

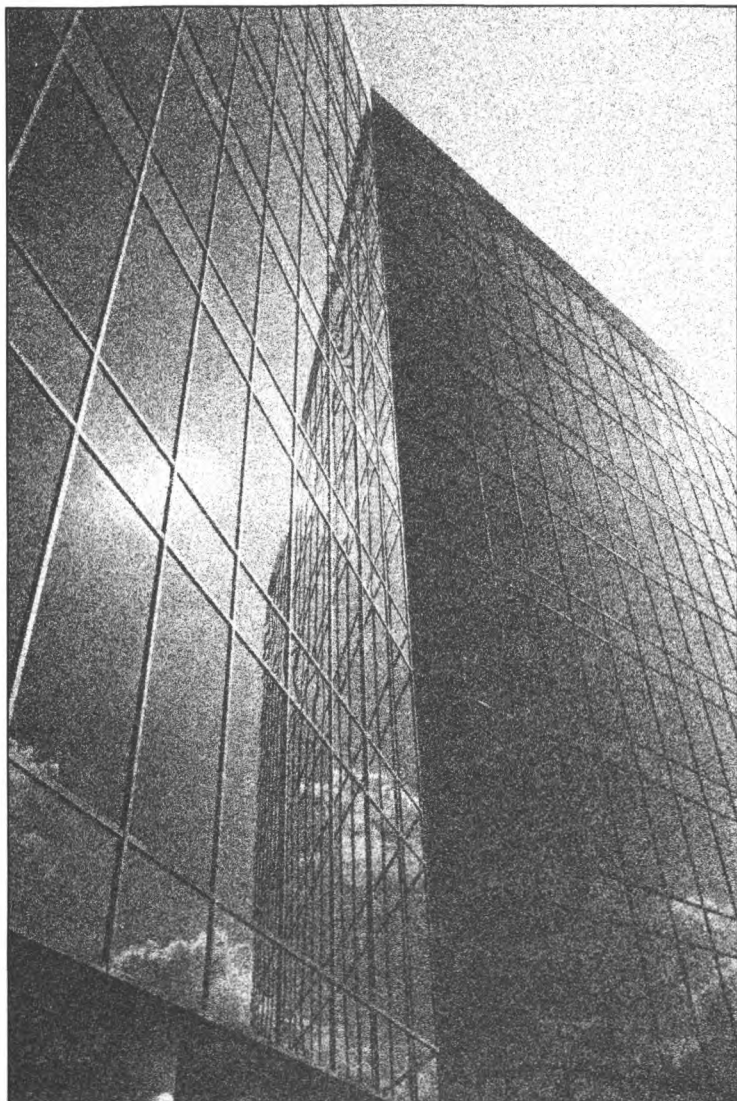


*CORNELL UNIVERSITY  
ANNOUNCEMENTS  
NEW YORK STATE  
COLLEGE OF  
VETERINARY MEDICINE*

**Cornell University Announcements**  
**(ISSN 0744-4605)**

Volume 77 of the Cornell University Announcements consists of nine catalogs, of which this is number eight, dated July 26, 1985. Issued twice in March, once in June, five times in July, and once in September. Published by the Office of University Publications, East Hill Plaza, Ithaca, New York 14850-2805. Second-class postage paid at Ithaca, New York.

*Postmaster:* Send address changes to the New York State College of Veterinary Medicine, Cornell University, C-117 Schurman Hall, Ithaca, New York 14853-6401.



**CORNELL UNIVERSITY**  
**NEW YORK STATE**  
**COLLEGE OF**  
**VETERINARY MEDICINE**  
**1985-86**

*A Statutory College of the State University  
at Cornell University, Ithaca, New York*

## Cornell Academic Calendar 1985-86

### Fall Semester

Registration begins	Tuesday, August 27
Registration ends	Wednesday, August 28
Instruction begins	Thursday, August 29
Fall recess begins	Saturday, October 19, 1:10 p.m.
Instruction resumes	Wednesday, October 23, 7:30 a.m.
Thanksgiving recess begins	Wednesday, November 27, 1:10 p.m.
Instruction resumes	Monday, December 2, 7:30 a.m.
Instruction ends	Saturday, December 7
Study period begins	Monday, December 9
Study period ends	Wednesday, December 11
Final examinations begin	Thursday, December 12
Final examinations end	Saturday, December 21

### Spring Semester

Registration begins	Thursday, January 23
Registration ends	Friday, January 24
Instruction begins	Monday, January 27
Spring recess begins	Saturday, March 22, 1:10 p.m.
Instruction resumes	Monday, March 31, 7:30 a.m.
Instruction ends	Saturday, May 10
Study period begins	Sunday, May 11
Study period ends	Wednesday, May 14
Final examinations begin	Thursday, May 15
Final examinations end	Saturday, May 24
Commencement	Sunday, June 1

This calendar is subject to modification and is not legally binding.

