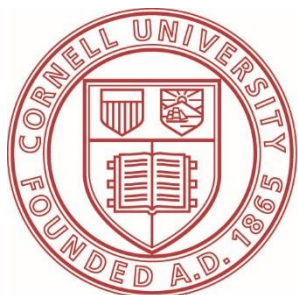


# VETERINARY MEDICAL SCIENCES

*Student Policy Manual*

*July 2022*



Cornell University

# Veterinary Medical Sciences

## *Program Overview*

The Master of Professional Studies (MPS) in Veterinary Medical Sciences program is designed for individuals who seek to enhance their careers with specialized professional training in Veterinary Parasitology. Professionals and workers in industry, government or non-governmental organizations are encouraged to take advantage of the flexible nature of the program. The MPS degree can be completed in one year and provides rigorous training in all aspects of parasitology at one of the nation's top Colleges of Veterinary Medicine. The MPS in Veterinary Medical Sciences at Cornell is unique in the country, and provides the opportunity for registered students to:

- Take in-depth and comprehensive courses covering a range of highly relevant topics.
- Get hands-on lab experiences, with options to pursue experiences at labs around the country.
- Develop, prepare, and present a Capstone Project to MPS Faculty.

Courses and labs are offered in a hybrid manner (mix of online and residential formats) that is friendly to the working professional. Graduates of the MPS program will be competitive for positions in industry, federal and state government agencies, and academia.

**Full-time study:** For students pursuing full-time study, students must successfully complete thirty-six (36) credit hours of coursework in three (3) semesters – fall, spring, and summer. This includes sixteen (16) credit hours of core courses, five (5) credit hours of laboratories and fifteen (15) elective credit hours.

**Part-time study:** For students pursuing part-time study, the program requirements are the same as described above and must be completed within four (4) years.

**Residential campus requirements:** Regardless of the pace in which a student decides to study, all enrolled students must attend on campus labs and in-residency days.

## *Program Learning Objectives*

Students in the MPS program will gain a broad understanding of parasitology, including basic knowledge of the biology and taxonomy of parasites, as well as clinical aspects of infections such as disease processes in the animal, diagnostics, treatment, and control methods.

In addition, an important component of the program is developing the students' understanding of the role of government agencies in animal health and the interactions required with such agencies with respect to parasite prevention, treatment, and control. With this base of knowledge, it is expected that upon completion of the program, students will be able to:

- Demonstrate an understanding of scientific principles related to parasitic organisms and diseases of animals.
- Utilize acquired proficiencies for the investigation of familiar and unfamiliar parasitic infections in differing animal husbandry conditions.
- Apply scientific knowledge in acquiring new abilities and in making decisions about changes in clinical protocols and procedures product development and testing, and appropriate product use.
- Describe the differences between clinical trials and observational studies including advantages and disadvantages of each.
- Assess the value of several secondary measures which can be used to monitor progression of parasite-induced disease (e.g. radiographs for heartworm induced disease, anemia for haemonchosis, or plasma pepsinogen levels for ostertagiasis).
- Perform and interpret results of diagnostic procedures.
- Formulate parasitic differential lists based on case history and presentation.
- Interpret test results in a way that shows understanding of prior probabilities, test accuracy and predictive values.
- Plan and communicate preventive medicine programs (e.g. vaccination) addressing host immunity, and environmental or management risk factors.
- Read scientific publications related to parasitic infections and evaluate validity of conclusions.
- Select appropriate diagnostic tests to monitor product efficacy.
- Evaluate management factors for controlling the presence, maintenance, and distribution of ectoparasites and nuisance arthropods in livestock.
- Understand principles of infectious disease transmission including routes of transmission, herd immunity, and pathogen characteristics that influence propagation and survival.
- Describe the requirements for product development and government approval and explain the role of government agencies in the approval process.
- Describe the requirements for adequate data collection and recording under quality assurance standards necessary for report submission to government agencies.
- Identify and explain the role of key federal agencies with respect to animal health that may influence the regulatory, research, and other opportunities for professionals operating in the animal health space.
- Formulate project reports that are compliant with quality assurance standards.
- Devise and generate protocols to present for new product development or approval.

