The current DVM-PhD Program was revised in 2001 and again in 2008. It is based on an earlier Veterinary Scientist Training Program instituted in 1975. Students admitted to the DVM-PhD program agree to meet the requirements and standards of the PhD and DVM training programs at Cornell University. Oversight of the dual degree program is provided by a committee of graduate faculty in the College of Veterinary Medicine with one member drawn from each of the five departments in the College. One member serves as Program Director and Oversight Committee Chair. Current Dual Degree Oversight Committee (DDOC) membership is:

- Alan Nixon (BVSc, MS), Department of Clinical Sciences
- David Lin (PhD), Department of Biomedical Sciences, Director of Graduate Studies Field of Comparative Biomedical Sciences
- Helene Marquis (DVM, PhD) Department of Microbiology and Immunology
- Linda M. Nowak (PhD), Program Director and Oversight Committee Chair, Department of Molecular Medicine
- Ynte Schukken (DVM, PhD, M.Sc.), Department of Population Medicine

Additional committee members include:

- Linda Mizer, Chair of the DVM Curriculum Committee, an ad hoc member.
- Maria Julia Felippe (DVM, MS, PhD), Director of Veterinary Curriculum, ex officio member.
- Joel Baines, Associate Dean for Research & Graduate Education, ex officio member.
- The Director of Graduate Studies for the Field of Comparative Biomedical Sciences (CBS) is either a member of the Oversight Committee, or an ad hoc member.

Administrative support for the activities of the Oversight Committee is provided through the Office of the Graduate Education Manager (Arla Hourigan), and Dr. Joel Baines, Associate Dean for Research and Graduate Education in the College of Veterinary Medicine.

Admission into the DVM-PhD program is the joint responsibility of the DDOC, the DVM Admissions Committee and the Field of Comparative Biomedical Sciences Executive Committee. Academic oversight for the DVM program is provided by Dr. Katherine Edmondson, Assistant Dean for Learning and Instruction. Ms. Jennifer Mailey in the Office of DVM Admissions at the College of Veterinary Medicine provides support for DVM-PhD Admissions and the DDOC works with former Dean, Donald Smith, Chair of the DVM Admissions Committee.
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I. INTRODUCTION

Our academic objective is bold: we seek to integrate the most rigorous basic scientific and clinical training so that our graduates will be at the forefront of biomedical science and the veterinary profession in academic research, medicine and teaching; government service and public health; or the biotechnology/pharmaceutical industry. Our Program takes advantage of Cornell's uniquely interdisciplinary environment to integrate clinical training at the nation's top-ranked veterinary school with the University's internationally-recognized strengths in biochemical, cellular and molecular biology, biomedical engineering, cancer biology, epidemiology, ecology, food sciences, genomics, infectious disease and immunology, nanotechnology, neurosciences, zoology and wildlife conservation among others.

Building on Cornell's founding principles, "...where any person can find instruction in any study," we recognize the diversity of our students and their needs for different types of training, which requires flexibility in the design of an individual's course of study. We therefore offer two curriculum options (Tracks I and II) and individual mentoring by members of the Dual Degree Oversight Committee (DDOC) and other faculty throughout the duration of the Program, to help guide each student through their choices.

For students, the benefits of Cornell's Dual DVM-PhD Degree Program include:

- training in basic sciences in order to improve fundamental biological understanding and to learn how to ask and test scientific questions appropriately;
- acquisition of a systems knowledge of anatomy, physiology, medicine and surgery that will enable students to understand biological processes and disease conditions from subcellular to organismal levels;
- understanding of the similarities and differences between species, enabling students to utilize comparative approaches to science and medicine;
- clinical training which facilitates identification of areas in need of research to benefit animal and human health;
- integration of basic science and clinical studies should decrease the time required to earn two advanced degrees in an environment where outstanding DVM and PhD training is available;
- financial support, which currently includes health insurance, summer stipend support during research rotations. Graduate school tuition, stipend and health insurance from the faculty mentor while completing the graduate portion of the program. Finally, when both the DVM and PhD are completed, the CVM will forgive all loans associated with the DVM tuition.

Clinical medicine and laboratory research have many rewards – but also potential frustrations. The College of Veterinary Medicine's DVM-PhD Program recognizes that a scientific career is a challenging undertaking. In addition to those common among all professional careers, there are particular challenges associated with dual-degree careers because the training is long and it is difficult to manage the conflicting demands of clinical, laboratory and personal responsibilities. During your training, we provide guidance for how to plan your studies, and suggest ways to deal with many problems you are likely to encounter throughout your training in the Program – and in your future career – while attempting to preserve the flexibility necessary to permit integration and completion of two advanced degrees in a timely manner.

The Cornell DVM-PhD Program is centered in the College of Veterinary Medicine and is comprised of the College’s DVM Professional Program and Cornell’s Graduate School. The unique structure of the
Program provides you with extraordinary resources and opportunities. It also is a source of challenges that we hope to minimize with this Guide. Please note, this is only a guide – not a substitute for the policies that govern your education and training in the DVM Program or in your PhD field. These policies will be reviewed annually and updated regularly. It is your responsibility to abide by them for each of the training components as they are applied during the period in which you are enrolled. While it is the intention of all involved to honor agreements made at the time you matriculate in the DVM-PhD program, some changes in the Veterinary Medicine curriculum may occur that are particular to the DVM class you are associated with. These may include, but are not limited to, addition or deletion of distribution courses, changes in scheduling of clinical rotation and distribution course blocks in years 3 and 4. During the graduate program, most of the guidance in this document is based on expectations for students in the Field of Comparative Biomedical Sciences, which is part of the Biological and Biomedical Sciences (BBS) Program based in the College of Veterinary Medicine. Be aware that other graduate fields may have different expectations for their PhD students.

II. GOALS AND ORGANIZATION OF THE DUAL DEGREE PROGRAM

The goal of the DVM-PhD Program at Cornell University is to train the next generation of leaders in biomedical research – and to do so in a manner that promotes an effective intellectual dialogue between students and faculty researchers and clinicians. Graduates of the Program will have excellent research credentials and be well qualified for the practice of medicine if they decide to combine research with veterinary practice. This program is designed to be completed in 7 years. Thus, considerable interplay of DVM and PhD studies is necessary for the student to make efficient progress through the program. Successful integration of PhD and DVM studies requires an appreciation that the mission of the graduate program and the professional curriculum are not entirely congruent. This section of the guidelines is an introduction to how the DVM-PhD program attempts to combine important parts of graduate and veterinary medical studies. In addition to a set of milestones below, strong proactive mentoring (see section III) is essential for students to complete the program in a timely way.

A. Elements of the Training Program

The main components of the DVM-PhD program are the DVM degree comprised of course work, laboratory exercises and clinical training, and PhD studies which include laboratory rotations, graduate courses, proposal writing (A-exam), thesis research and writing and defending the research in their PhD thesis (B-exam).

To meet these requirements in a 7 year period, all DVM-PhD students entering from the baccalaureate will be required to do their 1st rotation in the summer before matriculating in the DVM program in the Veterinary Investigator Program (VIP). Students are strongly encouraged to do their 2nd rotation starting sometime before the end of the first term and continuing it through the second semester. This 2nd rotation is expected to be a time commitment of 16-20 hours per week. Students who have not completed a 2nd rotation during this period will be required to complete their 2nd and 3rd rotations in the summer. Each student is expected to select a research area and mentor before entering their 2nd year of the DVM program. Students who have done their 2nd rotation during the distribution period will have an advantage in that they can do two additional rotations (i.e. a 3rd and 4th rotation), or they may complete their 3rd rotation and select their research lab mid-way through the summer, in which case they are expected to join that lab for the remainder of the summer. Once the research area and research advisor have been selected, the student, their research mentor, and the DDOC will together determine whether the student will enter Track 1 or Track 2. During the 2nd year in the DVM curriculum, students in Track 1 are expected to enter graduate school in January, while students in
Track 2 are expected to continue developing a working relationship with the lab where they intend to do their PhD research, to contribute to ongoing studies in that lab, and to develop their own research project during their time in the DVM program.

Students entering the dual degree program from the DVM or Graduate programs at Cornell should refer to section IID below.

**In summary, all DVM-PhD are expected to:**

1. Complete 3 research rotations before entering their 2nd year of the DVM program.
2. Select their thesis research mentor before entering the 2nd year of the DVM program.
3. Select, with the guidance of their mentor and the DDOC, either Track 1 or Track 2 before entering their 2nd year of the DVM program.
4. Demonstrate their commitment to combined research and DVM studies by using their free blocks and distribution periods to pursue research in their mentor’s laboratory. All students, whether they are in Track 1 or Track 2, are expected to develop a working relationship with their lab colleagues and their mentor by attending lab meetings and attending other lab functions as much as possible while they are in the DVM program.

**B. First and Second Year Timelines for DVM-PhD Students. Tracks 1 and 2:** the first two years

1. **Track 1** is structured as a 2+3+2 year program, but because a PhD degree is results-based, rather than time-based, the period of time to its completion may vary. Students in **Track 1** will complete at least 1.5 years of courses in the DVM curriculum before entering full time PhD research. After a year of research and graduate courses it is expected that students in Track 1 will be to prepare and defend their research proposal before their Special Committee (A Exam). Track 1 is designed so that students take a 3-year leave from the DVM program to complete their thesis research.

2. **Track 2** is structured as a 4+3 year program, but it too is a highly integrated dual degree training program. To be prepared to complete a PhD in 3 years students in Track 2 must complete 3 laboratory rotations and select a research mentor by the end of their 1st year in the DVM program.
Their faculty Advisory Committee (see IIIC below) will be their formal advisors during their DVM years, but the membership of this group will shift from the main Dual Degree Oversight Committee faculty in year 1, to include the student’s research mentor and likely members of the student’s Special Committee in their 2nd and 3rd year of DVM study.

Although Track 2 students will complete their DVM degree requirements before entering graduate school, they are expected to be doing research during their winter and summer breaks, and to use Distribution Course credits in their mentor’s laboratory during their time in the DVM program. Students should plan on attending group meetings and appropriate seminars, and enroll in graduate courses where possible. With the possible exception of free blocks, Track 2 students are not able to pursue their thesis research during their Clinical Rotations which are a full-time professional commitment. Upon entering graduate school, Track 2 students must be prepared to make their Special Committee official, take one or two semesters of specialized coursework as required by their committee and prepare their proposal for the A-exam before entering the 2nd year of graduate study. This timeline will be successful only if the student has diligently pursued research during years 1-3 of the DVM curriculum (see Important Milestones below and Appendix B).

3. DVM-PhD Track Selection  
The foundation of the Dual DVM-PhD Degree Program lies in the strength and scope of the educational opportunities it provides. The expectation is for every student to select their research area and research mentor before they enter their 2nd year of DVM studies. The decision whether a student will follow Track 1 or Track 2 will be based primarily on the expectations of their research mentor, and will depend upon several factors, including funding for the project and whether the nature of the research to be conducted requires DVM clinical training. The student must notify the Chair of the Oversight Committee and copy the CVM Office of Graduate Education and DVM Student Services Office of this choice in writing by the beginning of their 2nd year in the DVM curriculum.