In enacting this calendar, the University has scheduled classes on religious holidays. It is the intent of the University that students missing classes due to the observance of religious holidays be given ample opportunity to make up work.



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*Dr. Robert M. Lewis, professor and chairman of the Department of Pathology*



## THE COLLEGE OF VETERINARY MEDICINE

**F**rom the very beginning of the University, with the issuance of a charter in 1865, the founder, Ezra Cornell, insisted that a chair of veterinary medicine be established. His experience as an owner of purebred livestock had taught him the importance of animal health, and he instructed Andrew D. White, the first president, to seek out the best-qualified man to teach courses in veterinary medicine and surgery. It was the first time that veterinary science had been granted equal rank with other sciences in an American university.

President White secured the services of James Law, and the appointment was confirmed on August 4, 1868, by the Board of Trustees. A young, well-educated Scotsman, Law had graduated from the Edinburgh Veterinary College, studied under the great teachers of the day (William Turner in human anatomy and Joseph Lister in the principles and practices of surgery), and attended veterinary schools on the Continent. He had also taught at the New Veterinary College in Edinburgh and the Albert Veterinary College in London.

When classes began on October 7, 1868, Dr. Law's office was on the second floor of Morrill Hall, the first University building to be completed. During

the academic year 1869-70 a fairly complete course in veterinary medicine was taught by Professor Law to a class of about twenty. Of this group, four were graduated after four years of study with the Cornell degree of Bachelor of Veterinary Science. Three of these continued in the profession and became nationally distinguished through their accomplishments in disease control.

It was not until March 21, 1894, that the New York State Veterinary College was established at Cornell. It was the first contract college (later to be known as a statutory college) at Cornell, thereby setting the stage for a long and effective arrangement between the state and the University. A veterinary building (named James Law Hall some years later) was provided by the state, and the doors were opened for classes in the autumn of 1896. The school was composed of six faculty members of professorial rank, two instructors, and eleven students. Scholastic requirement for entrance was a high school diploma or its equivalent, a rather high standard for those days.

The early faculty recognized the importance of a good library and set this goal as one of their priorities. Governor Roswell P. Flower made a personal donation in 1897 to the library that now



*Dr. Robert D. Phemister, dean*





*James A. Baker Institute for Animal Health, located on Snyder Hill, 1½ miles from the main campus*

bears his name and houses an impressive collection of veterinary resource materials.

The college remained at the original site (at the southeast corner of East Avenue and Tower Road) until the summer of 1957. The present site of the college was occupied in July 1957. Its facilities occupy about twenty acres, with ancillary facilities on Snyder Hill and elsewhere. The latest additions are the ten-story Veterinary Research Tower, dedicated June 27, 1974, and the Diagnostic Laboratory, dedicated October 17, 1978. Expansion is a continuing process at the college as it seeks to provide practitioners, scientists, and teachers for the future welfare of animals and man.

The teaching, research, and service functions of the college are recognized as among the best in the world. Each supports the others and contributes to the vitality of the program as a whole. A staff of more than 825 now support the college's programs. The college's instructional activities include the professional degree (D.V.M.) program for 320 men and women; graduate programs leading to a master's or Ph.D. degree in the fields of veterinary medicine, immunology, physiology, or pathology for another 80 students; and intern and residency

programs in the Department of Pathology and the Department of Clinical Sciences that train about 30 D.V.M.'s for advanced work in the clinical services.

The faculty of the college have an international reputation for research in animal and human health. Current research includes leukemia, atherosclerosis, diabetes, genetic disorders, immunology of aging, hepatitis, cancer, and inheritance of disease resistance. In the past year, the faculty attracted more than \$21 million in grants and contracts to the college.