### *Creating a Culture of Excellence*

The MPS Program reviews applicants holistically for:

- Academic achievements
- Maturity and professionalism
- Passion for veterinary parasitology
- Desire to improve the lives of animals
- Creativity
- Leadership, teamwork, and inclusivity
- Professional communication skills

- Thoughtfulness
- Diversity of background and experience

We believe that by admitting a diverse cohort of professionals with many different ideas, values, and experiences we generate a group of contributors who will have long-standing positive impacts in many sectors of the animal industry. Furthermore, we work to admit cohorts that will support and strengthen one another as they learn and grow during their time with the program and beyond. Our culture of inclusion, along with the admittance of a small cohort into each class, has been a hallmark of the program since its founding.

Time spent in a graduate professional degree program is meant to be a time of mastery of skills specific to the industry in which one wishes to pursue a career. It is also an opportunity to learn more about oneself, and to grow as a professional and lifelong learner. As such the MPS Program recognizes the following characteristics as critical for individual and group success:

- **Personal Integrity:** Students of the program, as future leaders in the veterinary industry, will conduct themselves with the highest level of moral and ethical standards. They will value respect, honesty, responsibility, and personal accountability.
- **Leadership:** As future contributors, MPS students will value and cultivate others' talents, respect -and be open to- alternate approaches to problem solving. They will recognize the value of collaboration, celebrate different working styles, and champion one another's successes. They will also value that everyone is here to make the most of the opportunities for learning and personal growth and will work to support one another in these endeavors.
- **Passion for Growth:** The MPS Program is, and always has been, in constant evolution. The program seeks to be responsive to feedback around opportunities for growth and development. As such, MPS students will have a passion for individual growth and development, as well as a dedication to program growth and development. Students will be open to feedback (both providing and receiving) and to change.

### ***General Academic Expectations***

Students are expected to be engaged with courses and school-related activities throughout each semester. While the vast majority of MPS academic activities will be self-paced, there is a requirement to attend in-person activities every semester in addition to lab. These in-residency learning days are typically scheduled in conjunction with the laboratories to minimize additional travel.

As a professional graduate program, it is expected that students will:

1. Attend classes on a regular basis, completing at least one assignment or quiz per week per enrolled credit hour as instructed in Canvas.
2. Be punctual.

3. Be prepared for class.
4. Participate positively in all courses.
5. Attend all required Program activities.
6. Not use cell phones in class for any purpose unless requested to do so by the instructor.
7. Some faculty may choose to implement a “no laptop” policy. Use of laptop computers in class and workshops is for the sole purpose of notetaking or completing in-class assignments (not for email or internet browsing).
8. Support peers, faculty, and staff in a positive, respectful, and professional manner.
9. Respect and utilize office hours when seeking faculty and director input, advice and problem solving.

It is the student’s responsibility to contact the course instructor, in advance, to seek approval for an anticipated class absence, due date extension, or for a late arrival/early departure. This includes absences or late arrivals/early departures associated with any MPS Program scheduled class, lab, or in-residency day requirement.

**Required Coursework for the Program:**

All courses taken to fulfill requirements should be taken for a letter grade unless S/U is the only option. Students may enroll in VETMI courses only and **are not** permitted to take any coursework outside of this program.

**Core Courses (first year)**

- VETMI 7416 Introductory Pharmacology (fall)
- VETMI 7418 Parasitologic Diagnostic Methods Video Lab (fall)
- VETMI 7431 Antiparasitic Vaccines (fall)
- VETMI 7435 Federal Government’s Role in Animal Health (fall)
- VETMI 7440 Parasites of Domestic Animals (fall)
- VETMI 7449 Scientific Writing and Critical Review of Literature (fall)
  
- VETMI 7417 Organisms as Lab Models (spring)
- VETMI 7428 Early Drug Discovery (spring)
- VETMI 7429 Antiparasitic Drugs (spring)
- VETMI 7433 Statistics for Efficacy Studies (spring)
- VETMI 7434 Regulatory Approval (spring)
  
- VETMI 7436 Capstone Project I (will be offered in all semesters)
- VETMI 7446 Capstone Project II (Pass/Fail – will be offered in all semesters)