C. Important Milestones  
It is expected that each DVM-PhD student will:

- Begin seeking guidance from the DDOC faculty within weeks of acceptance into the DVM-PhD program to select a laboratory for their 1st research rotation.
- Successfully complete one summer research rotation prior to entering the DVM Program (via VIP).
- Continue seeking guidance from DDOC faculty to select 2nd and 3rd research rotations.
- Successfully complete a second and third research rotation before beginning of their 2nd year in the DVM program.
- Choose a research mentor by the end of the third rotation.
- Make a confirmed decision about which Track to follow at the end of the summer of the first year, immediately after completion of the 3 required rotations. This decision should be made with guidance from the research mentor and DDOC.
- **Track 1 students will begin the PhD degree Program in January of Year 2.** They will form a Special Committee in their 1st year of graduate school and take their A-exam during their 2nd year in graduate school.
- During their time in graduate school, Track 1 students will be taking graduate and distribution courses, serve as a Teaching Assistant (preferably in Block VII) and pursuing research under the guidance of their mentor with consultation of their Special Committee.
• **Track 2 students will follow the same guidelines as Track 1 students during years 1 and 2 in the DVM program**, including 3 research rotations and selecting a research lab. Track 2 students are expected to use their winter break, summer and selective courses to be working in the selected research laboratory throughout their time in the DVM program. There should be full understanding by the student and their mentor that during clinical rotations the student is not available for lab meetings or other lab duties.

• Track 2 students are expected to meet with the DDOC and/or their Advisory Committee at least once annually to ensure that they are meeting Program milestones.

• Students may petition the DDOC if they believe it will be necessary to do an Externship during their DVM program.

• Upon DVM graduation, Track 2 students will pursue full-time graduate study and complete their A-exam during their first year as a graduate student. In order to do so, Track 2 students are strongly encouraged to take a few graduate courses during their Distribution Course blocks, and to engage in regular writing assignments with their mentor that will allow them to develop their research proposal substantially before they enter graduate school full time.

**D. Timeline Alternatives and Exceptions**

Students who matriculated in DVM curriculum or to PhD program at Cornell prior to joining the DVM-PhD program will essentially have the same timeline as other dual degree students. The Oversight Committee recognizes that each student’s training program will be unique.

1. **DVM students who enter the DVM-PhD Program** would have to demonstrate their commitment to research, either by having participated in the VIP or Leadership Programs, and/or doing research part time while in the DVM class. The number of research rotations required will be pro-rated by the number of labs they have done research projects in before being accepted into the program. Thus, it is likely that 1st year DVM students will be credited with one research rotation and 2nd year DVM students should have at least two. They are expected to complete their additional research rotations by the end of the summer after entering the program, select a thesis mentor, and with that mentor decide whether they will follow Track 1 or Track 2.

2. **Any current Cornell Graduate student entering the DVM-PhD program** is expected to have completed 3 laboratory rotations and selected a research mentor prior to starting the DVM curriculum. (If not, they will be expected to do so in the summer before entering Vet School.) During the first year of Vet School these students are expected to pursue thesis research during summers and Distribution Course periods. If they have formed a Special Committee prior to entering the DVM-PhD program, that committee will serve as their Advisory Committee with the addition of at least one member of the Dual Degree Oversight Committee.

3. **The 3 year research period may be extended in 1 year increments using a petition mechanism.**

   If a Track 1 student, their research mentor and their Special Committee are in agreement that the student’s research will benefit significantly by a one year extension of the research period, or if their research would be jeopardized by leaving a highly competitive ongoing project in an unfinished state, the student must submit a written petition first to the Dual Degree Oversight Committee which will judge its suitability for support before the DVM Curriculum Committee (see Appendix J).

4. **Extenuating circumstances.** The Oversight Committee recognizes that life is not always smooth and sometimes extenuating circumstances will arise that will alter the most carefully laid plans. Students are encouraged to consult with their research mentor and the DVM-PhD Program Director (currently Linda Nowak, see section IIIA) regarding any difficulties that they may encounter that are likely to affect their progress through the Program.
F. Financial Support
During the DVM program, an individualized financial support package is prepared annually for each student by the Director of Student Financial Planning, Ms. Carol Gary. Part of the financial aid package includes a loan for DVM tuition from the College of Veterinary Medicine. The loan is forgiven once the DVM-PhD students successfully complete both their DVM and PhD degrees. The College will provide health insurance during the DVM program.

During the PhD program, DVM-PhD students receive full graduate tuition, health insurance and stipend support from a mix of sources including: individual fellowships, training grants and funds supplied by their research mentor or the mentor’s department. It is expected that students will apply for graduate funding to an appropriate funding agency (NIH, NSF or USDA). Students are encouraged to submit their proposed A-exam project as an application in order that they may obtain an external critique of their thesis project. Assistance with fellowship applications is provided by the OGE. When you apply for a fellowship you should be working with your research mentor and Ms. Lamey several months ahead of the submission deadline. Resources for conducting research are the responsibility of the research mentor. (see section IX, Administrative Issues)

III. GUIDANCE AND COUNSELING FOR DVM-PhD STUDENTS

A. General Guidelines for Finding Support Personnel and Resources
The CVM Office of Graduate Education, which is managed by Janna Lamey and staffed by Arla Hourigan, generally should be the starting point for all information gathering by DVM-PhD students – in particular for students in their early years in the Program. In addition, the DVM Office of Student Services, which is directed by Dr. Jai Sweet, is a resource for DVM-PhD Degree students. The Chair of the DDOC acts as the Program Director. He/she has extensive experience in dealing with day-to-day issues and usually serves as an effective liaison between the DVM Program and the Graduate School. Questions relating to academic guidance usually are referred to the Program Director or one of the faculty advisors or groups listed below. In addition to these formal mechanisms, DVM-PhD students are encouraged to consult with their laboratory research advisors and student advisors; but, these individuals may be less familiar with the intricacies of the Program than those identified below.

Finally, the current Program Director, Linda Nowak, has weekly office hours (Thursdays 4 to 6:30 pm in C3-117 VMC), where she is available to discuss student concerns, academic or otherwise. Problems usually can be addressed most effectively if the Program is informed early, and DVM-PhD students should feel free to come directly to Dr. Nowak if a serious problem of any nature arises.

B. Faculty Advisors (during DVM training)
Each student in year 1 of the DVM program is assigned a Faculty Advisor. The Student Handbook, published annually in the College, contains a list of all of the requirements, policies and opportunities that pertain to your DVM education. Because the DVM curriculum is highly structured, with a list of required courses and laboratories, students do not always choose to consult with their assigned faculty advisor. Rather, they self-select one or more faculty advisors on an informal basis and consult directly with Ms. Paige Frey, the College Registrar regarding scheduling of courses and clinical rotations. However, it is your faculty advisor who will be your advocate if for some reason you have any concerns with a course leader or circumstances require you to bring a formal appeal to the College faculty. It is important to inform a member of Dr. Jai Sweet’s office if you change your faculty advisor, and it is
essential that you list the names of official and informal DVM faculty advisors during the DVM portion of the program on the forms submitted annually to the DDOC.

C. The Advisory Committee
During the 1st year of the DVM-PhD program this group is the Dual Degree Oversight Committee (DDOC). The DDOC will meet with each new student during the summer prior to the start of school, and before the start of Block 2 to provide students with guidance in choosing laboratory rotations, courses and selecting a thesis laboratory. All students will select their thesis research advisor at the end of the second summer (see page 6). Track 1 students will select their mentor and the DDOC will meet together with them to outline the expectations and responsibilities of the student and mentor in the DVM-PhD program. For Track 2 students, the Advisory Committee will expand to include their thesis research mentor, and it will serve in place of the Graduate Special Committee until such time as it can be officially registered with the graduate school. Advisory Committee members of Track 2 students will guide them informally and through regular annual meetings.

D. The Graduate Special Committee
This committee of graduate faculty is established by the student and their research mentor (see section VI, Choosing a Thesis Advisor,). The purpose of this committee is to guide the student through their PhD training. In addition to the many formal and informal meetings with their thesis advisor and collaborators, it is the responsibility of the student to hold a formal meeting with the members of their Special Committee at least once a year. During the first meeting of the Special Committee, the student will present their research plan to their committee and the committee will suggest appropriate foundational coursework. Annual research progress reports to the Special Committee, which will be shared with the DDOC by the faculty member assigned this responsibility, will be the basis for their continued guidance during the PhD training period (see Appendix E and F for forms). After completing two semesters of graduate study the student will prepare a formal research proposal for their Special Committee and defend it in an oral examination (the A-exam). The A-exam proposal format is specified in the guidelines published by the graduate field on their website. It is expected that a student making acceptable progress will be able to prepare a formal thesis document for their B-exam by the end of their 3rd year of thesis research. If a student needs to extend their research for an additional year, they are required to provide supporting documents from their research mentor and Special Committee members (see Appendix J for guidance) in a petition to the DDOC and DVM curriculum committee outlining their plan for the additional research year.

E. Career Counseling Group (CCG)
This is an informal group is made up of faculty selected by the student for mentoring. Members of this group are faculty who have mentored the student during their DVM-PhD studies and who will be able to provide continuing advice on the student's long-term career planning and goals (post-graduate research and clinical training, etc.). The typical CCG should be 4 or 5 faculty members including the student's PhD research advisor and other faculty members who have knowledge of their talents as an educator, researcher and clinician. Remember, it is essential to build and maintain your professional contact network to facilitate letters of recommendation for fellowships and grant applications, and for postdoctoral or residency positions, as well as to search committees when you are seeking your first position. Each student is encouraged to provide the names of their mentors to Janna Lamey on their annual report form so that she and the Office of Graduate Education staff has up to date information when they need organize letters of recommendation.
IV. THE VETERINARY MEDICINE CURRICULUM
The professional curriculum at Cornell reflects the leading edge of scientific knowledge and clinical medicine. It is comprehensive, interdisciplinary, and continually evolving to prepare veterinarians to pursue diverse career paths within the veterinary profession including basic and/or translational research. It provides a broad-based education in all of the traditional subjects and, in an era of increasing specialization, gives students the opportunity to develop an area of greater expertise. In addition to a strong foundation in biomedical and clinical disciplines, the educational program also emphasizes important related topics in veterinary medicine including communication skills, client relations, ethics, public health, practice management, and professional development.

The goals of the professional curriculum at Cornell are to:
- provide each student with the knowledge and skills that form the foundation on which to build a career in the profession;
- foster critical thinking and scientific curiosity;
- inculcate a rigorous approach to problem solving;
- emphasize the scientific principles underlying veterinary medicine;
- foster habits of self-education and lifelong learning;
- stress preventative as well as curative medicine;
- promote ethical behavior and a sensitivity to the role of the veterinarian in society;
- provide each student with a broad general veterinary education, but also the opportunity to pursue an area of interest from among the many opportunities available to veterinarians;
- teach students to recognize the limits of their skill and knowledge and to make effective use of additional resources and expertise.

These goals are achieved through the design of the curriculum and the flexible structure of Foundation and Distribution courses. The teaching formats, in particular the incorporation of small group learning and collaborative work, foster self-education, problem solving, and help students recognize the limits of their knowledge and skills. Preclinical courses use clinical cases to fuel scientific curiosity, while emphasizing the scientific principles that underlie medicine. In this curriculum, students become actively engaged -- working independently as well as with faculty and peers. The rich learning environment produced by these teaching approaches helps students assume greater responsibility for their education, learn to use additional resources, and fosters habits of lifelong learning.

The College has modern and well-equipped teaching and clinical facilities, and draws upon faculty who are dedicated teachers and leaders in their respective fields. A variety of educational resources are available to support student learning; these are readily accessible to students at all hours. Cornell University Hospital for Animals (CUHA) is equipped with state-of-the-art equipment that allows for the most up to date diagnostic and therapeutic procedures on inpatients and outpatients. Under the direction of the clinical faculty, students play an integral role in the healthcare of animals, and in communications with CUHA clients.
**A. Foundation Courses:**

Foundation courses are interdisciplinary and represent approximately 70 percent of the professional curriculum. In Foundation courses I, III, and IV (VTMED 5100, VTMED 5300, VTMED 5400), students work in small groups under the guidance of a faculty tutor. Case-based exercises are used to facilitate the understanding of basic science concepts within the context of clinical medicine. In some courses, three two-hour tutorial sessions are scheduled each week. These are complemented by lectures, laboratories, and discussion sessions or other organized learning opportunities specific to the individual course. Faculty members are available to respond to questions that arise as a result of the case-based exercises.