*Dr. Sydney Moise, assistant professor of medicine*



# **ADMISSION TO THE D.V.M. PROGRAM**

## **Admission Policy**

The Faculty Committee on Admissions endeavors to select the best-qualified applicants, who, in its judgment, will be most able to successfully complete the veterinary medical curriculum and become competent, responsible veterinarians. Class size is limited to eighty students, and each year there are many more qualified applicants than the college is able to accommodate. Although the largest percentage of students admitted are residents of New York State, a limited number of well-qualified out-of-state applicants are also accepted. Applicants who feel their qualifications are outstanding are encouraged to apply regardless of residency.

It is the policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age, or handicap. The University is committed to the maintenance of affirmative action programs which assure the continuation of such equality of opportunity.

## **Selection Criteria**

In conducting its evaluation the committee is guided by the following criteria for determining the best qualified of many qualified applicants. No single criterion dominates, since the faculty members look at the whole person.

### **Academic Achievement and Aptitude**

The need for learning large amounts of factual material means that successful applicants must have demonstrated achievement and potential for comprehension of scientific materials and an ability to solve complex problems. This ability is evaluated by examination of the applicant's grades in prerequisite courses, by examination of all college-level courses taken, and by consideration of the Graduate Record Examinations scores.

### **Quality of the Preparatory Program**

Since the curriculum leading to the Doctor of Veterinary Medicine (D.V.M.) degree is academically rigorous, the committee takes into consideration the quality of the academic program presented by the applicant for admission. Such factors as the variety and balance of courses taken,



the difficulty of courses selected, and the ability to carry a heavy academic course load at a demanding institution are taken into account. Ideally, the applicant should have achieved excellence in a broad range of physical and biological sciences, social sciences, and the humanities. As no preference is given to applicants majoring in any particular field, the choice of a major is left to the individual and should be determined by the applicant's alternative career goals. Experience in teaching or research in basic sciences or areas indirectly related to human or veterinary medicine is considered in the evaluation.

### **Experience, Knowledge, and Achievement in Matters Relating to Animals and the Veterinary Profession**

Veterinary medicine is an animal-oriented profession. Therefore an applicant's experience in working with animals and an understanding of the veterinary profession are viewed by the admissions committee as important considerations in the selection process. Such experience could involve breeding, rearing, feeding, and showing various kinds of animals, including companion animals, livestock, laboratory animals, zoo animals, or wildlife.

The applicant should be prepared to present evidence of hands-on experience with animals and sufficient contact with the veterinary profession to enable the admissions committee to determine that the applicant has some understanding of the duties and responsibilities of a practitioner and the scope of veterinary medicine.

### **Experience, Knowledge, and Achievement in Activities Unrelated to Veterinary Medicine**

The well-rounded applicant can demonstrate significant achievements outside of academic and veterinary-oriented activities. Therefore the committee evaluates the depth and breadth of accomplishment in extracurricular activities, community services, hobbies, and nonacademic interests of all kinds.

### **Personal Characteristics**

The committee endeavors to select applicants of integrity, reliability, maturity, and determination. It is important that professionals possess excellent oral and written communication skills, poise, leadership ability, and a talent for getting along with others.

## Academic Preparation

Admission to the New York State College of Veterinary Medicine normally requires a minimum of three years' preparation in an accredited college or university. This preparation does not have to be completed in a specialized college or in a designated preveterinary program. Potential applicants should enroll in an undergraduate institution with a reputation for academic excellence that offers the prerequisite courses as part of an accredited baccalaureate program. Because of the limitations in class size and the competition for admission, every applicant should make plans for an alternative career. The best preparation for the study of veterinary medicine is to fulfill all entrance requirements while attaining a well-rounded college education that includes preparation for an alternative career and completion of prerequisite courses.

The minimum course requirements for admission are shown in the following table:

	<i>Semester Credits</i>	<i>Quarter Credits</i>
English composition*	6	9
Biology or zoology (with laboratory)	6	9
Inorganic chemistry (with laboratory)	6	9
Organic chemistry (with laboratory)	6	9
Biochemistry	4	6
Physics (with laboratory)	6	9
General microbiology (with laboratory)	3	4.5

\*One-half of this requirement may be satisfied with an oral communication course.

All prerequisite courses, with the possible exception of microbiology and biochemistry, must be completed and documented with a letter grade at the time of application. A letter grade of C- or better is considered satisfactory in a prerequisite course.

Evidence of satisfactory completion of all prerequisite courses must be presented by August 1, before matriculation.