**Laboratories (Select 5)**

- VETMI 7420 Parasite Identification Laboratory (Required/fall)
- VETMI 7422 Non-Morphologic Parasite Identification Laboratory (fall)
  
- VETMI 7423 Cases with Specimens Laboratory – Large Animal (spring)
- VETMI 7424 Cases with Specimens Laboratory – Small Animal (spring)

VETMI 7421 The Parasitologic Necropsy Lab (summer)  
VETMI 7443 Advanced Parasite Identification Laboratory (summer)

### **Electives**

VETMI 7401 Apicomplexa (fall/spring/summer)  
VETMI 7402 Excavata (fall/spring/summer)  
VETMI 7403 Mites (spring/summer)  
VETMI 7404 Ticks (fall/spring/summer)  
VETMI 7405 Fleas and Lice (fall/spring/summer)  
VETMI 7406 Biting Flies and Myiasis (spring/summer)  
VETMI 7407 Internal Parasites of Cats (spring/summer)  
VETMI 7408 Internal Parasites of Dogs (fall/spring/summer)  
VETMI 7409 Internal Parasites of Cattle (spring/summer)  
VETMI 7410 Internal Parasites of Sheep (spring)  
VETMI 7439 Parasites of People (spring/summer)  
VETMI 7425 Imaging of Parasites In Vivo (spring/summer)  
VETMI 7430 Drug Discovery – The Big 12 (fall/spring/summer)  
VETMI 7432 Alternate Parasite Control Approaches in Sheep and Goats (summer)  
VETMI 7441 Wildlife Parasitology (spring/summer)  
VETMI 7442 Parasite Eradication Programs (fall/spring/summer)

### **Degree Requirements and Academic Progress:**

To earn the Master of Professional Studies in Veterinary Medical Sciences degree, students must fulfill the following requirements:

1. Degree Requirements for the MPS degree:
  - a. Full Time / Part Time: All MPS students are required to complete program requirements within 4 years of becoming a matriculated student.
  - b. Satisfactory completion of thirty-six (36) credit hours of coursework fulfilling requirements for the MPS degree.
  - c. Satisfactory completion of sixteen (16) credits of Core coursework.
  - d. Satisfactory completion of five (5) laboratories (1 credit each).
  - e. Actively participate in courses throughout the semester, completing coursework in a timely fashion.
  - f. Present a Capstone Project on campus to field faculty.

### **Evaluation of Academic Progress:**

Evaluation of academic progress is based on the following criteria:

1. Satisfactory progress in meeting MPS degree requirements - required and elective courses.
2. An overall cumulative GPA of 3.0 or greater.
3. A grade of B or higher in VETMI 7436, Capstone I. If a student does not achieve this grade, they will be allowed to repeat the course one additional time. If they are not

able to achieve a B or higher the second time, they take Capstone I, they will be terminated from the program. It will be at the discretion of the MPS Director if the Capstone topic can be reused.

4. Withdrawing from a class (taking a “W”) or taking an incomplete (taking an “INC”) is allowed only under highly extenuating circumstances and requires pre-approval from the MPS Director. For purposes of computing MPS overall GPAs and evaluating academic progress, a grade of “W” in a required course is counted as an “F”.
5. Students may only repeat a course once.
6. Any student with a cumulative GPA that does not meet the required 3.0 threshold will not be eligible for graduation.

### **Failure to Maintain Satisfactory Progress:**

In the event a student is deemed to be making less than satisfactory academic progress, the student will be notified in writing and required to meet with the Program Director to discuss any relevant circumstances and courses of action. A notice of Academic Probation will be placed in the student’s file. A student may be required to leave the program for lack of satisfactory academic progress and/or inappropriate conduct.

### ***Academic Leave:***

Students who have been placed on academic leave and wish to return will need to contact the Program Director to discuss reentry. In most instances certain restrictions/conditions will need to be met to return as a student in the program. Students must petition within 1 year of an academic leave if they wish to return to the program.