Tutorial sessions and all other organized learning programs are scheduled primarily during the mornings, thereby reserving time in the afternoon for independent study. By learning in a clinical context, students are better able to integrate material from the basic and clinical sciences and are encouraged to develop an understanding of the clinical reasoning process from the beginning of the curriculum. The tutorial-based educational format creates an atmosphere that requires students to be involved actively in their learning and allows them to develop skills in communication, information retrieval, and analysis. With the exception of Neuroanatomy and Neurology, most foundation courses are referred to as "Blocks" by students and faculty. (Clinical Rotations represent core material in Block 6.)

Course descriptions are found at the following website (below is a summary of the information provided):

http://courses.cornell.edu/preview_program.php?catoid=12&poid=3518

![Course Schedule Diagram](image-url)
• **The Animal Body (Block 1):** gross anatomy, histology, radiology and imaging, introduction to surgical approaches.

• **Neuroanatomy and Clinical Neurology:** structure and anatomic basis for the diagnosis of diseases of the central nervous system, and their differential diagnosis.

• **Cell Biology and Genetics (Block 2):** cell biology, cell signaling, medical genetics, and cancer biology.

• **Function and Dysfunction (Blocks 3a and 3b):** physiology and homeostasis, biochemistry and cell biology, cell injury and repair, histology, hematology, and principles of pharmacology.

• **Host, Agent, and Defense (Block 4):** inflammation and infection, the immune system and immunopathology, histology, bacteriology and mycology, parasitology, virology, antimicrobial therapy, and disease outbreak investigation.

• **Animal Health and Disease (Blocks 5a and 5b):** integration of pathology, applied anatomy, clinical pharmacology, medicine, surgery, nutrition, and related clinical disciplines. **Animals, Veterinarians, and Society (Block 7):** physical examination, biomedical ethics and clinical genetics, communication skills, information management, human-animal bond, health maintenance in individual animals and populations, veterinary public health, professional development, societal responsibilities of veterinarians, and hospital and practice management.

**B. Distribution Courses**

Distribution courses comprise 30 percent of the curriculum and are usually scheduled during the first half of each spring semester. During the first two years, many of the distribution courses are oriented to the basic sciences. During years three and four, students have additional distribution course offerings from which to choose. Some emphasize clinical specialties, whereas others integrate basic science disciplines with clinical medicine and are co-taught by faculty members representing both areas. Students from different classes have the opportunity to take many of these courses together. A complete description of the courses can be found:


Cornell students pursue a wide range of experiences according to their professional goals and interests. Distribution courses provide an opportunity to do research during the clinical training period in addition to completing additional clinical rotations in the following areas: theriogenology, cardiology, exotic animal medicine, oncology, laboratory animal medicine, and equine primary care. Students may also obtain clinical experience for academic credit off campus-in institutional settings with established teaching programs, or in facilities offering unique clinical or research experiences. **DVM-PhD students may take some of their distribution course credits during their years as a PhD student.**

**C. Clinical Rotations in the Cornell University Hospital for Animals (CUHA) (Block 6)** - In the third year of the DVM curriculum, students participate in supervised clinical work at the Cornell University Hospital for Animals (CUHA). Students rotate through a series of required clinical rotations, and select one of several pathways that offer the opportunity to develop specific skills necessary for their chosen area of veterinary medicine. Required clinical rotations include: ambulatory medicine, anesthesiology, dermatology, large animal medicine, large animal surgery, ophthalmology, pathology, imaging, community practice service and small animal theriogenology, small animal medicine, small animal surgery, and emergency and critical care medicine. Pathways include: Small Animal, Equine, General (Mixed), Exotics, Zoo and Wildlife, and Production Animal Medicine.
D. Clinic Rounds are case presentations that occur on a regular basis in different specialty clinics throughout the year. They are open to everyone in the College, but they are geared toward students and represent an excellent mechanism to integrate DVM-PhD training. Case presentations are made by 4th-year students, residents, or faculty members. The cases are usually animals that are currently in the clinic and are selected for their teaching value. The presentations include a complete history of the animal, radiographs, summaries of how the case has been handled to date and, in the large animal hospitals, usually the patient itself. A current schedule of clinical rounds can be found at http://students.vet.cornell.edu/ under “courses,” “round schedules.”

V. GRADUATE STUDY
The three major Graduate School requirements for the PhD degree are six semesters of study that earn registration units (6 RUs), two oral examinations (the A and B exams) and the written dissertation. DVM-PhD Degree students are usually admitted to the Field of Comparative Biomedical Sciences (CBS), which is a part of the Biological and Biomedical Sciences (BBS) training program in the College of Veterinary Medicine. The BBS program also includes the Fields of: Immunology & Infectious Diseases, Microbiology, Molecular and Integrative Physiology (MIP), Pharmacology, and Zoology and Wildlife Conservation.

Graduate students are expected to:
1. Make an original and substantial contribution to their field of research.
2. Demonstrate in-depth knowledge of one sub-discipline in their field.
3. Demonstrate a broad knowledge of theory and research across several sub-disciplines.
4. Learn and follow ethical guidelines for research scientists and academic professionals.
5. Write and speak effectively to professional and lay audiences about major issues in their research area.

DVM-PhD students are expected to complete 3 research laboratory rotations, select a thesis research mentor, and together with their research mentor and the DDOC determine whether they will follow Track 1 or 2 before entering the second year of the veterinary curriculum. Major differences between traditional graduate education and the DVM-PhD are that DVM foundation courses contribute a greater breadth of knowledge, while graduate courses are designed to explore unsolved problems that can be addressed by employing the scientific method. To achieve the goals for any researcher, whether they earn PhD or DVM-PhD degrees, requires them to understand that their success in achieving a depth of knowledge in any subject is proportional to their efforts to educate themselves.

A. Laboratory Rotations
DVM-PhD students are required to rotate through the laboratories of three graduate faculty members prior to selecting their Special Committee Chair. Although the time spent in each laboratory may vary between 8 and 14 weeks, it is expected that each rotation will be a meaningful experience. When selecting rotation laboratories, students are strongly encouraged to review faculty web sites, read publications resulting from the faculty member’s research, meet with current graduate students in the laboratory and find out about the resources available to conduct research within the laboratory and the department of record. Students are strongly encouraged to discuss potential rotations with your Advisory Committee and DVM-PhD Program Director.
Each student and faculty mentor is required to complete an evaluation form at the end of each rotation (see Appendices C and D). Please be aware:

- Your experience will be different from that of the student who came before you – and the student who will come after you.
- Explore the laboratory in person. If possible participating in lab meetings once or twice before committing to your rotation.
- Do not expect to finish a research project in your rotation research; your goal is to select a laboratory in which you will work on something the laboratory is known for so that you can learn the methods and be an active participant in the exchange of ideas.
- When searching for a thesis lab, you are searching for a project and an advisor in a lab environment where you believe you will be productive and have appropriate mentoring.
- Finally, your ultimate success in finding a research mentor will hinge on the interest and enthusiasm you project. Remember this is an extended job interview; treat all involved with respect. If you work hard, ask questions and offer suggestions, you are a winner.

**B. Choosing a Thesis Advisor**

Any graduate faculty member at Cornell University can serve as the research advisor for DVM-PhD students. It is important to recognize that the student-mentor relationship should be one where there is trust and mutual respect since it is going to be a close working relationship for the years of the research, and beyond when you are looking for future training and employment. Typically, the research mentor is also the Chair of the Special Graduate Committee, but this is not obligatory, as any member of the graduate faculty can serve as Chair. For example, if two labs are collaborating closely with you on your project, you may be doing most of your research in one laboratory, but your committee chair may be your main collaborator. For the Dual DVM-PhD Program, the responsibility for a student’s research guidance and progress rests with the head of the laboratory in which the student is working. The thesis advisor is responsible for the following:

- Providing financial support for the PhD degree portion of the program, to include stipend in accordance with the BBS Stipend Level, tuition and health insurance
- Providing ongoing research mentorship throughout the Program
- Providing support in all research-related costs
- Providing laboratory space and access to necessary research equipment, research and office space

**Things to remember when searching for a thesis laboratory**

If a student joins the laboratory of a faculty mentor who is not in the Field of CBS that faculty member will be encouraged to join CBS. This benefits the student and their mentor because their dual degree program will be more easily integrated, and it makes more laboratories available to the student for their thesis research.

**C. Graduate Special Committee:**

A student’s PhD degree program is developed and supervised by a Special Committee composed of members of the Graduate Field of Comparative Biomedical Sciences and other Fields chosen by the student to fit his or her particular needs and interests. Once constituted and registered with the Graduate School, it is the responsibility of the student to have an annual meeting with their Special Committee. They must also ensure that the comments and advice of committee members and their Chair are presented to the special committee, and to Ms. Lamey in the Office of Graduate Education via completion of the Annual Progress Report (see Appendices E and F).
The Special Committee of a doctoral student in the Field of CBS is composed of at least four members of the graduate school faculty, as detailed below; additional members may be added if the student desires.

- The Chairperson represents the concentration chosen as the student’s major subject area. The chairperson usually directs the student’s thesis research. If the Chair is not the research mentor, it is expected that the research advisor also be a member of the Special Committee.
- Two faculty members representing two minor concentrations. They may be faculty in the Field of Comparative Biomedical Sciences or in other Fields. In principle, choice of concentrations that leads to over-specialization or a narrow view of science and scholarship will not be acceptable and the student is encouraged to form a committee that will bring breadth and diversity to his/her training.
- The Field Appointed Member is the only member appointed by the Executive Committee of the Field soon after the student’s Special Committee is formed. He/she is a voting member of the graduate field whose role is to insure the fulfillment of high standards during the student’s training.
- One member serves as a liaison for the DVM-PhD Oversight Committee, the student, their Chairperson, and their Special Committee. This member must be a current member of the DDOC at the time the Special Committee is formed. This person may or may not be the Field appointed member, but they cannot be the student’s research advisor or chairperson.

D. Graduate Coursework
For the graduate field of CBS, you must fulfill requirements for two minor fields. A minor is offered by most of the graduate Fields at Cornell and they usually have specific course requirements. Keep in mind your goal is to maximize your own education and to become proficient in two areas related to your future thesis project and academic interests. When you decide on a lab, you will recruit two faculty members to serve on your special committee, whose job is to represent your two minor areas.

Examples of minors include Genomics, Pharmacology, Immunology, Biochemistry, Microbiology, Development, Physiology, Genetics, Nutrition. Typically, a minor requires the student to take 4-8 credits, or 2-3 classes. More information can be found on each Field web site.

In addition, during your first year in graduate school you will take BioAP6100 – By Experimental Design; Survival skills for graduate students. You will also have to take an Ethics course at some point in your graduate career. There is only one option right now: BioMG7510 - Ethical Issues and Professional Responsibilities. A course in Clinical Biostatistics (VTPMD 7070) is also recommended as a good introduction to experimental design, data analysis, and interpretation.

