

## Welcome to the Department of Animal and Veterinary Sciences (ASCI)

This Handbook provides a general orientation to the department, the graduate college, and the UVM community. It also covers the basic requirements of the ASCI graduate programs.

### I. BEFORE YOU ARRIVE

If you have some questions before you arrive, here are some people who can help:

Contact	Phone (802)	Email	Location/Building
Lee Andors <b>ASCI Administrative Support</b>	656-0155	Lee.Andors@uvm.edu	102 Terrill
Lia Beliveau <b>ASCI Financial Services &amp; Human Resources</b>	656-0136	Lia.Beliveau@uvm.edu	102A Terrill
Feng-Qi Zhao <b>Graduate Program Coordinator</b>	656-0786	fzhao@uvm.edu	211 Terrill
<b>Graduate College</b>	656-3160	gradcoll@uvm.edu	330 Waterman
<b>Office of International Education</b>	656-4296	InternationalStudents@uvm.edu	Living/Learning B-162
<b>Student Financial Services</b>	656-5700	sfs@uvm.edu	223 Waterman

Mail and packages may be sent to the Department at the following address. You will share a mailbox here as a graduate student.

#### Use this address:

(Your name)  
Department of Animal and Veterinary Sciences  
102 Terrill Building  
570 Main Street  
University of Vermont  
Burlington, VT 05405

### HOUSING

Almost all students live off-campus in the Burlington area. We encourage you to find housing during the summer months (or earlier), when there are more vacancies. Classified sections in the following local papers are a good place to start: UVM off-campus housing, Burlington Free Press, Seven Days, apartmentguide.com, craigslist.com and apartmenthomeliving.com have classified ad listings.

Housing	Estimated Cost*
One-bedroom apartment	\$850-1200+
Two-bedroom apartment	\$1200-1800+
Room for rent	\$550-800+

\*Estimates are without heat or utilities.

Publication	Description or Where to find
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<a href="#">Craigslist</a> (most listings here)	Community Classifieds Website
FaceBook	“Burlington Area Housing and Rentals” group, “Sell, Trade, Swap, Buy Vermont” or the “Property Rentals” category in Facebook Marketplace
<a href="#">Burlington Free Press</a>	Local Gannett daily newspaper
<a href="#">Seven Days</a>	Free weekly alternative newspaper, distributed Wednesday. Get at City Market and elsewhere.
Bulletin Boards	Muddy Waters Coffee Shop on Main St. between Church and Winooski, City Market 82 S. Winooski, UVM Campus Howe Library (near reserve desk), outside Howe Library and in most buildings.
UVM Res Life Apartments & Family Housing	Housing options at UVM appropriate for grad students <a href="https://www.uvm.edu/reslife/affiliate_housing">https://www.uvm.edu/reslife/affiliate_housing</a>
Medical school - Student Affairs Office	A list for Medical students that is often shared with those in need (656-2150 or ask in Given E215B)
Gradnet	Listserv that tends to list lots of housing opportunities. Instructions for signing up for Gradnet can be found at <a href="https://www.uvm.edu/graduate/gradnet">https://www.uvm.edu/graduate/gradnet</a> .

A limited number of university-affiliated off-campus housing apartments are available for full-time students at the Ethan Allen Housing facility. Located in Colchester, the apartments are on a bus route, five miles from the main campus. Detailed rental information may be obtained from 802-862-6244. Interested students are encouraged to apply early for these apartments.

## **II. WHEN YOU ARRIVE**

Here is a list of some things to help get you settled in with the program and life in Burlington.

1. **Accessing Terrill:** Very few spaces require physical keys. In the event you need a key, these are managed by Lee Andors in the main office. The building and most laboratories and shared spaces are accessed using your CATcard. See Lee if you are encountering problems with access. If you are locked out of the building (or your office) accidentally and no one is around, you can call UVM Police Services (656-3874, 6-FIRE) by phone or through a blue light emergency phone. During business hours, you can contact custodial services (656-3385) for assistance with lock outs. To maintain the security of the building and laboratories, do not prop doors open. Do not provide access to anyone who does not have permission to access a space. Always make sure doors are closed and locked when leaving the building.
2. **Student ID/CATcard:** You can get your student ID card from the CATcard Office in Billings Library, Room B150 (656-4509). Your first card is free. Replacement of worn cards costs \$10; replacement of lost cards costs \$25. If you have an iPhone or Apple Watch, you can connect your CATcard to Apple Wallet and use your device rather than your card. Your CATcard is used to borrow books from the library, use the UVM gym, and ride the city buses for free. You can also use your CATcard as a debit card, called CAT\$cratch, to pay for photocopies in the library, campus eateries, and some Burlington businesses. Your CATcard will also permit entry to the labs as well as Terrill Building after hours. Lee

can help set up your building access for you. For an orientation to what you need to know about the CATcard, visit <https://www.uvm.edu/catcard/new-student-orientation>.