### ***Voluntary Leaves and Withdrawals:***

Please contact either the Program Director or Program Coordinator if you are considering a leave/withdrawal from the program. More information may be found in the University Courses of Study: <https://courses.cornell.edu/content.php?catoid=41&navoid=11704>

Additionally, students are strongly encouraged to reach out to the Financial Aid office for financial counseling, especially if leaving mid semester. For mid-semester leaves/withdrawals more information regarding tuition refunds may be found on the Bursar’s page <https://www.dfa.cornell.edu/bursar/students-parents/leaving>.

### **Student Advising and Progress to Degree:**

Advisors and Capstone Mentor:

1. The MPS coordinator acts as an advisor and will provide ongoing advice and support during the program. The Program Director and Assistant Directors act as faculty advisors, reviewing progress to degree forms and academic plans every term.
2. Students will work with the advisors to select and request a Capstone Mentor with expertise related to the Capstone topic. Students may change their MPS Capstone mentor after consulting with the Program Director. Any change to the Capstone

Mentor requires the completion of a “Capstone Project Form” which is available for download on the Canvas site for VETMI 7436. All signatures are required—including your proposed new mentor’s. Completed forms are to be returned to the MPS Coordinator.

3. Note that while any faculty in the graduate field of Comparative Biomedical Sciences (CBS) may serve as a capstone mentor, faculty who currently teach or have taught courses in the MPS curriculum may have greater knowledge of curricula sequence and requirements than faculty who have not recently taught MPS courses. Therefore, students should be sure that their chosen mentor has adequate knowledge of, and is comfortable with, advising regarding the program requirements. A student may request a mentor that is not currently within the field, such as a subject matter expert at the USDA, CDC, etc., but this requires permission of the MPS Program Director.

### **Progress to Degree Form (PTD):**

To monitor student progress, each student must complete a “Progress to Degree Form” at the start of each semester beginning with the first semester in the program. Forms are due two (2) weeks after the start of each semester.

The completed form is to include cumulative information on all courses in which the student is currently enrolled or has already completed.

The PTD form is to be reviewed by the MPS Program Coordinator during the first two weeks of each semester to ensure that the student’s course of study meets the goals of the program and the student and satisfies program criteria for graduation at the pace they have selected (full time or part time).

### **Petition to Waive a Core Course:**

1. Students may petition to waive a core course based on previous academic course work in which the student demonstrated proven mastery of the Program competencies. The courses that a student may petition to waive are VETMI 7416 Introductory Pharmacology and VETMI 7440 Parasites of Domestic Animals.
2. Students will need to contact the Program Director (email) and petition to waive.
3. Waivers are granted only for coursework taken prior to matriculating into the MPS program.
4. Coursework will only be considered from a Regionally Accredited domestic university, or equivalent for international institutions.
5. To qualify for a waiver for a core course, a student must have taken one or more courses, prior to matriculating into the MPS program, which both covered core course materials and where the student can document (official transcript) that they received a grade of B or better.
6. Please note that if a waiver petition is approved, the result is that the specific petitioned course is “waived,” freeing those credits up for another advanced course in lieu of the waved course. A total of thirty-six (36) credits is still required for graduation. Only credits earned at Cornell or in preapproved off-site parasitology programs are accepted.



### Grading for MPS Courses:

All required core and elective courses must be taken for letter grades unless otherwise specified.

### Capstone Project I and II:

1. **VETMI7436, Capstone Project I:** In this course students will develop a topic for their Capstone Project in the form of a literature review dealing directly with a subject in veterinary parasitology and will choose a faculty mentor. Students will identify their academic sources and will be expected to submit an annotated bibliography for review. This course will assess a student's ability to read, evaluate and integrate the research literature into the design of a veterinary parasitology investigation. Graded.
2. **VETMI7446, Capstone Project II:** Critical evaluation and integration of the research and other primary literature is a vital tool of the modern parasitologist. This course is an extension of VETMI Capstone Project I, and will provide students with the opportunity to read, understand, evaluate, and integrate the research literature in veterinary parasitology related to their previously selected topic. This project is an in depth and extensive review of the literature, culminating in the preparation of a written synthesis of the topic in the form of a final paper. Additionally, an hour-long lecture will be prepared and presented by the student to field faculty at the end of the course. This course is intended for students enrolled in their final semester of the program. Pass/Fail.