Applicants must present evidence of sound training in biology, physics, and chemistry, including an upper-level biochemistry course that requires organic chemistry as a prerequisite. This should be a complete course in general biochemistry. Half of a two-semester sequence does not provide a balanced background. A total of sixteen semester credits (twenty-four quarter credits) of chemistry is required. Some latitude is acceptable with respect to the distribution of credits within this total. If a course substitution is requested, the applicant should submit to the Office of Student Affairs and Admissions a current, detailed course description that discusses the text used, course objectives, materials covered, and credits offered.

The microbiology prerequisite must include an introduction to the major groups and natural distribution of microorganisms, taxonomy, and terminology. Lecture materials should cover size, morphology, and structure of bacteria and fungi; bacterial motility, sporulation, physiology, growth curve, genetics, and multiplication; and bacteriophage. The applicant should have knowledge of sterilization and disinfectants and of environmental mycology and bacteriology with regard to water, soil, foods, milk, sewage, and animal wastes. The microbiology laboratory should develop skills in the use of the microscope in microbiology; in the preparation of smears and in staining procedures for bacteria; in the interpretation of motility; in the use of liquid- and solid-culture media, sterilization, inoculation and streaking techniques, interpretation of mixed growth, and colonial morphology; and in the recognition of staining and morphological characteristics of representative bacteria, counting techniques, dilutions and pipetting of bacterial suspensions, and bacterial counts of water and milk. Recognition and identification of common environmental and saprophytic bacteria and microbiology of skin, milk, water, sewage, and animal wastes must be included in preparatory course work.

Applicants should be proficient in written and spoken English. Deficiencies in fundamental communication skills hamper professional development in a rigorous scientific discipline. Although not required, courses in mathematics and statistics may provide a useful background.

Official transcripts documenting all courses taken must be submitted to the admissions office as part of the application. Prerequisite courses with grades of less than C- will not fulfill the prerequisite requirement for that course but will be included in the computation of the cumulative prerequisite grade-point average along with those courses that have been repeated. The Office of Student Affairs and Admissions, in its evaluation of academic work, will determine which courses may be used to fulfill the prerequisite requirements.

Grades, although not the sole criterion for admission, are considered to be reliable indicators of academic motivation and aptitude. We expect applicants to have a minimum of a 3.0 (on a 4.0 scale) cumulative grade-point average and a minimum of a 3.0 prerequisite grade-point average. Accepted applicants generally have excellent academic records and grade-point averages well above 3.0. Since it is impossible to evaluate honors, pass-fail, or S-U grading systems, it is necessary for the applicant to obtain a letter grade for all the prerequisite courses and to have these grades certified by the registrar at the applicant's undergraduate institution. A limited number of advanced placement credits may be accepted at the discretion of the Faculty Admissions

Committee and the Office of Student Affairs and Admissions if they appear on the official transcript. In such cases, applicants should provide detailed information from the undergraduate college describing the advanced placement policy of that college.

## Application Procedures

Application forms and detailed information can be obtained by writing to the Office of Admissions. Application materials will be ready for distribution in August of the year preceding possible matriculation. The complete application material, application fee, and supporting documents must be submitted to the Office of Student Affairs and Admissions by *October 15*.

### Essay

Each applicant is required to submit an essay that discusses the applicant's motivation for a career in veterinary medicine and how his or her experience with animals and the veterinary profession relates to this motivation. This essay must be typewritten, double-spaced, and no more than three pages long.

### Letters of Evaluation and Recommendation

Forms for these letters are provided in the application packet.

### Employer Evaluations

An employer evaluation form is to be completed by each employer with whom the applicant worked to fulfill the animal experience requirement.

### Adviser Evaluation

A recommendation from the applicant's faculty adviser is required. Evaluations compiled by advisory committees are also acceptable. If the adviser does not know the applicant well enough to write an in-depth evaluation, a supplemental academic evaluation may be submitted *in addition to* the adviser's evaluation. This supplemental academic evaluation should be filled out by a faculty member who is well informed about the applicant's qualifications.

### Personal Letters of Recommendation

Applicants are required to have two letters of recommendation submitted from persons they know well who can cite their specific qualifications. No more than two letters of this type will be considered for either reapplicants or first-time applicants.

## Graduate Record Examinations

The Graduate Record Examinations (GREs) aptitude tests are required of all applicants. The GREs must be taken no later than October of the year before desired matriculation. Scores from examinations taken more than five years before the application deadline will not be considered.

The GREs are administered by the Educational Testing Service, Box 955, Princeton, New Jersey 08540. Results of the examinations will be reported to the college if the institution code R 2549-4, New York State College of Veterinary Medicine, is properly entered on the test forms.