E. Graduate School Requirements and Field Recommendations
The Graduate School has very few specific requirements for the PhD degree. Official requirements are purposely minimal since graduate education at Cornell University is considered to be the purview of the Graduate Faculty serving on the Special Committee which includes a Field Appointed member to ensure that program expectations are met. The majority of DVM-PhD Degree students are in the Field of Comparative Biomedical Sciences (CBS), and under the guidelines of the Biological and Biomedical Sciences (BBS) program in the College of Veterinary Medicine students can expect to do the following:

- Conduct an Annual Meeting of the Special Committee
- Complete a minimum of six Registration Units (6 RUs) for a Ph.D. degree. An RU is defined as one semester of full-time study at a level deemed acceptable to the Special Committee. DVM-PhD students enrolled in Track 2 may, with the approval of their special graduate committee, petition the Graduate School to accept transfer credits earned during the DVM degree program. This transfer can cover up to 2 RUs toward the PhD.
Take the Admission to Candidacy Exam (A-Exam): Before the end of the second year of graduate study, the PhD student must prepare and defend a research proposal before their Special Committee in order that they may be admitted to doctoral candidacy. This examination is typically oral, but the form of the A-exam is determined by the special committee. The passing of this examination certifies that the student is eligible to present a dissertation to the graduate faculty. Normally students have completed their course requirements before taking the A Exam. An exception may be made by the student’s Special Committee if a student has not yet taken a recommended course that was not offered during their first year as a graduate student.

Thesis Defense (B-Exam): This is an oral examination by the Special Committee based on the content of the Ph.D. dissertation and the expectations of scholarship in the student’s discipline. A minimum of two registration units must be earned between passing the A exam and the B exam.

A doctoral candidate takes the B-exam upon completion of all requirements for the degree but no earlier than one month before completing the six registration unit requirement.

Thesis Document: DVM-PhD degree students must present a dissertation of acceptable in scholarship and literary quality. A relatively polished draft of the thesis including all tables, figures, appendices and references must be presented to all members of the Special Committee before the final examination. The duration of the period reserved for the reading of the dissertation is to be established by the members of the committee with the student in advance of scheduling the B-exam. Acceptance of the thesis or dissertation requires the approval of all the Special Committee members.

F. Publications
It is the expectation that DVM-PhD students will have at least one first-author publication in press in a peer-reviewed journal by the time they graduate from the Program. Additional publications before or following the B-exam are a hallmark of a strong thesis.

VI. INTEGRATION OF DVM AND PhD STUDIES
The purpose of a temporal intermingling of DVM and PhD training is to facilitate an intellectual synergy between the scientific and clinical disciplines. It is also anticipated that this program will allow students to reduce the overall time it takes to earn both degrees sequentially.

Comparing DVM, PhD and DVM-PhD program timelines during the first two years:
- DVM students take basic science courses with tutorials that explore scientific principles and pathology associated with medical cases (Foundation Courses 1-4), clinical laboratory exercises and the role of veterinarians in society (Course 7).
- Graduate students take foundational graduate courses, complete 3 laboratory rotations, and select their thesis research mentor. The second year begins with selection of the Special Committee and the 1st committee meeting where additional graduate coursework is defined and preliminary research data is presented. Near the end to the 2nd year, students are doing thesis research and preparing to defend a written research proposal in an oral examination before their Special Committee (A-exam).
- DVM-PhD students combine all of the DVM classes, tutorials, lab exercises and Course 7 material in the first year, and they complete 3 research laboratory rotations, selecting a thesis research mentor, and determining with their mentor and the DDOC whether they will follow Track 1 or 2.
A. Track 1 and Track 2 pathways
Two globally different pathways to combine the DVM and graduate study periods both allow an unbroken 3 year period for thesis research and integration of the DVM and PhD curricula throughout each pathway.

1. **Track 1 students** follow a 2+3+2 program, where they combine the first 2 years of the DVM curriculum with lab rotations and selection of their thesis research supervisor. Students are able to receive credit toward their DVM degree for research conducted during distribution periods and are encouraged to take research-oriented coursework during distribution periods. They have the opportunity to participate in two highly regarded summer research programs, the Veterinary Investigator Program (VIP) and the Leadership Program to gain additional research experience during the DVM portion of the Program. After completing Foundation Courses 1 through 4 in the DVM curriculum, Track 1 students will take a 3-year leave from the DVM curriculum to complete additional graduate coursework, write and defend their research proposal (A-exam) and complete their thesis research before returning to the DVM program in the second half of their 2nd year of the DVM curriculum. A student who is very close to finishing their research at the end of the 3-year leave period, except for a critical piece of a study that is particularly time sensitive, may petition for an additional year of thesis research before they return to the DVM curriculum (see Appendix J). During their PhD research students are encouraged to complete additional DVM distribution courses, serve as a teaching assistant for Foundation Course VII, and participate in clinical opportunities at the college including attending rounds, volunteering in different hospital services, particularly if these activities integrate well with their PhD research.

2. **Track 2 students** are those whose PhD research would be greatly benefited by their having a Veterinary degree. Track 2 is also an integrated dual degree curriculum where first year students complete 3 laboratory rotations and select their research mentor. Students may join Track 2 if it is stipulated preferable by their research mentor, and this decision must be made prior to entering the 2nd year of the DVM curriculum. During the DVM program, Track 2 students take research credit in the Distribution course period, do and begin to develop their research project in the summers and during other breaks in the DVM curriculum. For DVM-PhD candidates planning to combine translational research and a clinical career, Track 2 training may be preferred by some thesis mentors who combine translational research and a clinical career because this path allows their trainees to familiarize themselves with real clinical problems that need scientific investigation. Students and their mentors must both be aware that during parts of Foundation Course 5 and during Clinical Rotations, the student’s professional duties does not allow them any time for doing research.

B. Mechanisms for Integrating DVM and PhD studies
Research may be conducted during the DVM curriculum in the form of laboratory rotations during summer breaks and during 4-8 week periods in distribution blocks. During PhD training students are encouraged to take a few DVM short courses in the distribution periods and maintain their clinical skills by completing their teaching assistantships in clinical laboratories and periodically volunteering for supervised clinical training such as in the Community Practice Service or Colic Crew.

1. **Lab Rotations**. Two of the three laboratory rotations are completed during summer breaks from the DVM program through two structured programs that foster critical thinking skills. Both programs feature discussions with exceptional researchers from Cornell and outside.
- **Veterinary Investigator Program** (VIP) is open to DVM-PhD and DVM students accepted into the DVM program in the summer prior to their enrolling. Students do research in the laboratory of a Cornell faculty member. They participate in a variety of group training exercises, discussions and social events and receive a summer stipend. The VIP program is organized by Associate Dean for Research and Graduate Education, Dr. Robert Gilmour, who maintains it through a grant from the National Institutes of Health and other resources.

- **Cornell Leadership Program** is open to current DVM and DVM-PhD students following at least 1 year of DVM studies. This is an international program that brings together research-oriented veterinarians in training from across the US and the world to stimulate their career goals in research and leadership roles in the veterinary profession. It combines faculty-guided research with student-directed learning through participation in modules, workshops and group discussions. The activities encourage responsible leadership, critical thinking and the development of teamwork skills. The program also highlights graduate training opportunities calculated to promote the professional development of program alumni as independent scientists and public health professionals. This program, is directed by Dr. John Parker. Funding for the program is from a grant sponsored by the National Institutes of Health and other resources.

2. **Distribution Courses** allow DVM students to individualize their clinical and research interests. DVM-PhD students while completing the PhD portion of the program may enroll in these courses and DVM-PhD students while completing the DVM portion of the program may complete short research projects with their Special Committee Chair to help the PhD progress.

- **Course Credits**. DVM-PhD students in Track 1 who are pursuing graduate coursework and thesis research may take courses from the DVM Distribution Course list for up to 4 credits per year. Thus, you may earn up to 12 credits toward the 37 required for the DVM degree during a 3-year period. Students must seek permission to register for these courses well in advance of the course selection deadline since the College Registrar, Ms. Paige Frey, will need to work their requests into the schedule in advance. Be aware, some specialty courses have prerequisites and others select students using a general lottery because there are fewer places than there is interest among students. For these lotteries, dual degree student requests will be treated like those of other DVM students.

- **Research Credit**. DVM students may register for research in the Distribution block periods, for up to 4 credits per year for a total of 15 credits. In 2010, the Curriculum Committee voted that all DVM students have the right to earn Distribution Course credits for research activity. For DVM-PhD students, this opportunity is most useful in their 2nd year of the DVM program when they are seeking to complete their 3rd lab rotation. Students following Track 2 will also find this option useful in their 3rd year of the DVM program when they are beginning to establish their research project.

3. **Topics Courses** are intended to allow DVM students to learn more about research in particular areas of animal and human health.

- **Current Topics in Microbial Pathogenesis (VETMI 7251)** – A journal club course based on contemporary scientific literature related to microbial pathogenesis. Offered in the Distribution Course period by Dr. Craig Altier and Dr. Helene Marquis in even numbered years. In the journal club, students select and present papers with guidance from the course directors. This
course is intended to promote students reading widely in the scientific literature and to develop their public speaking skills (open to Track 1 and 2 students).

- **Current Topics in Biomedical Research** (in preparation) will be taught once during the A/B Distribution Period in the Spring. It will be open to all DVM students and DVM-PhD students in any year of the DVM curriculum, but it should be taken by DVM-PhD students in their 2nd year of the DVM program. It will be a seminar/research course based on current topics in biomedical research and technology. Content will vary from year to year depending upon the faculty who participate. Topics will include, but will not be limited to discussions of the genetic, molecular, biochemical and cellular basis of disease including developmental disorders and cancer. Participating faculty will lead a discussion of an important hypothesis in their general area of research. Topic-related reviews and/or research articles will be assigned as background reading. The course is intended to encourage students to engage in active reading, critical thinking and writing about important problems in research and medicine (open to Track 1 and 2 students).

4. **Clinical Training Opportunities.** DVM-PhD students should plan to participate in formal and informal veterinary experiences where they can actively learn procedures and maintain clinical skills. Oversight of the types of opportunities chosen and the number of hours dedicated to clinical opportunities will be the responsibility of the dual degree candidate and his/her Advisory Committee. Identified options include, TA in clinical labs (i.e. Block VII, Junior Surgery, Equine Lameness, Anatomy), Volunteer at Shelter Program or Wildlife clinic, and Community Practice Service (mainly Track 1 during the graduate study years, but also Track 2 during the DVM curriculum).

5. **Teaching Requirement.** Dr. Carolyn McDaniel, Course Director for Block VII (Animals, Veterinarians and Society) offers an opportunity for Track 1 and Track 2 DVM-PhD students to serve as her Teaching Assistant (TA). This is an unpaid TAship for which the student will receive course credit under the Special Topics courses. As a TA you can expect to receive training in course design and assessment skills. Students seeking this TA opportunity must meet with Dr. McDaniel to determine their clinical skills level so they can be assigned an appropriate section of VIIa-f for them to assist. Track 2 students may also pursue this TAship either while they are doing their DVM or their PhD studies.

6. **Requesting Transfer of Credit.** In keeping with graduate school regulations, any person with a Cornell DVM, who is enrolled in PhD studies at Cornell may petition the Graduate School to transfer credits earned in the DVM program equivalent of two Registration Units (RUs) toward the PhD degree requirement. This can only be done with the full support of the Special Committee. It can have the effect of reducing the PhD research period by one year for students in Track 2.

VII. EVALUATION

Grade Expectation

Grading of student work in the DVM program is the purview of the faculty teaching in that component of the program. DVM and PhD degree program students are expected to excel in all DVM and PhD coursework. As a result, satisfactory academic performance for a DVM-PhD student is fulfilled when a student has received a grade of B- or better on all coursework in a given semester. Please note that the level of an acceptable grade in the DVM program is lower than in the PhD or DVM-PhD programs. For
this reason, a DVM-PhD student's progress may be considered inadequate, while their work may be deemed adequate in the DVM program.