### Course Load:

1. Full-time students must be enrolled in twelve (12) credits for fall, spring, and summer semesters.
2. Part-time students must enroll in a minimum of one (1) credit for each semester.
3. Requests to vary from the program course load must be reviewed by the Program Director and/or Program Coordinator.

|                    | Full Time Students<br>(3 semesters – Fall, Spring, Summer) | Part Time Students                               |
|--------------------|--|--|
| Laboratory         | In person, 5: 1-2 each semester                            | In person, 5: not to exceed 4 years              |
|                    | Each Lab is 5-6 days in length at Cornell Campus           | Each Lab is 5-6 days in length at Cornell Campus |
| Final Presentation | In person, 1 day at end of program                         | In person 1 day at end of program                |

| Courses | Remote- online instruction through Canvas | Remote- online instruction through Canvas |
|---------|---|---|
| Credits | 36 (12 credits/ semester)                 | 36  |

**Funding:**

**MPS merit-based scholarships:** Several merit-based scholarships will be awarded to qualified applicants on an on-going competitive basis. An additional essay must be submitted at the time of application to the program or two weeks prior to the start of a new term.

To be eligible a student must maintain good academic standing with a cumulative 3.00 GPA.

**Academic Integrity:**

Absolute integrity is expected of every Cornell student in all academic undertakings. Integrity entails a firm adherence to a set of values; and the values most essential to an academic community are grounded in the concept of honesty with respect to the intellectual efforts of oneself and others.

Academic integrity is expected not only in formal coursework situations, but in all University relationships and interactions connected to the educational process, including the use of university resources. A Cornell student's submission of work for academic credit indicates that the work is the student's own. All outside assistance should be acknowledged, and the student's academic position truthfully reported. In addition, Cornell students have a right to expect academic integrity from each of their peers.

Violations of the Cornell Code of Academic Integrity are subject to disciplinary action, which may include expulsion from the University.

For further information regarding the Cornell Code of Academic Integrity see:

<http://cuinfo.cornell.edu/aic.cfm>

All students are required to read the Cornell Code of Academic Integrity and sign a form indicating that they have read this document and intend to abide by it.

**Accessibility and Accommodations:**

It is our intention to provide reasonable accommodations for students with qualifying disabilities. More information may be found in the Canvas Learning Management System: [canvas.cornell.edu](https://canvas.cornell.edu)

Cornell University has an enduring commitment to support equality of education and employment opportunity by affirming the value of diversity and by promoting an environment free from discrimination.

Cornell's College of Veterinary Medicine is committed to Cornell University's policy affirming equality of opportunity: No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, marital status, citizenship, sex, sexual orientation, gender identity or expression, age, disability, or protected veteran status.

## ***Graduate School Grievance Procedure***

The "Grievance Procedure for Graduate Students Relating to Graduate Education and Support" outlines general provisions and procedural steps for handling grievances involving graduate students and faculty members. Most complaints are likely to concern alleged violations of the terms of written agreements and guidelines. Some may address more subtle matters involving unwritten expectations about issues such as remuneration and joint publication. All conflict should be dealt with in a patient and sensitive manner that respects the dignity of the participants. [From: *Code of Legislation of the Graduate Faculty* (VII. C)] at any time during the grievance process, the Ombudsman office is available as a safe place for informal consultation.

The following procedure was developed and written by the General Committee of the Graduate School in May 1992 and amended in May 1997 and last updated March 2013. Grievance Procedure for Graduate Students Relating to Graduate Education and Support This procedure is intended to provide a mechanism through which grievances can be fully investigated and decisions rendered. It covers grievances that involve individual graduate students and faculty on issues relating to graduate education and support. It is expected that most grievances will take the form of alleged violations of terms of written agreements and guidelines. However, these procedures should continue to recognize as "grievances" a broader range of more subtle and sensitive matters having to do with such issues as remuneration, joint publication, etc.