The desirable minimum score for the aptitude portion (verbal and quantitative) is 1200. The advanced biology test or other advanced tests are not required but may be included. The college does not as yet use the results of the analytical portion of the GREs.

## Counseling

Because of the large number of aspiring students, formal individual preapplication counseling sessions normally cannot be granted. The applicant should, however, consult his or her campus health careers adviser, who may be able to offer special counsel.

## Reapplication

If a previously denied applicant desires to reapply, he or she should follow the same process described above with only slight modification. Previous applications are retained for three years after the date of the last application. Reapplication will require new forms, the application fee, and a completely new personal essay as described earlier. This essay must include developments the reapplicant believes have strengthened his or her application. Previous essays will not be reviewed. All personal reports and other documents should be dated and signed.

It is the responsibility of the applicant to ensure that the college is provided with current information to supplement that submitted with any previous application. Reapplicants are not required to retake the GREs, but if that is done, the Faculty Admissions Committee will use whatever combination of scores is higher.

## Advanced Standing

Applicants for admission with advanced standing as members of the second- or third-year class must present educational qualifications and professional accomplishments similar to those expected of students who have completed the previous year's courses here. Unless attending one of the schools or colleges of veterinary medicine accredited by the American Veterinary Medical Association, applicants must satisfactorily pass examinations in



all of the work for which they desire advanced credit. No one will be admitted to any advanced class except at the beginning of the college year in September. The applicant must file a formal application and must be interviewed by the admissions committee and possibly by other faculty members. Places for admission with advanced standing are limited and depend on vacancies occurring in that particular class.

It is imperative that the admissions committee have detailed and translated summaries of veterinary medical academic programs and accomplishments for those seeking advanced placement from schools in foreign countries. Advanced standing applications are normally considered during the summer months before desired matriculation, but applications should be on file and completed as early as possible and not later than April 15.

### **Further Information**

Additional questions about admissions can be directed to the Office of Student Affairs and Admissions, C-117 Schurman Hall, Cornell University, Ithaca, New York 14853-6401.

## **University Requirements**

Applicants accepted for admission are required to pay a registration fee and will be notified of the amount and the due date at the time of acceptance. No refunds will be made to applicants who withdraw after the due date of the fee.

Entering students must also fulfill the health requirements adopted by the Board of Trustees of Cornell University before being allowed to register.

## **Combined Courses**

Through a program of double registration it is possible for D.V.M. students who did their preveterinary work in the College of Agriculture and Life Sciences at Cornell University, and who were accepted after their third year of undergraduate study, to complete their B.S. degree while working on the D.V.M. degree. Students interested in this program should consult their undergraduate faculty advisers.





*A first-year student in the Gross Anatomy class*





# FINANCES

## Tuition and Fees

Tuition and fees for Doctor of Veterinary Medicine degree candidates are \$7,400 a year for New York State residents and \$8,820 a year for nonresidents. Most students in the college do not live in University housing. The cost of room and board in Ithaca for 1985-86 is estimated at \$4,150. Books, instruments, and supplies cost approximately \$600 a year. An additional allowance of \$2,400 should be made for clothing, laundry, local transportation, entertainment, telephone, and incidentals. These estimates are based on standard budget figures provided by the University's Office of Financial Aid for the purpose of allocating funds and budgeting for financial aid. Individual expenditures may exceed these figures, depending on personal preferences in housing, transportation, dining, and so on. The amount, time, and manner of payment of tuition, fees, or other charges may be changed at any time without notice.

Students who want to pay tuition in monthly installments should contact Academic Management Services, Inc., by telephoning 800/556-6684, a toll-free number. Subscribers to the service pay a fee.

*Courses of Study* describes University policies, student services, fee schedules, and payment procedures.

## Refund Policies

Part of the amount personally paid for tuition will be refunded if the student obtains an official certificate of leave of absence or withdrawal at the office of the dean or director of the academic division involved. Students who terminate their registration in the University in this manner during a regular term will be charged tuition from the official University registration day to the effective date of the certificate as follows: first week, 10 percent; second week, 20 percent; third week, 30 percent; fourth week, 40 percent; fifth week, 60 percent; sixth week, 80 percent; seventh week, 100 percent, except that no charge will be made if the effective date is within the first six days of the semester, including registration day.