The DVM-PhD Oversight Committee conducts an annual review of the academic standing of all students. Any student who has not met program academic expectations should except an informal warning or a letter from the Program Director depending upon the level of concern provoked by poor grades and/or poor research progress. Written notification will include an invitation to the student to explain the circumstances of their academic deficiency to the Oversight Committee. This may stimulate a formal review of the student's suitability for the dual degree program.

**Laboratory Rotation Evaluations** - by professor and student
For each research laboratory rotation the head of the lab will submit a written report on the students’ performance to the Office of Graduate Education, and they are shared with the Dual Degree Oversight Committee. The student will also evaluate their research experience in the lab. The faculty Laboratory Rotation Evaluation form is reproduced in Appendix C and the DVM-PhD student evaluation is Appendix D. Given that the identity of the students who submit the forms will be known to anybody who reads them, these forms are confidential information. These evaluations will be reviewed annually by the DDOC. ANY breach of this confidentiality will be considered a breach of the Code of Academic Integrity (see Appendix L).

**Annual Progress Reports** – from the thesis research mentor and student
Each year following selection of the thesis lab, your mentor is contacted by Ms. Lamey to complete a brief, written assessment of your progress in their using the form in Appendix E. Students are also contacted and required to complete an Annual Report (Appendix F), which allows for self-reflection and an opportunity to share valuable information to the dual degree Oversight Committee. In their annual review of student progress (typically in early Fall) the student’s progress and any concerns he/she may have. This information is highly confidential, and the Code of Professional Conduct applies. The information is used to follow each student’s progress, and to identify any concerns the student and mentor have before it becomes an irreconcilable problem. If there is a problem, the insights provided by these reports allow the Program Director and DDOC to make suggestions to both parties to mitigate the problem.

**Special Committee** - Each student’s Special Committee meets at least annually to evaluate the student’s academic progress. Written reports are forwarded to the CVM Office of Graduate Education. In case difficulties are perceived, the DVM-PhD Program Director will be conferred.

**Admission to Candidacy Examination** – No later than completion of 3 Registration Units (RUs) towards the Graduate Degree, the Special Committee evaluates whether the student has mastered his/her research area and is ready to proceed officially to the thesis research. The Committee decides if the student passes, fails or receives a conditional pass; this becomes part of the record with the Graduate School.

**Defense of Thesis** – The Special Committee reads the thesis, attends a public presentation by the degree candidate, and administers an oral examination on the subject matter presented. The Special Committee decides if the student passes, fails or receives a conditional pass; this becomes part of the record with the Graduate School.
VIII. TRANSITIONS
Matriculation into the DVM-PhD Program
Are you a DVM-PhD student or a DVM or PhD students? You are all things at all times! You will work in the laboratory and be in the classroom during the first two years of veterinary professional training. You will be co-mingled with a large class of DVM students and become a full-fledged member of that class. – If you choose Track 1, you will be graduating in a different DVM class than you started in, and during your clinical rotations you may be under the supervision of residents who might have been your classmate earlier. As one recent graduate of the Track 1 program said: “I started Vet School and met a great bunch of people, when I reentered Vet School after my PhD, I met another great bunch of people. I have twice as many friends and colleagues.” Remember too that you are the beneficiary of many privileges, which means that you will be held to a high(er) standard and this can be stressful, and sometimes feel unfair. Always remember that though the laboratory is exciting, and may be your eventual calling, while in the Medical College you are training to become a clinician – to take care of patients. Act accordingly! That said, you will (or should) approach the material with a more questioning attitude than many DVM students would; however, you should not go overboard doing so. As a clinician-scientist you are expected to be skeptical of authority – and yet to function well within the accepted behavioral norms of the veterinary medical profession, which as for other professions has a well-developed hierarchy. Finally, as a DVM-PhD student, your training involves a series of transitions that set you apart from both DVM and PhD students. Your fellow, DVM or PhD students will not always understand the stresses these transitions create; but the Program leadership will.

From Professional Program to Graduate School
The transition from the Professional Program to the Graduate School may be stressful. First, you must decide on a thesis laboratory. Second, your DVM Program is predictable and your life is structured by the curricular demands. Laboratory research, in contrast, is inherently less structured and routinely obtaining good quality data takes practice. You need to identify a suitable thesis project, which despite the best planning may turn out to be a dead end – or cause unexpected difficulties. You also will worry about how you will “fit” into the laboratory: will you get along with your advisor; will your thesis project continue to excite you? These concerns are common for all DVM-PhD students. Relax, even though the concerns are real, they are manageable – and your predecessors in the Program have managed them successfully!

From Graduate School Back to the Professional Program
The transition from Graduate School back to the Professional Program causes even more stress. You leave the relative freedom of the laboratory for the structure of the clinical training, where you are part of a team and where your activities are to a large extent dictated by your responsibilities for your patients. It is difficult to make the transition from a recognized expert in your field of research to a (somewhat unprepared “rusty”) DVM student. You have been away from the Professional Program for 3 years, or more. Yes, in the first few weeks you will not know as much as the third-year DVM students in your class – and to make matters worse, you will not even know your fellow students, as you usually will be the sole DVM-PhD student. Fortunately, you are reentering the DVM Program in Block 5a, which may be described as the pre-clinical lectures and labs. The hours are long and the tests come every 2 weeks. So, you have the opportunity to catch up fast! Do not underestimate the impact of what you have learned during your thesis research and how it will help you in the clinic. Your animal handling and procedures skills may be rusty, but the depth of understanding you bring to the practice of medicine should be enhanced. You have gotten a thorough training in basic biological mechanisms. You also are trained to digest large amounts of material, to formulate working hypotheses, and to plan and execute
the experiments that will allow you to test your hypotheses. These same skills are invaluable in the clinical setting – and you will find that you remember more of the Professional curriculum than you thought you did.

From Professional Degree Program/Graduate Program to Postgraduate Clinical/Postdoctoral Training

The search for internship and residency programs is another period of stress. You will apply when you have been through only a fraction of your clinics, and you are likely to be uncertain about your goals. You may also feel that your skill set is not as developed as it should be. The decisions you make are important, but relax (a little) – medicine and biomedical research are changing rapidly, and nobody can plan for more than three years, or so, into the future. So, the only thing that really matters is to avoid bad decisions – and to maintain as much flexibility as possible.

Remember the postgraduate clinical training programs are looking for clinicians, people who take good care of patients. That you are trained in research is a plus, but no amount of research training (or publications) will make up for a poor record in your Professional Program! Grades matter, and it is important to “make a good impression” – as a future clinician.

IX. ADMINISTRATIVE ITEMS:

Funding - DVM-PhD degree students will receive substantial financial incentives to complete both degrees. Stipends will be paid during summer laboratory rotations and throughout the PhD portion of the program. Stipends will be in accordance with the Biological and Biomedical Sciences Graduate Program stipend rate and will be funded by the faculty mentor. Stipends will not be provided while in the Professional Degree program. Graduate school tuition and fees will be paid by the student’s faculty mentor during the PhD portion of the program. However, the College will provide a tuition loan for the veterinary school tuition, which the College will forgive once both the DVM and PhD degree programs are completed. In essence, the tuition will be paid for the DVM upon completion of the DVM-PhD Degree Program. Health insurance, through Cornell’s SHIP (Student Health Insurance Plan), will be provided throughout the seven years of training. While a DVM student, the College of Veterinary Medicine will pay for this. While a graduate student, the faculty mentor will provide support for health insurance.

Interview/Recruitment: DVM-PhD students participate in the interview/recruitment of new Dual Degree students during the Interview Days (in February and March).

Publications: Students should provide the Office of Graduate Education with two copies of any publication (except abstracts and their thesis) on which they are an author or co-author. The Office will collect the publications from each year in bound volumes, so please provide reprints or the URL for your article to the Program Office as soon as possible after publication.

Acknowledgment of DVM-PhD Support in Publications: Students, who are /have been supported by any fellowship, should acknowledge that support as well as the source of funds supporting the research. Money begets money; previous funding support is a sign of success.

Vacation: Students may take an annual vacation in accordance with policy set by the Graduate School and their research mentor. Although, vacation time during the DVM years will follow the academic calendar and the policy of the DVM Program, as a DVM-PhD Degree student you are expected to consult with your research mentor regarding vacations. For students doing their thesis research, the
Timing of vacations should be agreed upon between student and thesis advisor. Grievances can be brought to the Program Director.

**Sick Leave and Other Leave:** As a PhD Degree student, you may continue to receive stipends for up to 15 days of sick leave per year. Sick leave may be used for medical conditions related to pregnancy and childbirth.

**Parental Leave:** While in the PhD degree program, students may receive stipends for up to 30 days of parental leave per year for the adoption or the birth of a child. The use of parental leave must be requested at least 30 days in advance of the anticipated beginning date, and must be approved by the Program Director and, when appropriate, the thesis advisor. There is no parental leave for DVM students; student will need to take a Leave of Absence from the DVM Program.

**Unpaid Leave:** While in the PhD degree program, students requiring extended periods of time away from their training experience, which could include more than 15 days of sick leave and/or more than 30 days of parental leave, must seek approval from the Program Director for an unpaid leave of absence. Whenever possible, approval for a leave of absence must be requested in advance of the leave.

**Withdrawal from the Program:** Students who contemplate withdrawal from the DVM-PhD Program should recognize that withdrawal has serious repercussions, as they will lose all DVM-PhD “privileges” including stipend and tuition support. Assuming they otherwise are in good academic standing, and with the permission of the Program Director, students who withdraw from the Program can matriculate in the Professional Degree Program or the Graduate School, where they will be subject to the policies and graduation requirements that apply to single-degree DVM or PhD students.

**Protection of Intellectual Property Rights:** A student may not enter into any legal agreement involving his/her research without consulting his/her advisor and the DVM-PhD Program Director. Many organizations and investigators that supply research materials, which could be in the form of access to proprietary databases, insist that a Materials Transfer Agreement, or a similar document, be signed by the recipient. These are legal documents, and their wording may place (severe) restrictions on the use, and outcome of any use, of the supplied materials. If a student uses such supplied materials to make a patentable discovery, the student may discover that it is the supplier of the materials and not the student who owns the invention. Therefore, do not view such documents lightly, and do not sign any agreement that has the potential to limit you rights to any discovery without seeking advice. As a general rule, students should avoid signing any such documents and refer the matter to their advisor.
Appendix A. Getting Started: Summer Programs and Research Rotations

Students are expected to complete all necessary information required to matriculate in the DVM program as per the Cornell DVM Program guidelines, and communicated by that office. While it is possible to enroll in the DVM program before completing a bachelor's degree, all students enrolling in Cornell's graduate school are required to have completed a bachelor's degree or equivalent before they matriculate, and the Office of Graduate Education must have received final, official transcripts from the undergraduate institution confirming that the appropriate degree was received.

First Summer (First Rotation) The DVM-PhD Degree Program requires newly accepted students to complete their first research rotation in the summer before entering the DVM program. Students should apply to the Cornell Veterinary Investigator Program to ensure that their summer research rotation is organized before they arrive, and to receive a summer stipend. Incoming students are requested to consult with the Program Director and/or other Cornell faculty members before submitting their VIP rotation selection list to ensure this rotation that is in line with their career goals. The Program Director should be informed which lab you will be rotating in before the start of the summer program starts.