3. **Office space:** Most ASCI graduate students have office space in 203 Terrill, the Graduate Office. Access to laboratory and other spaces in the building is controlled. Your faculty advisor submits an access request form to **Lee Andors** for processing.
4. **Student profiles:** Be prepared to provide a photo and short bio to add to our wall of welcome within a few weeks of starting.
5. **Email:** To activate your UVM email, set up your netid at the following website: <http://www.uvm.edu/account/>. You can check mail via the web (<http://webmail.uvm.edu>), Outlook, or set up the email “client” on your phone or computer. Official UVM communications come through your uvm.edu email. Make sure to check this often or auto-forward to the email provider of your choice. Some UVM professors will not respond to messages sent from personal, not uvm.edu, addresses, so be sure to use your UVM email for correspondence that you want to have read. You will automatically be added to general department, college, and university listservs. Once you complete laboratory safety training, you will be added to the important listservs for ASCI, CALS, UVM, and laboratory safety (UVMLABSAFE). The Graduate College has a discussion list with useful information for all grad students. The email address is: GRADNET@LIST.UVM.EDU. Contact the Graduate College to be added to the gradnet distribution list.
6. **Computers – ETS:** At UVM the IT department has been traditionally known as Enterprise Technology Services. Everything you need to know about campus computing can be found through the links on this page: <http://www.uvm.edu/it/students/> --not the most user-friendly site on campus. However, the Tech Team is really helpful. If you have any questions, give them a call at 656-2604, or email [helpline@uvm.edu](mailto:helpline@uvm.edu), or visit them in the Computer Clinic in room I-117, Billings/Ira Allen Chapel. The clinic is best accessed from the side of Billings that faces Votey Hall. UVM students have access to a free license for Microsoft Office 365. The UVM software library (<https://www.uvm.edu/software/>) is where to find other programs that you can download and install for free such as statistical packages and a reference manager. Make sure you configure your computer to allow secure storage and backup of your data on the UVM servers. You also have access to a file transfer service for sending large files here: <https://filetransfer.uvm.edu/>
7. **Mail/Photocopiers:** The department photocopier in the mail room can print black and white or color copies. This is the preferred machine for print jobs. The printer in the grad office is appropriate for 1- to 5-page jobs only. (There is also a department photocopier on the third floor (room 305), but it only prints in black and white. Use the first floor machine when possible, especially for large jobs.) The photocopiers can also scan and fax. You need an access code to print to or use this machine. Access numbers are assigned to various departmental budgets (depending on the nature of the information you are copying). If the print job is research related, you would use your advisor's research access number; if it is related to the class that you are TAing, you would use the teaching access number. Your advisor will tell you what access numbers to use. It is important to keep these numbers confidential because the copying charges are linked back to particular budgets.
8. **Books:** Texts may be purchased from the UVM Bookstore in the Davis Center. Wait for the first few days of classes to see which books are essential to buy, which can be checked out from the library or found at the library reserve desk, and which can perhaps be borrowed from another student.
9. **Parking permit** (restricted to students living more than one-half mile from campus): Permits are available from Transportation and Parking Services, located at the Ira Allen School on Fletcher Place.

Check <https://www.uvm.edu/transportation/student-parking> for the current fee. A parking permit is not required on weekends, holidays, and after 3:30pm daily. Those needing to park close to Terrill temporarily to facilitate transport of research samples and equipment must know and follow the rules. See Lee Andors for details.

### ***Activating your funding (How to get paid)***

At this point you have returned your offer letter, along with enclosed forms, to the Chair of the Department of Animal & Veterinary Sciences, indicating acceptance of the position, salary, and start date (see below for the information of financial assistance). In addition to the acceptance letter, you must fill out and return the Data Form and W-4 form needed to start you on payroll. When you arrive, see **Lia Beliveau** (656-0136) to fill out your I-9 form. To do this you will need the following identification: driver's license, social security card, U.S. Visa, and/or passport. (International students must visit the International office as soon as possible after arrival to complete some forms).