The University-wide Policy 6.4, Prohibited Discrimination, Protected Status (including Sexual) Harassment, and Bias Activity Procedures adopted July 8, 1996, supersedes all college and university procedures that purport to handle discrimination, including sexual harassment complaints. Complaints alleging sexual harassment by a staff or faculty member or a student employee should be filed with the Office of Workforce Policy and Labor Relations. Complaints alleging student vs. student sexual harassment should be referred to the Judicial Administrator.

### **Procedural Steps**

#### **Step 1. Speak Directly to the Source of the Grievance**

Whenever possible, the aggrieved shall first speak directly to the person(s) who is the alleged cause of the complaint, or who bears responsibility for the cause.

#### **Step 2. Contact the Director of Graduate Studies (DGS), Dr. Deborah Fowell**

When a satisfactory resolution is not reached at Step 1, the aggrieved may file a grievance by sending a letter describing the issue to the DGS in her/his field. This letter should be dated and filed as soon as possible but not more than 4 calendar

months after the event giving rise to the grievance. (In a case in which the complaint is about a recurring pattern of behavior, this time limit shall refer to the most recent instance of the behavior.) A copy of this letter should be sent to the Dean of the Graduate School. If the letter describes the grievance as involving issues of prohibited discrimination, protected status (including sexual) harassment and bias activity as described by University Policy 6.4, the Graduate School shall send a copy to the Office of Workforce Policy and Labor Relations, which shall then investigate that aspect of the charge. If the DGS is the "source" of the grievance, Step 2 should be skipped, and the grievance letter sent directly to the Dean of the Graduate School. If, in the judgment of the Dean of the Graduate School, the subject of the grievance involves matters of college or university-wide implication or is otherwise beyond the authority of the DGS to resolve, the grievance, upon the request of the Dean, shall be moved to Step 3 below.

After notification, the DGS in the department in which the event occurred shall meet with both parties and discuss the issue in an informal manner. Within twenty working days of having received the original letter, the DGS shall provide a written response recommending a resolution to the problem. The recommended resolution must be consistent with university policy.

**Step 3. Bring the Case to the Dean of The Graduate School**

If one of the parties is not satisfied with the resolution at Step 2, she/he should notify the Dean of the Graduate School in writing within 10 working days of receiving the decision. Upon receiving such notification, the Dean or her/his representative, shall meet with both parties to discuss the issue. The Dean may, as she/he feels necessary, request that others be present to help her/him arrive at a fair and informed decision (as, for example, in a case where the grievance involves specialized expertise in a field). Within 20 working days of having received notification, the Dean shall issue a decision. If, under extraordinary circumstances, this deadline is not met, then the Dean shall notify all parties of the delay.

**Step 4. Refer the Case to the Graduate Grievance Review Board (GGRB)**

If one of the parties is not satisfied with the Dean's decision in Step 3, she/he shall inform the Dean of the Graduate School of his/her intent to take the issue to the Graduate Grievance Review Board (GGRB). This notification must occur in writing within 25 working days after receiving the Dean's decision.

The GGRB shall be established within the academic area (Humanities, Social Sciences, Biological Sciences, and Physical Sciences).

Within 5 working days, four GGRB members will be impaneled by the Dean of the Graduate School as follows:

Two graduate student members elected by the representatives to the Graduate and Professional Student Assembly (GPSA) in that academic area. (Neither of these GGRB members should be in the same department as the two parties.)

Two faculty members in that academic area selected from the members of the General Committee (GC) of the Graduate School.

Within 5 working days, the chairperson of the GGRB will be chosen from the Graduate Faculty by the Graduate Dean, with the mutual consent of the parties involved. If the parties cannot agree on the recommendation for a chairperson, then the Graduate Dean will submit a panel of three names to the parties involved. They shall indicate their preference for the persons in numerical order. The one receiving the lowest total points shall be designated as the Chairperson.

Within 20 working days after the Dean is notified of the aggrieved's intention to take the issue to the GGRB, the Board shall meet to discuss the issue. The meeting shall

include a hearing granted to both parties. The Board shall arrive at a decision by a majority vote and shall, within 5 working days after the hearing, issue a final written recommendation. This recommendation shall be forwarded by the Chairperson of the GGRB to the Provost for final resolution.