1. Cornell Veterinary Investigator Program (VIP)

The VIP program is designed to provide first- and second-year veterinary students with a focused biomedical research experience. The main objectives of the program are to provide veterinary students with a rigorous and rewarding exposure to biomedical research at the highest level of inquiry and to motivate students to pursue the study of research problems that are relevant to veterinary medicine. Specifically, each student will develop:

- research skills
- an appreciation for the value of biomedical research in veterinary medicine
- a desire to pursue a career that involves biomedical research

More information is found: [http://www.vet.cornell.edu/oge/investigator/](http://www.vet.cornell.edu/oge/investigator/)

2. Leadership Program for Veterinary Students

The Leadership Program for Veterinary Students at Cornell University is a unique summer experience for those who seek to broadly influence the veterinary profession through a science-based career. It is an intensive, research-oriented program combining faculty-guided research with vocational counseling, student-directed learning, and other professional enrichment activities. Approximately 25 veterinary students from the United States and abroad are accepted into the program annually. Qualified applicants are highly motivated individuals who have distinguished themselves in a variety of professional and personal pursuits. The life experiences, culture, and academic backgrounds of qualified applicants are diverse, but all possess the ability to become future leaders in academic veterinary medicine and the biomedical sciences at large. More information is found: [http://www.vet.cornell.edu/OGE/Leadership/](http://www.vet.cornell.edu/OGE/Leadership/)

3. The 2nd and 3rd Rotations

The second rotation should be done during school year beginning after block 1 or during the Distribution Course period. This rotation may last several months because you won’t have as much time per week to dedicate to research as during a summer rotation. The 3rd rotation should be completed before beginning the 2nd year of the DVM program.
Appendix B: Expectations for Graduate Studies at Cornell

Student Learning Objectives:
Upon completion of a PhD, students should be able to:
1. Make an original and substantial contribution to the field.
2. Demonstrate in-depth knowledge of one area of expertise.
3. Demonstrate a broad knowledge of theory and research across several sub-disciplines in the field.
4. Learn and follow ethical guidelines for working in the field.
5. Write and speak effectively to professional and lay audiences about issues in the field.

Progress Assessment:

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Timeframe</th>
<th>Reporting Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Rotations</td>
<td>Yearly</td>
<td>Annual Progress Report</td>
</tr>
<tr>
<td>Coursework</td>
<td>Yearly</td>
<td>Annual Progress Report</td>
</tr>
<tr>
<td>Successfully complete the responsible conduct of research course and all associated training</td>
<td>Yearly</td>
<td>Annual Progress Report and on the A-Exam Results Form</td>
</tr>
<tr>
<td>A-Exam: post submission of research proposal to Special Committee</td>
<td>Track 1: 2nd Year</td>
<td>A-Exam Results Form; Annual Progress Report to include goals to be completed</td>
</tr>
<tr>
<td></td>
<td>Track 2: 1st Year</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grad School</td>
<td></td>
</tr>
<tr>
<td>External fellowships/grants submitted or awarded</td>
<td>Yearly</td>
<td>Annual CV from students</td>
</tr>
<tr>
<td>Peer-reviewed publications</td>
<td>Yearly</td>
<td>Annual Progress Report to include publications; Annual CV from students</td>
</tr>
<tr>
<td>Conference meetings/presentations</td>
<td>Yearly</td>
<td>Annual CV from students</td>
</tr>
<tr>
<td>Initial job placement</td>
<td>Degree completion</td>
<td>Graduates to complete exit survey to include information about job placement</td>
</tr>
<tr>
<td>Student perspective of the educational training received</td>
<td>Degree Completion</td>
<td>Graduates to complete exit survey</td>
</tr>
</tbody>
</table>
Appendix C. Laboratory Rotation Evaluation Form – from Mentor

Student: 
Professor: 
Dates of rotation: 

1. Please briefly describe the experiment(s) conducted by the student during their rotation.

2. Please evaluate this student based on your observations during the rotation period. Please use a letter grade, A through F, in each category.

<table>
<thead>
<tr>
<th>Originality</th>
<th>Familiarity with literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>Perseverance</td>
</tr>
<tr>
<td>Motivation for research</td>
<td>Proficiency in the laboratory</td>
</tr>
<tr>
<td>Scientific knowledge in the project area</td>
<td>Written communication skills</td>
</tr>
<tr>
<td>General scientific knowledge</td>
<td>Verbal communication skills</td>
</tr>
<tr>
<td>Enjoyment/interest in talking about science</td>
<td>Laboratory citizenship</td>
</tr>
</tbody>
</table>

3. Additional Comments: In particular, please comment on any points about the rotation where the student demonstrated unusual promise, improvement, or where there are areas of concern that you feel may cause problems in the future.

4. Would you be willing to serve as the major professor on this student’s PhD committee and mentor her/him during the student’s dissertation research?

Date of this evaluation: __________________________Signature __________________________

Thank you very much for mentoring this student during their laboratory rotation. Your evaluation and comments will not be shared with the student without your explicit permission. Please return this evaluation to the Office of Graduate Education, Box 38.
Appendix D. Laboratory Rotation Evaluation Form – from Student

Name: ________________________________    Professor: ________________________________

Dates of rotation: From: ________________    To: ________________

1. Please briefly describe the experiment(s) conducted during your rotation.

2. Please evaluate the training that you received during the rotation. Include a brief description of the scientific techniques and skills that you learned.

3. Is the area of research and the scientific approach(es) used in this laboratory consistent with your educational goals? Please explain briefly.

4. Please evaluate the strengths and weaknesses of this laboratory for your PhD dissertation research. Did you discuss potential PhD thesis projects with the Professor?

5. Additional Comments: Please provide any additional comments regarding the rotation and your training experience during this time period.

Date of this evaluation: ___________________    Signature ________________________________

Your evaluation and comments will not be shared/discussed with the rotation mentor without your explicit permission. Please return this evaluation to the Office of Graduate Education, Box 38.
Appendix E. Annual Mentor Report

Dear Dual DVM-PhD Degree Faculty Mentor,

An integral function of the Dual DVM-PhD Degree Program is that the Oversight Committee is able to monitor the students’ success, failures and any issues in the program. Having the faculty mentor’s complete the questions below allows us to be able to more effectively learn the status of our students in the research realm of their program. If you have any questions or concerns, please feel free to contact Dr. Linda Nowak (lmn1@cornell.edu).

Student:  
Thesis Advisor:  

- Please provide a brief narrative summary of the research progress that the student has made in your laboratory during this past year.

- Additional Comments: Please comment on any points about the past year where the student demonstrated unusual promise, improvement, or where there are areas of concern that you feel may cause problems in the future.

- For students who have or are planning to move to the Veterinary Program, have you discussed the plans for future research? If so, please summarize your plans and impressions.

Date of this evaluation: ____________________  
Signature ____________________________________

Your evaluation and comments will not be shared with the student without your explicit permission. Your evaluation and comments will be shared with the Dual Degree Oversight Committee. Please return this evaluation to the Office of Graduate Education, Box 38.
Appendix F. Annual Student Report

Dear Dual DVM-PhD Degree Student,

An integral function of the Dual DVM-PhD Degree Program is that the Oversight Committee is able to monitor the students' success, failures and any issues in the program. Having the students complete the questions below allows us to be able to more effectively learn the status of our students. If you have any questions or concerns, please feel free to contact Dr. Linda Nowak (lmn1@cornell.edu).

Name: ___________________________ Thesis Advisor: ___________________________

Date Began Program: ___________________________

- Please provide a brief summary of the research that you conducted this past year. Please list your successes, along with any concerns that you may have about your research progress.

- Please provide a list of the courses you have taken and grades received this past year (2010-11).

- Please summarize your experience in the Veterinary Program this past year (2010-11).

- Please provide a summary of additional educational activities that you participated in during this past year (i.e. teaching experience, attendance at conference / meetings, etc.)

- Please evaluate your current situation and plans for the next portion of your program. If you are in the Veterinary Program, what are your plans for continuing the research?

- Additional Comments: Please provide any additional comments about your experience in the Dual DVM/PhD Program so far.

Date of this evaluation: ___________________________ Signature ___________________________

Your comments will be shared/discussed with the Dual Degree Oversight Committee. Please return this evaluation to the Office of Graduate Education, Box 38.
First Year. In consultation with the program director and one or two additional members of the dual degree oversight committee, each student should arrange for a research rotation as soon as they have matriculated into the program. This first research rotation should be completed by mid-August prior to entering the DVM curriculum. During that summer, the director will meet with the students, as a group, to discuss strategies for choosing labs for other research rotations and thesis laboratories. In addition, students are expected to meet individually with the Program Director and members of the dual degree oversight committee for an informal discussion of their research interests before they begin DVM classes. Based on this conversation the oversight committee will appoint at least two members of the student’s Advisory Committee.

All DVM-PhD students take courses in the veterinary curriculum during their first year in the program. The second research rotation could begin after Block 1 and should be completed by the end of the Spring semester. This rotation is longer because students will only be able to commit a few hours a week for research while they are in the veterinary curriculum.

Summer of DVM Year 1 (Research): The second summer of research is very important since all DVM-PhD students are required to select their thesis mentor by the end of the summer before they enter their 2nd year of DVM courses. Stipend support for the summer will be arranged by Dr. Gilmour and may be through one of the organized programs (Veterinary Investigator Program (VIP), the Cornell Leadership Program, or another mechanism). Again, students should consult with the Program Director, their Advisory Committee (and other faculty members) and Dr. Robert Gilmour before submitting their rotation selection to either program so that they can ensure a rotation that is worthwhile to the student’s career goals.

Second Academic Year The DVM Program curriculum resumes in mid-August. Again, the DVM-PhD students’ curriculum is similar to that of all Cornell veterinary students, except that each dual degree student will have identified a thesis mentor. It is expected that DVM-PhD students will participate as much as possible in the routine activities of their chosen lab and affiliated department such as lab meetings, work in progress, and research seminars.

Students who follow Track 1 will need to present a transition plan to their Advisory Committee and the Program Director by December 1 of Year 2 (to be reviewed and approved).

- Complete Block 4 (1.5 years of DVM curriculum) and enter graduate school in the Spring semester. In consultation with their thesis mentor, students should begin taking graduate courses related to their field of interest and working on their research project. Students can also take some DVM distribution courses in the Spring semester.
- Form their Special Committee and register it with the Graduate School. A first committee meeting should be held before you start your second semester of graduate school classes.

Special Circumstances: If a student is admitted to the DVM-PhD program during their first year of the DVM curriculum, this deadline may not be achievable, since they are unlikely to have completed more than 2 research rotations. In such case, the student should select a lab to perform a third research rotation during the first two or three months of the Spring semester, at the end of which the student will select a thesis lab. The students should also begin taking graduate classes during that Spring semester. These classes should be selected in consultation with the student’s advisory committee.
The Research Years - typically January of Year 2 to January of Year 5: DVM-PhD students must keep contact with Ms Janna Lamey, Manager of the Office of Graduate Education and Ms Paige Frey, the College Registrar, to ensure they make smooth transitions between the DVM Program and the Graduate School. It is important to note that the administrative mechanics will change to the Graduate School once in the PhD Degree Program and all program requirements must be fulfilled according to the Graduate School. The Program Director must be notified of the choice of thesis laboratory.

Track 1 DVM-PhD students must select their Special Committee (SC) no later than June 1 of their 2nd year in the dual degree program. The function of this committee is to guide you and evaluate your progress. If you are in the Field of Comparative Biomedical Sciences, the Special Committee will have four members; your Special Committee Chair (research advisor), 2 minor members and 1 Field – Appointed Member. It is required to have a Dual DVM-PhD Degree Program Oversight Committee Member to serve on each DVM-PhD degree committee, usually as the Field Appointed member. Please contact the Program Director so that he/she can work with the Director of Graduate Studies to select the most appropriate member of the oversight committee. The Committee should meet at least once in every twelve-month period, usually during the months of May or June, and the results of the meeting must be sent to Ms Janna Lamey and the Dual Degree Program Director.