Payday is semi-monthly on the 15th and 30th of every month, and your check will be sent to the department mail room, 106 Terrill, or directly deposited into your personal bank account. A convenient and highly recommended option is direct deposit of your paycheck, which you can arrange by logging into PeopleSoft, <https://www.uvm.edu/~erp/portal/> (duo multi-factor authentication is required to access the site), entering your UVM Netid and password then Click on Human Resources, Self Service, Payroll and Compensation, then Direct Deposit. Be sure to ask what fees, if any, are covered by your funding, since you will be required to pay any excluded graduate fees and health fees before you are allowed to register. The University also allows payroll deduction if you cannot afford to pay the fees all at once. This has to be set up at Student Financial Services, 223 Waterman Building, (802) 656-5700.

### ***Orientation***

The Graduate College hosts a recommended orientation for graduate teaching assistants each fall. Howe Library and Division of Computing and Information Technology also host an orientation meeting each fall for new graduate students.

The best suggestion for an international student is not to miss the 5-day orientation offered by the Office of International Education (OIE) at the beginning of the semester. They give a good orientation of Howe Library, the Student Health Center, and Patrick Gymnasium and the facilities available. The tour of the Howe library could be helpful, as the library is huge and has many sections providing varieties of services. The OIE provides direction and help in opening bank account and in getting social security numbers. During the orientation, they also introduce the free services provided by Living and Learning (L/L) Center for scholars for whom English is the second (or third) language. An International Student Handbook is available through OIE for more precise information on housing, immigration and employment, obtaining social security number, health insurance, legal services, driver's license, student services, language improvement and general academic support

### ***UVM Student Health Insurance Plan (UVM SHIP) and Student Health Center***

UVM Student Health Insurance Plan is available to UVM graduate students enrolled for 5 credit hours or more and is mandatory for graduate students registered for 9 or more credits. The College of Agriculture and Life Sciences pays 100% of the cost of single UVM health insurance for all full-time graduate students who do not have alternate insurance, with a smaller percentage paid for part-time students.

Students who are not otherwise covered under a health policy are required to purchase health insurance through the university. All international students, regardless of other coverage, are required to purchase health insurance through UVM. There is an additional charge for this extended coverage beyond the student health fee. The cost of student health insurance can be found here: <https://www.uvm.edu/health/insurance>. Further details are available from the Student Health Services (<https://www.uvm.edu/health/SHS>). To participate in this insurance, the student health fee must be paid each semester in addition to the annual insurance premium.

The Center for Health & Wellbeing is available to students throughout the fall and spring semester and during the summer. The semester fee should be paid at the beginning of each semester. This fee covers unlimited visits to the Center for the summer. It does not include any additional laboratory fees. This fee may be paid at any time and can be paid at the time of your first summer visit to the Center. Any questions regarding the Center or this fee can be answered by calling the Center for Health & Wellbeing at 656-3350. The Center for Health & Wellbeing, located at 425 Pearl Street, usually has appointments on short notice. Another great benefit is free counseling. Working in a small group of intense individuals can be tough and everyone has reasons to talk. Call the Counseling Center 656-3340 to make an appointment.

All new students need to file a personal health and immunization record with the Center for Health and Wellbeing at 425 Pearl Street. You must have current MMR (Measles, Mumps, Rubella) shots. You should be sent a form to fill out.

Through an arrangement with a commercial insurance company, students are able to procure health insurance (see <https://www.uvm.edu/health/insurance>) that provides coverage for services beyond those offered by the Center for Health & Wellbeing.

### **Registration**

Advising is a crucial element of graduate program planning, and it is important that you consult your faculty advisor to outline your course of study prior to registering for courses. Registration is done in the “Registrar” tab in your myuvm.uvm.edu webpage.

### **Graduate student fees**

Visit the following site for the latest graduate student fees:  
[https://www.uvm.edu/studentfinancialservices/graduate\\_tuition\\_and\\_fees](https://www.uvm.edu/studentfinancialservices/graduate_tuition_and_fees)

Continuous Registration Fee - When a graduate student has completed most or all of the credits required in the degree program but has not completed all degree requirements (e.g., thesis defense), the comprehensive fee is no longer required. Instead, you must register for GRAD 901 (less than Half Time - 1-16 hours effort per week), 902 (at least Half Time, but less than Full Time - 20-32 hours effort per week), or 903 (Full Time - at least 36 hours effort per week) and pay a continuous registration fee of \$100-\$300 per semester.