If invited by both parties, the Ombudsman may be present at the GGRB as a neutral observer

### **General Provisions**

Both parties in a grievance shall have the right to be present at each meeting outlined in the procedure and to bring along a friend or other witness.

Both parties shall have the right to all cited documents.

The graduate student shall suffer no reprisals or harassment for using the grievance procedure. Her/his supervisors shall make reasonable allowance to adjust schedules to allow attendance at meetings described herein and shall not dock pay.

If several graduate students share a common grievance, they may file a grievance jointly and pursue it according to the above procedure.

No decision will be construed as setting a precedent for any subsequent decision.

### **Time Limits**

The Graduate Dean shall monitor the time limits described above, as follows:

The time limits are as prescribed in the procedural steps.

The date at which the grievance is considered filed shall be the date the grievance is received by the addressee, as per signed receipt or electronic record.

If the aggrieved fails to respond within the time limits described herein, then the issue will be presumed settled and the grievance will be closed.

## ***MPS Program Structure & Leadership Team***

### **MPS Program Director, Dwight Bowman, PhD**

Dr. Bowman is responsible for the overall operation of the MPS in Veterinary Parasitology program and can assist with general program concerns/questions.

### **MPS Assistant Director, Areceli Lucio-Forster, PhD**

Dr. Lucio-Forster teaches many courses in the program as well as leads labs in the summer, advisor for the Capstone project.

### **MPS Program Coordinator, Kate Salmon**

Kate is the best person to start with when you have a question regarding the program. She can assist with degree progress questions, enrollment, financial awards as well as other general inquiries.

### ***MPS Learning Outcomes:***

- Demonstrate an understanding of scientific principles related to parasitic organisms and diseases of animals.
- Utilize acquired proficiencies for the investigation of familiar and unfamiliar parasitic infections in differing animal husbandry conditions.
- Apply scientific knowledge in acquiring new abilities and in making decisions about changes in clinical protocols and procedures, product development and testing, and appropriate product use.
- Describe the differences between clinical trials and observational studies including advantages and disadvantages of each.
- Assess the value of several secondary measures which can be used to monitor progression of parasite-induced disease (e.g. radiographs for heartworm induced disease, anemia for haemonchosis, or plasma pepsinogen levels for ostertagiasis).
- Perform and interpret results of diagnostic procedures.
- Formulate parasitic differential lists based on case history and presentation.
- Interpret test results in a way that shows understanding of prior probabilities, test accuracy, and predictive values.
- Plan and communicate preventive medicine programs (e.g. vaccination) addressing host immunity, and environmental or management risk factors.
- Read scientific publications related to parasitic infections and evaluate validity of conclusions.
- Select appropriate diagnostic tests to monitor product efficacy.
- Evaluate management factors for controlling the presence, maintenance, and distribution of ectoparasites and nuisance arthropods in livestock.
- Understand principles of infectious disease transmission including routes of transmission, herd immunity, and pathogen characteristics that influence propagation and survival.
- Describe the requirements for product development and government approval and explain the role of government agencies in the approval process.
- Describe the requirements for adequate data collection and recording under quality assurance standards necessary for report submission to government agencies.
- Develop an understanding of a range of zoonoses and their pathology.
- Formulate final study reports/projects that are in compliance with quality assurance standards necessary for submission to government agencies.
- Devise and generate protocols to present for new product development or approval.
- Develop a thorough understanding of pharmacological concepts, research, trials, and production as well as anthelmintic development, mode of action, approval, treatment, and resistance.
- Appreciate the diversity of parasite life cycles and across taxa and their role as targets for control and treatment.
- Work collaboratively in groups on projects and papers.
- Become adept at discussing, writing about, and synthesizing a range of veterinary topics.
- Prepare and execute high quality oral presentations with visual aids, including the improvement of the student's ability to respond to audience questions effectively and tactfully.
- Effectively conduct a search of the primary literature.
- Prepare an annotated bibliography and write abstracts for research papers.
- Write an in-depth review paper.
- Interact collaboratively with experts in veterinary sciences.
- Develop professionalism skills and qualities.

Additional MPS Course and Program Information may be found on the University Registrars Course/Class page: <https://courses.cornell.edu/>