The A-exam will be completed before the end of year three and the research will be completed during year five, before returning to the veterinary curriculum. Any extension of this schedule will require the approval of the DDOC and the DVM Curriculum Committee. Since reentry into the DVM program can only occur at a specific time during an academic year, it is mandatory that the student be in constant communication with the Program Director and the Office of Graduate Education if additional time is needed.

According to a new policy approved by the CVM faculty in 2009, if a student in good standing is not ready to return to the DVM program after 3 years of thesis research, and they have sufficient evidence that they will be able to finish their research in a 4th year, they may petition the Oversight Committee and the DVM Curriculum Committee for a 1-year extension of their thesis research period. If they fail to do this in a timely way, they must return to the DVM class. Failing to petition, or return to the DVM class will require reapplication for admission to the DVM program.

DVM-PhD students are on an accelerated track when they enter their research years, and it is advised that the Special Committee be convened as soon as possible after the Committee members have been selected. This way, the student, his/her advisor and the Committee members can discuss the plans for the thesis research and any other issues that might be relevant.

Students are responsible for scheduling their Committee meetings. It is the policy of the DVM-PhD Program that a student who fails to convene his/her Committee annual meeting by September 30th of the academic year will be considered to be in poor academic standing, unless they have received explicit permission to have the meeting at a later date. All students are strongly encouraged to make sure that their Committee meets in a timely manner, and that the reports are submitted to meet this deadline. Given the difficulties associated with coordinating the calendars of very busy people, students are advised to begin scheduling the Committee several months in advance of the meeting – and to send out reminders.
Research proceeds at an unpredictable pace, which often is slower than students expect; but students tend to be optimists. The Committee meetings therefore are important, as they provide for periodic assessments of the rate of progress – by people outside the laboratory. The meeting at the end of Year 4, after two years of laboratory research is particularly important in this respect because the overall scope of the thesis research should begin to materialize at this time. If the student, or his/her Committee, is concerned about the rate of progress, it is advised that the Committee meetings be scheduled twice a year, so that the rate of progress can be monitored more closely. The decision whether the student can defend his/her thesis in Year 6 usually is made in the meeting at the end of Year 5. If a student is concerned about his/her progress, the Program Director should be invited to that meeting. In any case, if it is decided to wait a year, the Program Office must be informed and the Committee meetings scheduled twice a year so as to closely monitor the student’s progress.

Students may propose changes in the Committee composition as their research interests evolve. Any such changes must be approved by the Graduate School.

RETURN TO THE DVM PROGRAM – JANUARY OF YEAR 5 – MAY OF YEAR 7
Track 1 Students are expected to have completed their thesis research if not their thesis document before returning to the DVM curriculum. The summer following the end of the 2nd year of the veterinary curriculum is available to finish writing the thesis and take the B-exam. Remember, Track 1 students may take a few DVM Distribution Courses during the 3 years they are in graduate school. This is important because some of these courses are preparatory for Block Va. This is also important to maintain the integration of the veterinary and graduate research curriculum.
Appendix H. Expanded Outline of Track 2 Program

**Summer**
- Summer Research Rotation #1

**Fall**
- I. The Animal Body: General Path.
- II. Cell Biology and Genetics: Neuroanatomy
- Vlb. Ethics & An. Care: Hpr. Function and Dysfunction
- Vlsc. Physical Exam: Distribution Courses

**Spring**
- Rotation #2 completed during this time
- Distribution Courses: Vltc. Clinical Skills I
- Vltc. Clinical Skills II

**Yr. 1**
- Summer Research Rotation #3
- Directive or Internship Lab

**Yr. 2**
- Vltc. Clinical Skills II
- Vlb. Animal Health and Disease
- Vlf. Prof. Dev./Practice Mgt.

**Yr. 3**
- Vacation, elective introductory clinical rotations, summer programs
- Clinical Rotations

**Yr. 4**
- Clinical Rotations
- Clinical Rotations
- Clinical Rotations
- 8 weeks External rotations, specialty rotations, distribution courses

**Yr. 5**
- Graduate School

**Yr. 6**
- Graduate School

**Yr. 7**
- Graduate School

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**First Year.** In consultation with the program director and one or two additional members of the dual degree oversight committee, each student should arrange for a research rotation as soon as they have matriculated into the program. This first research rotation should be completed by mid-August prior to entering the DVM curriculum. During that summer, the director will meet with the students, as a group, to discuss strategies for choosing labs for other research rotations and thesis laboratories. In addition, students are expected to meet individually with the Program Director and members of the dual degree oversight committee for an informal discussion of their research interests before they begin DVM classes. Based on this conversation the oversight committee will appoint at least two members of the student’s Advisory Committee.

All DVM-PhD students take courses in the veterinary curriculum during their first year in the program. The second research rotation could begin after Block 1 and should be completed by the end of the Spring semester. This rotation is longer because students will only be able to commit a few hours a week for research while they are in the veterinary curriculum. A stipend for this rotation will be covered by the College of Veterinary Medicine.

**Summer of DVM Year 1 (Research):** The second summer of research is very important since all DVM-PhD students are required to select their thesis mentor by the end of the summer before they enter their 2nd year of DVM courses. Stipend support for the summer will be arranged by Dr. Gilmour and may be through one of the organized programs (Veterinary Investigator Program (VIP), the Cornell Leadership Program, or another mechanism). Again, students should consult with the Program Director, their Advisory Committee (and other faculty members) and Dr. Robert Gilmour before submitting their rotation selection to either program so that they can ensure a rotation that is worthwhile to the student’s career goals.

**Second Academic Year** The DVM Program curriculum resumes in mid-August. Again, the DVM-PhD students’ curriculum is similar to that of all Cornell veterinary students, except that each dual degree student will have identified a thesis mentor. Since students following Track 2 will not be permitted to form a Special Committee until they enter graduate school, they will instead rely on their Advisory Committee for program guidance during their years in the DVM curriculum.

The decision that a student will follow Track 2, rather than Track 1 is made in consultation with the research mentor and the DDOC. The research mentor, and the student must notify the Program Director of this choice in writing by December of their second year in the DVM program. In Special circumstances, such as may occur if the student is accepted to the DVM-PhD program in their 2nd year of the DVM curriculum, and they will not have completed 3 laboratory rotations, they must be in close communication with the dual degree Program Director and their Advisory Committee. The Track 2 timeline is a bit more forgiving, but remember, only certain mentors are prepared to accept students in the Track 2 program.

Although a Track 2 student will complete the DVM curriculum in the 4 years before they may officially register as a graduate student, being in the DVM curriculum does NOT mean these dual degree students have "free-time". All DVM-PhD students are expected to develop a close working relationship with members of their lab, and to work in the lab to develop their research project all throughout the time they are in vet school. It is also expected that DVM-PhD students will participate as much as possible in the routine activities of their chosen lab and affiliated department such as lab meetings, work in progress, and research seminars.
Many dual degree students carve out time during Distribution blocks to maintain their research effort. However, during Clinical Rotations you are expected to be fully engaged in your clinical training. During this period, your research advisor must still be kept informed of your activities. If you have developed a good working relationship with your mentor prior to your entering the clinics, communication should be natural. While research mentors are typically disappointed that you are otherwise engaged, your continuing interest in the work in their laboratory is appreciated, even if you cannot spend time doing research during your clinical training.

The Research Years – Fifth – Seventh Academic year. Track 2 students will finish their DVM degree in May and must arrange to meet with their research mentor a few months earlier to plan their transition back to the lab. It is also a time to have regular contact with the DVM-PhD Program Director and their Advisory Committee. It is important to note that the administrative mechanics will change to the policies of the Graduate School once in the DVM Program requirements have been met. The following checklist should be kept in mind:

- The Program Director and Office of Graduate Education must be notified of the choice of thesis laboratory prior to the start of the 2nd year in the DVM program.
- Track 2 students should select their Special Committee (SC) no later than June 1 of Year 5. These committee members provide an important component to your graduate education. Their function is to guide you and evaluate your progress as a graduate student. If your graduate affiliation is the Field of Comparative Biomedical Sciences (CBS), the Special Committee will have four members including your Special Committee Chair, 2 minor members and 1 Field –Appointed Member.
- Preparation for the A-exam should be foremost on your mind as you join your thesis lab. You will be expected to complete any missing course work, prepare your research proposal and have your A-exam in your 1st year in the graduate program. To do this it is essential that you have a Special Committee.
- It is required to have a DVM-PhD Program Oversight Committee Member, other than the Chair of your committee as a member of your Special Committee.
- A first committee meeting should be held before classes start in the Fall semester. Students are responsible for scheduling their Committee meetings.
- The Committee should meet at least once in every twelve-month period, usually during the months of May or June.

It is the policy of the DVM-PhD Program that a student who fails to convene his/her Committee annual meeting by September 30th of the academic year will be considered to be in poor academic standing – unless they have received explicit permission to have the meeting at a later date. Consequently, the student will not receive a stipend check until their Committee meeting has been held and the committee reports have been submitted to the Office of Graduate Education. The Program Director receives copies of the Committee reports. All students are strongly encouraged to make sure that their Committee meets in a timely manner, and that the reports are submitted to meet this deadline. Given the difficulties associated with coordinating the calendars of very busy people, students are advised to begin scheduling the Committee several months in advance of the meeting – and to send out reminders.

Students may propose changes in the Committee composition as their research interests evolve. Any such changes may be approved by the Graduate School.
Appendix I. Graduate Courses

Independent of the graduate field you are associated with, you must fulfill requirements for two minors. A minor represents a program of study that mirrors an existing graduate Field at Cornell. Keep in mind your goal is to maximize your own education and to become proficient in two areas related to your future project and interests. When you decide on a lab, you will recruit two faculty members to serve on your special committee, whose job is to represent your two minor areas. Examples of minors include Genomics, Pharmacology, Immunology, Biochemistry, Microbiology, Development, Physiology, Genetics, Nutrition. Generally, a minor requires the student to take 4-8 credits, or 2-3 classes. More information can be found on each Field web site.

In addition, during your first year in graduate school you will take BioAP6100 – By Experimental Design; Survival skills for graduate students. You will also have to take an Ethics course at some point in your graduate career. There is only one option right now: BioMG7510 - Ethical Issues and Professional Responsibilities. A course in Clinical Biostatistics (VTPMD 7070) is also recommended as a good introduction to experimental design, data analysis, and interpretation.
Appendix J. Advice on Preparing Petitions

There are two times during your program that you may be asked to prepare formal petitions. Here are the procedures and tips in order to prepare a successful petition.

1. Research for DVM Course Credit
   DVM students may register for research in the Distribution block periods, for up to 4 credits per year for a total of 15 credits. In 2010, the Curriculum Committee voted that all DVM students have the right to earn Distribution Course credits for research activity. For DVM-PhD students, this opportunity is most useful in their 2nd year of the DVM program when they are seeking to complete their 3rd lab rotation. Students following Track 2 will also find this option useful in their 3rd year of the DVM program when they are beginning to establish their research project.
   The appropriate form can be obtained from the College Registrar, Ms. Paige Frey. You will need to provide a brief description of your research objectives and you will need the signature of a faculty member in the College of Veterinary Medicine. If your research will be done in the laboratory of someone who is not on the College faculty, you should request that one of the members of your Advisory or Special Committees sign the form. Please be aware, the person signing the form is responsible for your grade, even if the is an S/U. You must meet with them to discuss your research on whatever schedule they suggest or you may not receive credit for your work.