### **Campus Resources (not specific to research)**

#### **Diversity and Inclusion**

**UVM supports a culture of excellence that is diverse and inclusive. There are many ways to get involved and learn more. Check out the resources and activities available on campus:**

[https://www.uvm.edu/about\\_uvm/diversity](https://www.uvm.edu/about_uvm/diversity)

### **UVM Dining**

UVM Dining is operated by Sodexo. They have a very informative website at <https://uvm dining.sodexomyway.com/#>. Any one can get a Retail Points Plan, which makes a lot of sense if you plan to make use of dining venues in the Davis Center and elsewhere that offer a discount to points users. A directory of retail dining venues can be found here:

<https://uvm dining.sodexomyway.com/dining-near-me/retail>. Points also can be used at these four all-you-can-eat locations: Central Central, Harris Millis, Northside, and Redstone Unlimited.

The bottom line is if you want to grab a bite to eat on campus there are several locations available. The Given Bistro serves both breakfast and lunch. The Cyber Cafe, located in Bailey/Howe Library, is a gourmet coffee house with a complete selection of salads, sandwiches, muffins, and cookies. Waterman Cafe offers express breakfast and lunch options while at Waterman Manor you can enjoy an a la carte menu with waited service. The Davis Center houses many wonderful places to eat such as The Marketplace, a global bazaar featuring the authentic flavors of India, Japan, and the Mediterranean, as well as classic American favorites with an international flair; Brennan's Pub, a fun laid back gathering place; Green Roof Deli, a great place to get local fare in deli standards; New World Tortilla, a popular eatery featuring burritos, tacos, and specialty wraps; and the UVM Dairy Bar, which serves ice cream and smoothies made with milk from the UVM herd. Although they are not part of Sodexo, you'll also want to check out the vendor trucks along University Place.

### **UVM Libraries**

The physical libraries you will use most are the main library, Howe Library, in the center of campus, and the Dana Medical Library between Given and the hospital. The electronic resources available through the libraries are very extensive and requests for interlibrary loan materials are processed quickly. Training is available for conducting references searches and using reference managers. A library tour and a visit with the reference librarian are highly recommended.

### **UVM Bookstore and Techstore**

As you might expect, the UVM Bookstore sells UVM clothing, gear, gifts, and textbooks. The UVM Techstore within the bookstore sells Apple and Dell computer products and accessories. The Techstore also has amazing deals on software, so check there after checking the UVM software download site. The bookstore is on two levels: retail sales on the third floor and textbooks on the second floor. Look for the holiday sale at the end of the fall semester each year. The UVM Bookstore is also the place to purchase academic regalia prior to commencement (<https://www.uvm.edu/commencement/caps-and-gowns>).

### **Resources for International Students**

The Office of International Student Services (ISS) within the Office of International Education (OIE) conducts orientation for new international students. Their webpage (<https://www.uvm.edu/oie/iss>) provides lots of helpful information and suggestions for ways to get involved. There are lots of activities

to take part in such as hiking, skiing, bowling, pumpkin carving, trips to Montreal (Quebec, Canada), Boston (Massachusetts), and New York City (New York), and much, much more!

Montreal is the closest big city, about a two hours' drive north of Burlington. Make sure you have a visa! Single entry or multiple entry visas can be obtained with the support of the OIE. It can take up to 10 days to receive the visa, so plan ahead.

### **III. FINANCIAL SUPPORT**

#### ***Financial Assistance***

Financial support of graduate students usually comes in one of two forms:

1. Departmental Graduate Teaching Assistantship (GTAs) and Graduate Research Assistantships (GRAs)

GTAs: Currently the student is provided with 23 credit hours of tuition remission per year (up to 9 credits per semester and 5 credits in summer) and a stipend, which is adjusted annually. In addition, if you elect the UVM health insurance, 100% of the individual premium will be covered. In return, the student will provide 20 hours of work/week to Department teaching. During the semester the teaching support will be the first priority for allocation of time. Outside of the semesters, research activity, as designated by the principal investigator of the Experiment Station project to which the student is allocated, will be the first priority.

GRAs: The tuition remission, stipend, and other benefits are the same as GTAs, but the students are expected to provide 20 hours of work/week to a research project of the Vermont Agricultural Experiment Station.

