowed to seek assistance from other individuals nor should they share examination questions with other students without permission from the faculty member submitting the questions.

Use of Departmental Equipment, Facilities, and Supplies

Graduate students are afforded the use of departmental equipment, facilities, and supplies on the same basis as faculty and staff; i.e., if an activity is departmental business, use of departmental facilities and supplies in support of that activity is appropriate. Otherwise it is not. This includes use of phones (long distance), university mail, and office supplies. Use of the departmental copier should be arranged initially through the student's faculty supervisor (an access code is required to operate the copier; operational training is required to receive an access code). *The copier should **not** be used to copy theses, dissertations or materials related to classes taken by graduate students.* Items related to the student's research or participation in teaching or extension programs may be copied at departmental expense. Mass copying of journal articles or book chapters is **not** allowed. You should make use of electronic files to the greatest extent

possible. Copy facilities for personal materials are available at the University Library on a charge basis.

The departmental Large Conference Room (room 2390; suitable for meetings of ~ 15-20), is available to graduate students for meetings on a first-come-first-served basis and should be scheduled through Ms. Michael in the main departmental office. Extended sessions (e.g., all day or longer study sessions) are acceptable so long as the room is not needed for meetings by faculty, staff, or other graduate students.

Students should obtain keys to the building and appropriate work areas from Ms. Becky Michael in the departmental main office. Graduate students, along with faculty and staff, are responsible for the security of offices and laboratories.

Travel and Meeting Support

Participation in professional meetings is an integral part of graduate education. The department encourages such participation by providing support to partially offset graduate student travel expenses. Under usual circumstances (see below) the department will endeavor to provide the following support to graduate students.

Travel

- 1) For meetings that do not require airline service $\sim \leq 400$ miles the department would pay the costs of a motor pool vehicle or POV for groups of 2 or more students.

When possible, group travel (VT Vehicle) is highly encouraged.

Conference Fees, Meals, and Other Expenses

- 1) Students **may** receive **yearly** departmental support at a maximum of \$700 to \$1,000
 - a. The \$700 limit for up to two meetings per year when the student does not present.
 - b. The \$1,000 for up to two meetings per year when the student is presenting at the conference.

General Procedures

- 1) A Graduate Travel Authorization Form (located on the graduate website) must be completed with signatures and turned into Ms. Becky Michael in the main office by March 1 of each year or as soon thereafter as possible. Application subsequent to March 1 does not preclude departmental support but does risk denial of support due to prior commitment of available funds. Part time graduate Students are not eligible for departmental Support.

- 2) Travel Authorization forms should be submitted 30 days in advance or as soon as you are aware of the travel. Virginia Tech requires that all International travel be submitted a minimum of 30 days in advance.
- 3) Receipts should be submitted to the Departmental Administrative Assistant or Departmental Fiscal Coordinator when you return to Blacksburg for your reimbursement to be completed. Due to University policy changes no per diem coverage can be claimed. All receipts should be itemized.
- 4) Departmental support may be supplemented by funds from the student's faculty supervisor or from other sources.
- 5) For example, the VT Graduate Student Assembly Travel Fund has been a frequent source for travel support. Many professional organizations and honor societies also have programs to support graduate student travel. You are strongly encouraged to seek additional sources to supplement your travel expenses. This is of course a practical benefit and if successful an appropriate addition to your resume. Please make Mrs. Lisa Bishop aware of any awards that you will be receiving.

Approval for, and levels of travel support, will be determined during each Spring semester by the Department Head in consultation with the Graduate Committee. If necessary because of limited funds, approvals will be awarded in the following priority.

1. Finishing Ph.D. candidates presenting papers
2. Finishing MS candidates presenting papers
3. Ph.D. students presenting papers, by seniority
4. MS candidates presenting papers, by seniority
5. Ph.D. students not presenting papers
6. MS candidates not presenting papers

Special Case

The ***Polan Nutrition Travel Scholarship Endowment*** is a departmentally managed fund that is available to nutrition focused graduate students. This endowment fund, created in honor of Dr. Carl Polan (a former Dairy Nutrition Professor in the Dairy Science Department), is targeted to support expenses for dairy nutrition students to participate in nutrition focused conferences, workshops, and meetings. The typical total amount of support available each year from this source is ~ \$2,000.

Priority for approval for use of these funds include:

- Group participation in a conference, meeting, or workshop
- More senior students i.e. those in the later phases of their graduate training
- Shared travel, rooms, and expenses

Participation in Teaching and Extension Activities

All graduate students are given the opportunity to work with faculty members in the preparation and delivery of instructional material for departmental classes or extension programs. Students also may arrange to accompany extension specialists on problem solving herd visits or to participate in special extension projects working intensively with one or more herds on a particular problem area such as nutrition, mastitis, reproduction, etc. Participation in these activities provides extremely valuable experience for students and is regarded highly by potential employers. Students should first consult with their faculty supervisor regarding opportunities to assist with formal courses and/or participate in extension programs. With approval of their faculty supervisor, students should contact the appropriate instructor or extension specialist.