2. Extension of Thesis Research Period
   The goal for completing the DVM-PhD training is seven years. To accomplish this, students in Track 1 take a 3 year leave from the DVM program to do their thesis research before returning to the DVM curriculum in Block Va. We recognize that each student’s training program will be unique, and that it is difficult to predict the rate of progress. Students therefore are encouraged to consult with their research mentor and the DVM-PhD Program Director regarding any difficulties that they may encounter that are likely to affect their progress through the Program.

   According to a policy approved by the CVM faculty in 2009, if a Track 1 student in good standing is not ready to return to the DVM program after 3 years of thesis research, and they have sufficient evidence that they will be able to finish their research in a 4th year, they may petition the Oversight Committee and the DVM Curriculum Committee for a 1-year extension of their thesis research period. If they fail to do this in a timely way, they must return to the DVM class. Failing to petition, or return to the DVM class will require reapplication for admission to the DVM program.

   Procedures:
   Please anticipate that this process can take up to 6 months in length. Please be sure to submit your petition to the DDOC at least 6 months prior to the return of the DVM curriculum.
   - Student submits petition to the DDOC. Items to include in the petition:
     o Summary of current research project.
     o Future plans for next 1 year of research (including timetable).
     o Address how veterinary skills will be maintained during this period.
     o Student includes letter of support from Special Committee Chair.
     o Please seek advice from your Dual Degree Oversight Committee Member on your committee while preparing this document.
   - Student submits petition to the Dual Degree Oversight Committee for review and their vote.
     o Student will receive communication from the DDOC.
   - If approved, DDOC will inform the DVM Curriculum Committee of their endorsement and ask them to review and vote on the petition as well.
   - Both the DDOC and DVM Curriculum Committee need to approve the petition.
Appendix K. Expanded Information on Clinical Rotations

1. Equine, Farm Animal, and Companion Animal Hospitals
The Equine, Farm Animal, and Companion Animal Hospitals provide primary care and clinical specialty medicine for animals that are brought to the (CUHA). Clinical specialty departments include: surgery, medicine, ophthalmology, dermatology, cardiology, neurology, phenomenology, dentistry, anesthesiology, and radiology (including diagnostic ultrasound, CT scan, and nuclear medicine services). The Companion Animal Hospital (CAH) also contains a student-run Wildlife Clinic and the Community Practice Service (CPS).

2. Equine Neonatal Intensive Care Unit (ENICU)
The ENICU is staffed in the springtime by students who are enrolled in the distribution class VTMED 657, Diseases of Large Animal Neonates. The class is open to 1st- through 4th-year students and one of the requirements is that each student must sign up for ten "on-call" shifts. These are four-hour periods during the night and on weekends. If there is a critically ill foal in the ENICU during the student's shift, he or she comes in to monitor it. Duties include checking IV fluids, taking vital signs, performing physical therapy and milking the mare.

3. Ambulatory Clinic
Students accompany ambulatory clinicians on calls and learn the skills and procedures necessary for operation of a modern veterinary practice. The CUHA has seven specially equipped field vehicles that provide veterinary service for dairy cattle, horses, sheep, goats, and swine at approximately 400 farms and stables in the surrounding area. This is an excellent way to experience large animal medicine first-hand. Weekday volunteer hours may be credited for a distribution class. Reproductive evaluations (including pregnancy and fertility examinations), nutritional evaluation, and disease prevention are stressed. Herd health programs also include vaccinations, parasite control, mastitis prevention, castration and dehorning. In addition, students participate in diagnosis and medical or surgical treatment of ill or injured animals.

4. Anesthesiology
This rotation is designed to provide clinical experience in the use of anesthetics in small companion animals, horses, and some food animals. The students participate in selecting suitable anesthetic techniques for patients in the CUHA and then implement those techniques under the supervision of faculty and residents. The program includes both large and small animal anesthesiology. The objectives of the program are to provide training in all aspects of veterinary anesthesiology.

5. Cardiology Service
The purpose of the cardiology rotation is to provide students with the opportunity to put into practice what they have learned in the foundation years. The management of the most common cardiac diseases is emphasized including congestive heart failure, arrhythmias, and secondary cardiac diseases. All species are examined, large and small, although the majority are small animals. Diagnostics, including cardiovascular physical examination, electrocardiography, radiography, and echocardiography, are taught. The rotation includes clinical work, didactic teaching, and self-initiated digging for information.

6. Clinical Oncology
Management and prevention of cancer in companion animals represents a significant component of the practice of veterinary medicine. The focus of this clinical rotation is the development of a comprehensive set of skills necessary for a veterinarian to become an advocate for the client/patient with cancer. These skills include appropriate initial evaluation of animals with cancer, sensitive and effective client and referring veterinarian communication, ability to access relevant information from numerous sources related to cancer management, understand and apply principles of surgical, medical, and radiation oncology as well as techniques specifically related to minimize pain and treatment-related effects in cancer patients.

7. Ophthalmology
This course combines clinical experience with beginning skills in diagnostic ophthalmology. Students learn how to apply the ophthalmic diagnostic tests. A competent ocular examination is the goal of this rotation. Confidence in using direct and indirect ophthalmoscopes, slit lamps, tonometers, goniolenses, conjunctival cytology, and surgery comes with the practice provided by this rotation. Students are required to review the introductory orientation videotapes in the Autotutorial Center titled Ocular Examination I and II before the start of the rotation. This rotation provides surgical experience and consultations. A high percentage of the consultations are referral cases that usually challenge the service. Adequate routine case material is presented to prepare most students for practice.

8. Pathology
This course involves the hands-on diagnostic necropsies of most mammalian species that are presented to the pathology necropsy room and of avian species that are admitted to the avian and aquatic animal medicine necropsy room. Students work in groups of three to five for the two-week rotation. Necropsies are performed under the guidance of pathology faculty and residents. Students prepare written reports of necropsies performed, review microscopic hematology and cytology slides, perform urinalyses, and discuss case studies.

9. Radiology
A two-week clinical experience in the Imaging Section is provided. Students use radiographic, CT, ultrasonographic, and nuclear medicine imaging techniques to evaluate animal patients under treatment in the Hospital. Students obtain and interpret radiographic and ultrasonographic studies with guidance from radiology faculty and technical staff. Two 3-hour laboratory sessions are given to allow hands-on experience in patient positioning and radiographic technique. An autotutorial teaching film file is used to familiarize students with radiographic examples of common diseases of large and small animal species. Small-group discussions are scheduled to present and discuss current cases. The safe use of x-ray producing equipment and radioisotopes is discussed.

10. Wildlife Clinic
This course introduces students to primary medical care of nontraditional pet species, zoo animals, and native wildlife. Students, directly supervised by the attending clinician, are responsible for the assessment, physical examination, and medical management of exotic animal species presented to the CUHA. Other opportunities available to assist in the development of clinical skills in wildlife, zoo and exotic animal medicine include the wildlife clinic cases, ongoing wildlife research and service projects, and trips to the Rosamond Gifford Zoo. Successful completion of the course requires satisfactory performance during this 14-day clinical rotation. The clinic, a component of the Wildlife Health Program, is staffed by veterinary students under the supervision of Dr. Noha Abou-Madi and Dr. George Kollias. The clinic provides care for injured wild reptiles, mammals and birds (ranging from
songbirds to raptors). Wildlife rehabilitators and local people who find sick or injured animals bring them to the clinic where they are treated until ready for rehabilitation and release. The CUHA Non-Domestic Pet Clinic receives approximately 500 cases of commonly kept birds, mammals, reptiles and amphibians and the Native Wildlife Clinic receives approximately 400 cases native to New York State.

11. Large Animal Medicine and Surgery
Large Animal Medicine and Surgery consists of training in large animal internal and surgical medicine in Equine/Farm Animal Hospitals. Students assigned to this service assist the faculty and house staff of the Large Animal Medicine service in the diagnosis and care of patients. The objectives are to provide a high level of clinical experience in the fields of large animal internal and surgical medicine, to provide training toward a high level of veterinary medical service to the public and to the veterinary profession. Students are to acquire knowledge and skills in history taking, physical examination, election and completion of appropriate ancillary tests, diagnosis, treatment, and patient care. In addition, students are exposed for two weeks to clinical procedures in large animal theriogenology.

The Small Animal Medicine Service is structured to provide supervised clinical experience in the practice of companion small animal medicine and surgery. Under direct staff supervision, students anesthetize and perform surgical procedures on patients presented to the Small Animal Clinic for neutering and minor elective procedures. Students are responsible for all aspects of patient care during their hospital stay and are expected to fully participate in client communications. The course is conducted in the Small Animal Clinic. Students interact directly with clients presenting their pets for primary or referral medical care and participate in the diagnostic techniques; planning of therapy; daily care of dogs, cats, and exotic species; and are responsible for patients undergoing elective ovariohysterectomy or castration under the direction of a faculty veterinarian. The students are expected to formulate and carry out plans for the diagnostic evaluation and medical management of these patients.

13. Community Practice Service (CPS)
CPS provides routine health care, medical management, emergency treatment, and select surgical procedures for dogs, cats and avian/exotic patients. All students are encouraged to participate in CPS on a regular basis. This is a great opportunity to build confidence talking with clients, taking histories, performing physical exams and analyzing basic lab tests such as fecals and skin scrapings. Volunteer hours may be credited to a distribution elective.
Appendix L. Professional Conduct

As DVM-PhD students you are entering a profession, and you will from your first day in the Program be regarded as junior members of that profession. You should behave accordingly. The term Professional Conduct has many implications and all students should familiarize themselves with the Cornell Code of Academic Integrity and the Honor Code of the DVM Program.

The aim of the Code is to foster an atmosphere of academic and professional integrity, in which each individual accepts responsibility for his/her behavior. The Code establishes norms that will guide you as you struggle with the, at times difficult, moral and ethical questions that will arise in your career as a biomedical investigator. The nature of the questions that arise will change over time, as will your own appreciation of the issues involved; but the basic principles will remain invariant.

Some norms are self-evident, such as the absolute prohibition against plagiarism and other scientific misconduct. Other norms are more subtle, such as those pertaining to your interactions with your colleagues, advisors and other faculty, and eventually your patients. This involves three related issues: how you behave, how you communicate, and how you treat the information you receive.

You are in training to become a clinician-scientist, which means that you will have clinical responsibilities – at least while you are completing your clinical training in the Professional Program. You will be responsible for your patients’ lives and well-being, which means that you must have the competencies needed to practice your chosen profession. You also have special responsibilities in terms of how you behave toward your patients – you show compassion and respect. Your interactions with colleagues and faculty should be at the same high level.

Science progresses because scientists exchange information, and it is important that you communicate accurately, effectively and with appropriate consideration for the people you communicate with. This requirement goes beyond the mere exchange of scientific information; it applies to all your professional interactions – including those pertaining to your medical education and clinical activities – from your first day in the Program.

You will be the beneficiary of confidential information: fellow students will discuss their newest results and you will exchange information about different laboratories; at lab meetings you learn about your colleagues’ exciting results; you read their grant applications and manuscripts; and you will be given manuscripts to review for journals. Some of the information that comes your way can be disseminated freely; but much of the information is privileged, meaning that it can be disseminated only with the explicit approval of the individuals who gave you the information. If you are in doubt whether some information is privileged, you should assume it to be so until you have permission to discuss it with others. Breaches of confidentiality are serious violations of professional conduct. You need to use your judgment – at all times!

This combination of competency, honesty and confidentiality is the hallmark of professional integrity.

Finally, as DVM-PhD student you have many privileges. These privileges are not entitlements; you have to earn them – by performing at a consistently high level. Noblesse oblige!