2. Grant-funded GRAs

These are funded directly out of a research grant, without support from the University General Fund or Agricultural Experiment Station. Tuition remission may or may not be provided. The level of support is adjusted to attempt to be equivalent to the GTA, once tuition and fees are paid. However, in certain circumstances, lesser amounts are offered. GRAs are expected to commit their 20-hour time primarily to the principal investigator of the grant.

#### ***Allocation and minimum expectations***

The allocation of GTAs and GRAs to courses is the responsibility of the Chair of the Department of Animal and Veterinary Sciences. The Chair will normally consult the faculty over this allocation.

The expectation is that a GTA will assist with the laboratory section of a course each semester. Course instructors will determine if GTAs will be required to attend or prepare for lectures. A more detailed list of graduate teaching responsibilities is included under Section E below.

The course instructor will provide graduate students with a written outline of the requirements and the instructor's expectations.

#### ***GTA Performance Evaluation***

It is the expectation of the Chair that an evaluation is done of all courses every semester they are taught. This should include an opportunity to evaluate the GTA's contribution. In addition, a written evaluation of the graduate student by the instructor at the end of each semester with constructive suggestions for further training or program development is required. The Department Graduate Committee evaluates the GTA performance annually and determine the continuation and allocations of the GTAs.

### ***Other Sources of Funding***

1. Fellowship Grants: Students are encouraged to compete for national graduate fellowships, such as those made available by the USDA, National Science Foundation, and the Smithsonian Institution. Information on these fellowships is available from the office of the Graduate College and the Office of Sponsored Programs.
2. Mini Travel Grants: The Graduate Student Senate has a Mini Travel Grant support program that encourages and supports travel for graduate students to present their research at professional meetings. Guidelines and application forms are available through the Graduate Student Senate. Graduate Students must present at the University of Vermont Student Research Conference in the spring to be eligible for a Mini Travel Grant. This makes first year graduate students likely not qualified for funding. In addition, Mini Travel Grants are also available from the Department and Dean's office.

Sponsored Project Administration (SPA) in 217 Waterman Building is an important and helpful resource for finding additional sources of funding. The staff publishes lists of grants available to students and will do computer searches of special funding sources for you. Graduate students are urged to apply for grant funds such as Graduate College Mini-Grants, NSF Doctoral Dissertation grants, Sigma XI research awards, in addition to other special funds that are announced throughout the year.

### ***Vacation Policy***

Graduate students in the Department of Animal and Veterinary Sciences ordinarily have a twelve-month appointment. They are entitled to the stated University of Vermont Administrative holidays plus ten days of vacation per year. Additional time may be approved by the mentor and/or the student's thesis/dissertation committee. Unused vacation days may not be carried over into subsequent years, nor do graduate students accrue compensatory time off. Students are expected to discuss their vacation plans with their mentor in advance.

### ***Grievance Procedures***

If a graduate student in the Department of Animal and Veterinary Sciences has a grievance, he/she should first meet with his/her mentor to discuss the issue(s). If the student has not yet chosen a mentor, he/she should meet with the Chair of the Graduate committee. If the issue is not resolved after this meeting, the student may meet with the Animal and Veterinary Sciences Department Chairperson, if this person has not been previously involved. If the student is not satisfied with the resolution of the issue(s), he/she may contact the Dean of the Graduate College, whose decision shall be final.

## **IV. TEACHING ASSISTANT RESPONSIBILITIES**

Although there will be some variations in responsibilities depending on the course, there are some basic TA expectations that could include the following:

- Grading exams, projects and homework assignments (may require coordinating with Student Accessibility Services (SAS) for students who require accommodations)
- Scheduling and administering make-up quizzes
- Photocopying class materials
- Preparing, setting-up, and teaching labs; preparing lab quizzes
- Scheduling appointments with students
- Leading study group/review sessions
- Possibly teaching class during the semester
- Organizing course evaluations at the end of the semester
- Some courses may also require organizing, attending and possibly driving a vehicle on class trips. (Go to <https://www.uvm.edu/riskmanagement/driver-training-and-certification> for details about driving certification.)

#### **IV. DEGREE REQUIREMENTS**

The Department of Animal and Veterinary Sciences offers programs leading to the degrees of Doctor of Philosophy and Master of Science. Students who enroll in the graduate programs initially work closely with their mentor, and later with their study committee, to determine the course work required to meet the Graduate College requirements and to support their research program. Within one semester (MS students) or one year (PhD students) of matriculation, students are expected to identify a minimum of three (for MS programs) or four faculty (for PhD program), all members of the University of Vermont Graduate Faculty, to serve on their Study Committee/Dissertation Defense Examination Committee (DDEC). At least two graduate faculty members must be from inside the department or program. One member of the committee must be from outside the Department of Animal & Veterinary Sciences and serve as the chairperson for the committee. The list of committee members is sent to the Graduate College prior to the first committee meeting. The committee should meet at least annually thereafter. Completion of requirements must have approval by your studies committee.