Professional Associations

The department strongly encourages graduate student membership in professional associations, especially the American Dairy Science Association (ADSA). Student members of ADSA receive all privileges of membership, including the *Journal of Dairy Science* and dramatically reduced registration fees at the annual and regional meetings. Applications for membership are available from the ADSA web site which can be accessed through the Dairy Science homepage.

Animal Welfare and Biosafety

The Department of Dairy Science fully supports the intent of the University to "safeguard and ensure the humane treatment of all animals used in research, teaching, and testing and to comply with all applicable governmental laws, principles, and standards governing such uses". Questions regarding requirements for proper treatment of animals should be directed to the *Investigator's Guidebook for the Care and Use of Research Animals on the Virginia Tech Campus* or to the Department Head. "All teaching uses as well as any research involving vertebrate animal species (excluding human subjects), regardless of funding source, are under the purview of the Virginia Tech IACUC. Animals cannot be obtained or used without prior protocol review and approval by the IACUC." Additional information is available at <https://www.researchcompliance.vt.edu/iacuc/>.

In addition, the Department of Dairy Science is committed complying with the Institutional Biosafety Committees (IBCs). The goal is to ensure that all ongoing research that involves the use of biohazardous agents, including recombinant and/or synthetic nucleic acid molecules is conducted with the health and safety of all personnel working with biohazardous agents as a priority. All such research conducted at Virginia Tech must be approved by the IBC committee. Furthermore, all students must complete appropriate training prior to conducting any research at Virginia Tech. Additional information is available at <https://ibc.researchcompliance.vt.edu/ibc-requirements>.

Herd and Farm Procedures

The herd and farm committee is a standing committee within the Department of Dairy Science. Membership includes faculty representatives from the department, the farm manager, and veterinary support personnel from the College of Veterinary Medicine. The committee provides oversight and recommendations to farm operation to insure that farm resources are available to support the teaching, research, and extension missions of the department. The committee also coordinates the use of animals at the farm in support of these missions. Procedures for requesting animals for research and teaching purposes can be obtained from Dr. Petersson-Wolfe.

Guidelines for Graduate Student Involvement in Teaching

Assumptions:

Through experience and observation, the faculty recognizes the importance of teaching experience for graduate students. Whether it is in the classroom or in extension programs, the practiced discipline of preparation, presentation and evaluation will be valuable to all graduate students.

The department is responsible for teaching, research, and extension, and graduate student involvement in all of these areas are important and necessary.

Graduate student involvement in teaching is a combination of learning to teach and contributing to the instruction and management of the class. Graduate students require varying amounts of training and supervision in carrying out their duties. Faculty need to work personally with graduate students to develop the student's teaching skills and understanding of the teaching process.

All graduate students, regardless of source of funding, are required to be involved in some aspect of teaching.

Because of differences in need, ability, and background, not all graduate students will be required to participate in teaching activities in the same manner.

There are diverse needs for graduate student assistance in the various courses. Leading lecture and lab sections may be the most demanding experience in terms of time, knowledge, and ability required. Other supporting activities are still critical, such as grading papers, developing educational materials, and assisting students on a personal basis.

The experience provided to graduate students should fit the needs of both instructor and graduate student.

Policy:

All graduate students, regardless of degree (M.S. and Ph.D.), appointment or funding source, are expected to assume some form of teaching assistant (TA) responsibility during their degree program. All students are required to serve as a TA for a ***minimum of once per academic year*** but no more than 3 consecutive semesters. It is the responsibility of the major professor to ensure that the requirement has been met. As preparation for becoming a TA, all incoming students are required to enroll in the GTA workshop (GRAD 5004) the first semester of their program.

Once per calendar year, typically in June, the **Dairy Science Graduate Committee** will distribute a call for TA requests for the entire upcoming year. Eligible faculty will submit TA requests for their courses; these recourses are typically listed as DASC, APSC, or ALS, and are a mix of required and elective undergraduate courses. Sometimes a specific student will be requested due to their unique expertise and other times the request will be similar to “one TA requested”.

The compiled list of TA requests and courses will then be distributed to the graduate students. Graduate students will be given approximately 1 wk. to consider options and will then rank their preferences first for the semester they would most like to TA in and second, the courses they would most like to assist with.

The graduate committee will then meet, review, and assign TA duties for the entire year. TA assignments will be announced at least two weeks before fall semester classes start.