#### ***Teaching requirement***

Graduate students are expected to acquire teaching experience by serving as a teaching assistant for undergraduate ASCI courses or by mentoring “junior” undergraduate or graduate students in their laboratory. For each course a graduate student functions as a teaching assistant, the teaching faculty and students provide evaluation of the graduate student’s performance at the end of course. Graduate students document their teaching and mentoring activities in annual report for evaluation by their mentors and graduate committee.

#### ***Required Courses***

Because of the diversity of faculty and student research interests, we have a policy of minimizing required courses. However, all graduate students who are supported by a GTA or GRA are required to complete two semesters of Graduate Research Seminar and Journal Club. While graduate students only

need to enroll in Graduate Research Seminar twice, they are expected to attend all seminars and present a seminar once a year.

### ***Minimal Expectations of All Graduate Students as Outlined by the Department Graduate Committee***

All graduate students will read and follow the policies and procedures presented in the Graduate Catalogue. The department expects full time graduate students with an assistantship to complete master's degree programs within two years. The department expects full time graduate students with an assistantship to complete doctoral degree programs within three years after the master's degree or within five years if no master's degree is conferred. Students may stay on assistantship longer, at the discretion of the Graduate Committee.

### ***Accelerated Master of Science***

Accelerated Master's degree (AMP) programs are designed to allow current UVM undergraduate students to earn both bachelor's and master's degrees within a total of five years. Students are expected to be full-time until completion of the Master's degree.

AMP students may use up to six (6) credits of graduate-level courses taken at UVM toward both the Bachelor's and Master's degrees.

Three (3) credits of graduate-level coursework taken prior to earning the Bachelor's, beyond the six double counted credits, may be used for the Master's, provided the credits do not also count toward the Bachelor's degree.

Graduate-level courses taken for the AMP prior to earning the Bachelor's must be graded and cannot be independent study or research; thesis research credits; internships; or practicums.

Under no circumstance will more than nine (9) credits of graduate-level coursework taken prior to earning the Bachelor's be applied towards the graduate degree.

Students must apply for and be accepted to the AMP through the standard Graduate College application process. Normally, the application and admission process must be finalized prior to the beginning of the senior year. In all cases, students must be admitted by the Graduate College before taking any courses that will apply to the Master's degree, i.e., all courses used for the Master's degree must be taken after formal admission to the AMP.

For admission to the AMP program in Animal Biosciences, the student must have an acceptable undergraduate major in animal science, chemistry, biology, or a related field, and satisfactory scores on the general (aptitude) Graduate Record Examination.

We offer two options for completing the AMP in Animal Science:

#### **Option A (Thesis)**

- Thirty (30) credits of study with a minimum of fifteen (15) credits in courses in animal science or related fields and a minimum of nine credits of thesis research. Students are required to attend

and participate in ASCI 301 and ASCI 302 twice during their programs. Students must also prepare a research proposal.

- Students are expected to meet with their graduate studies committee during their second and third semester, and during the final semester for their thesis defense. Students are also expected to have one publication ready to submit or already submitted to an appropriate journal at the time of their defense. Students are also required to participate in at least one semester of teaching.

### **Option B (Non-thesis)**

- Thirty (30) credits of study with twenty-four (24) credits in courses in animal science or related fields, and a minimum of six (6) credits of literature research. Students are required to attend and participate in ASCI 301 and ASCI 302 every semester the courses are offered.

### ***Master of Science***

#### **Minimum Requirements**

- Students must complete a total of thirty (30) credits (21 credits must be taken at UVM). A minimum of fifteen (15) graded credits must come from course-related work as determined by the student's studies committee, and a between nine (9; minimum) and fifteen (15; maximum) credits must come from thesis research. Typically, students will take 15-21 credits of course-related work and 9-15 credits of thesis research.
- For M.S. students, the studies committee is nominated by the advisor in consultation with the student and consists of at least three (3) members (one of whom comes from outside the advisor's department). The member who is not from the Department of Animal & Veterinary Sciences is the chair of the committee.
- Students must complete a written and/or oral comprehensive examination administered by their studies committee to be accepted for M.S. candidacy. Completion of the comprehensive examinations must take place at least two months prior to the thesis defense.
- Completion of an M.S. degree requires successful completion of a thesis, registration in Grad 397 during their final semester, a public seminar, and a private defense with their studies committee.

The Department Graduate Committee and student's study committee reviews the progress of the graduate student on an annual basis, to determine whether adequate advancement is being made. All students in the program are required to show satisfactory progress, which is defined as:

- Finishing the minimal course work in three years;
- Completion of the comprehensive exam within the prescribed time limits;
- Participation in ASCI 301, Journal Club, or ASCI 302, Graduate Seminar, at least two semesters; and
- Attaining at least a 3.0 GPA each semester as well as maintaining at least a 3.0 or greater cumulative GPA.

***Non-Thesis M.S. Degree***

A Non-Thesis MS degree requires 30 credit hours of study with 24 credit hours in courses in Animal Sciences or related fields and 6 credit hours of literature research.

**Requirements of Literature Research Project for Non-Thesis M.S.**

Students undertaking a non-thesis MS, with the help of their advisor, develop a proposal for the literature review they plan to undertake and submit this to the Department Graduate Committee for approval during their first year of study. The Committee will approve, approve with modification or disapprove the proposal. Once approved, the students can enroll for 6 credits of literature review and commence the project.

The format, style and conventions for the literature review are those currently defined by the Journal of Animal Science. It should be of a quality, thoroughness, and depth consistent with a publishable review article. It should be approximately 10,000 words (or more) in length, excluding a comprehensive bibliography. It is an absolute requirement that it be a critical review not a historical account. The review shall compare and contrast published work, identify areas of disagreement in the literature and objectively discuss these disagreements. From reading the review, it should be clear that the student has developed a comprehensive and profound understanding of the subject area. The completed literature review, after approval by the advisor, will be supplied to members of the graduate committee and will be the basis for an oral presentation to the Department, comparable with a thesis defense. Following the presentation, the students will be interviewed by the graduate committee, who will make constructive suggestions and corrections. They will then determine whether the student has gained a satisfactory grade (S) or unsatisfactory grade (U) for the literature review course. Where possible the student should be encouraged to submit the review for publication in a professional journal. The student must follow the general rules for format check and defense of a thesis (in this case lit review) above in section IV, Accelerated Masters Program.

It is the joint responsibility of the student and the advisor to see that all requirements are completed fully and on time so that no oversight delays a student's graduation. However, final responsibility falls on the student to see that all requirements are met.

***Doctor of Philosophy*****Minimum Requirements**

- Students must complete a total of seventy-five (75) credits (51 credits must be completed in residence at UVM, and a minimum of fifteen (15) credits must not count towards a master's degree). A minimum of thirty (30) credits must come from graded course-related work (a minimum 15 credits must be taken at UVM). The courses taken are determined by the student's studies committee. A minimum of twenty (20) credits must come from dissertation research.
- For Ph.D. students, the Studies Committee usually consists of the five (5) members (minimum of four (4)). The students and their advisor recommend at least one (1) faculty member from outside who is the chair, and two (2) members from within the advisor's department, and forwards it to the Dean of the Graduate College. The date, time, and place for the thesis defense must be submitted to the Dean of the Graduate College at least three (3) weeks in advance of defense.

- Students must complete a written and oral comprehensive examination administered by their studies committee to be accepted for Ph.D. candidacy. Completion of the comprehensive examinations must take place at least six months prior to the scheduled thesis defense.
- Completion of an Ph.D. degree requires successful completion of a dissertation, registration in Grad 497 during their final semester, a public seminar, and a private defense with their dissertation defense examination committee (DDEC), which may or may not be the same as their studies committee.

The faculty advisor reviews the progress of the graduate student on an annual basis, to determine whether adequate advancement is being made. All students in the program are required to show satisfactory progress, which is defined as:

- Finishing the minimum course work in three years;
- Completion of the comprehensive exam within the prescribed time limits;
- Participation in ASCI 301, Journal Club, or ASCI 302, Graduate Seminar, at least two semesters; and
- Attaining at least a 3.0 GPA each semester as well as maintaining at least a 3.0 or greater cumulative GPA.

### ***Requirements for both M.S. and Ph.D. degrees***

#### ***Comprehensive examinations***

Both Ph.D. and M.S. students must take a comprehensive examination. The student's studies committee decides the format of this exam (i.e., oral, written, take-home, combination of both for the M.S.).

Doctoral students are required to do, at a minimum, a written exam. Exams are designed to test if the student has satisfactorily learned what they need to know in their area of interest, animal science, or almost anything the studies committee deems important for completion of your degree. Students are encouraged to schedule meetings with the members of their studies committee for further information.

Only one re-examination is permitted. Success in the written comprehensive is prerequisite to standing for oral Dissertation Defense Exam. All examinations are taken on the University of Vermont campus.

#### ***Thesis Committee and Defense***

For M.S. and Ph.D. programs requiring a thesis, which is the formal written report of the research done for the degree, the style and format of a thesis may either be traditional style or journal style with a comprehensive literature review. The choice of thesis style is determined by the student and their studies committee. The Style Manual for Biological Journals, third edition (1972), published by the conference of Biological Editors of the American Institute of Biological Sciences, may be a helpful source. The Graduate Faculty has rules, which specify the format your thesis must be written in. You may obtain these rules, "Guidelines for Thesis Writing," in the Graduate Dean's Office in Waterman (See [https://www.uvm.edu/graduate/resources for more information](https://www.uvm.edu/graduate/resources%20for%20more%20information)). In addition, there are older copies of graduate theses in the Department library that may help in choosing the style appropriate for your thesis.

At least three weeks prior to the thesis defense, a copy of the thesis, in final form, must be submitted to the Graduate College for format check (See [https://www.uvm.edu/sites/default/files/Electronic\\_Thesis\\_and\\_Dissertation\\_Guidelines.pdf](https://www.uvm.edu/sites/default/files/Electronic_Thesis_and_Dissertation_Guidelines.pdf))

At least two weeks in advance, an announcement of the defense, which includes an abstract, should be sent to all Department faculty and to other faculty who are appropriate. The Department Office will prepare and distribute the announcement from materials provided by the student. Reserve a room for your defense, well in advance, on the department Sharepoint site.

The oral defense of the thesis should be passed at least three weeks before Commencement for conferral of the degree in May. The Graduate College posts deadline dates every year.

After a successful dissertation defense, candidates must electronically upload the corrected dissertation to <http://www.etsadmin.com/uvm> for approval by the Graduate College within the time period specified by the dissertation defense examination committee, and/or the Graduate College. Students should see <http://catalogue.uvm.edu/graduate/degree/requirements/requirementsforthedoctorofphilosophydegree/> for the most current guidelines.

## **VI. Responsible Conduct of Research**

### **Research Oversight and Ethical Conduct**

Those engaged in research involving human subjects or vertebrate animals need to complete specific training offered through CITI. <https://www.uvm.edu/rpo>

### **Environmental Health and Safety**

Becoming part of the safety culture of your laboratory and the university is required of graduate students. UVM Risk Management and Safety has extensive training and resources available to support safe laboratory operations. As of January 1, 2020, all new laboratory employees are required to complete the [Orientation/Training Checklist for New Laboratory Employees](#).

In addition, your laboratory orientation will include applicable trainings in the following:

- Fire Safety (online information plus online course required; optional hands on fire extinguisher training) <https://www.uvm.edu/riskmanagement/fire-and-life-safety>
- Evacuation Procedures (online information and online course) <https://www.uvm.edu/riskmanagement/evacuation-procedures>
- Keeping Your Lab Safe (classroom within 3 months of starting work and annual refresher online training)
- Emergency Response for Laboratory Workers (classroom within 3 months of starting work)
- Laboratory Safety Roles and Responsibilities (online before working in lab)
- Chemical Safety in the Laboratory (online before working in lab)
- Laboratory Chemical Waste Disposal (online before working in lab)
- Laboratory Ventilation and Chemical Fume Hoods (online before working in lab)

- Biosafety and Bloodborne Pathogen Training (online through CITI)  
<https://www.uvm.edu/riskmanagement/citi-online-training>
- Other training necessary for using shared equipment or specific hazards in your laboratory including liquid nitrogen, radioactive materials, respiratory protection.

More information about and how to access these trainings can be found here:

<https://www.uvm.edu/riskmanagement/train-and-inform-lab-personnel>

If required, the process for driver certification (US citizens only) begins here:

<https://www.uvm.edu/riskmanagement/driver-training-and-certification>

Other forms, policies and procedures related to risk management and safety can be found here:

<https://www.uvm.edu/riskmanagement/forms-policies-and-procedures>