The University makes available tuition insurance, which provides refunds in event of leave of absence or withdrawal for medical or emotional reasons. Complete details regarding this coverage and applications accompany the August tuition bill.

The \$40 application fee for University residence halls is nonrefundable except when lack of space prevents the offer of a room assignment. The \$100 security deposit, which guarantees a contract for a room in the residence halls, is refundable, less damage charges, upon fulfillment of the contract.

Students participating in a prepaid dining plan who withdraw from the plan during a semester are eligible for a prorated refund based on the number of days the contract was in effect.

## Financial Aid

Information and guidance regarding financial aid for veterinary students is available from the college Office of Financial Aid. A description of the methods, procedures, calendar, resources, and policies can be found in the college publication *Financial Aid*. This brochure is updated annually. Approximately 85 percent of the financial aid available for the coming year will be through self-help loan programs. The college's policy of support is based on the assumption that parents and spouses are willing to help finance the education of their children or spouses to the extent possible.

To standardize procedures and provide uniform criteria for estimating family financial strength, the college uses the Graduate and Professional School Financial Aid Service (GAPSFAS) and federal income tax information. The college Office of Financial Aid conducts individual need analyses, and available aid is recommended accordingly. Financial aid packages prepared by the college Office of Financial Aid may combine loans, employment, and gifts or grants.

A veterinary student who desires financial aid should request a GAPSFAS application form from the college and should complete it by March 1 for aid beginning the following autumn. Applicants interviewed for admission to the first-year class will receive GAPSFAS forms when interviewed.

Application for financial aid does not affect the admissions evaluation process. Residents of New York State who qualify for Tuition Assistance Program (TAP) awards should apply each year to the New York State Higher Educational Services Corporation, 99 Washington Avenue, Albany, New York 12255. Applications should be submitted in early summer; the deadline is March 31 of the academic year for which aid is requested.

## Loan Funds

Sources for loans to veterinary students are as follows: the Cornell Veterinary Alumni Association, the New York State Veterinary Medical Society, the family of David E. Wright '12, the Dean W. A. Hagen Fund, the National Association of Federal Veterinarians Emergency Loan Fund, the Student Emergency Loan Fund of the Auxiliary to the New York State Veterinary Medical Society, the Charles H. Webster Veterinary Fund, the Guaranteed Student Loan Program, the Health Professions Student Loan Program, National Direct Student



Loans, and certain other loan funds administered by Cornell University. Most guaranteed loans defer interest or principal payments until the student has left school. Interest rates vary according to the source of the loan, and certain short-term loans are interest free.

Other guaranteed student loans available provide partial or no interest subsidy: the Auxiliary Loan to Assist Students (ALAS) and the Health Education Assistance Loan (HEAL).

## Scholarships for Veterinary Students

Veterinary students may receive help from various scholarship funds throughout the four-year course of study. The nature and extent of such assistance depends on scholastic achievements, specific criteria established by each benefactor, and recommendations of the appropriate college committees. Application procedures are outlined in announcements that are posted and distributed to each student. Committee evaluations and recommendations are completed at the end of spring semester. Scholarship stipends are handled by the University treasurer and credited to the student's academic charges during the following year.



Students interested in securing other forms of financial assistance should contact the college director of financial aid.

Numerous prizes are also available for veterinary students and are subject to conditions listed under each award. Many of the prizes, awards, and scholarships were established with endowments, so the income distributed and number of awards may vary from year to year.

**Auxiliary to the New York State Veterinary Medical Society Scholarship.** Two scholarships are awarded each year—one to a student at the end of the sophomore year and the other available to any student. The award of these scholarships will be based on the applicants' financial need and ability to do creditable academic work. Additional awards may be made as funds are available.

**Jack Edward Baker Memorial Loan-Scholarship Fund.** An endowed fund established in 1981 by Mrs. Frances Baker in honor of her "horse doctor" husband, Jack Edward Baker, D.V.M. '37. The fund is dedicated to the faculty and the high quality of veterinary training received by Dr. Baker at Cornell

University. Proceeds from the endowment are to be used for veterinary students in need of financial assistance.

**Mr. and Mrs. R. H. Baukhage Book Scholarship Fund.** Mrs. Elizabeth Glover Jenks '48 provided funds in the name of Mr. and Mrs. R. H. Baukhage for a permanent book scholarship for a deserving student.

**Bide-A-Wee Home Association Scholarship.** A scholarship established in 1982 that is available for a fourth-year veterinary student to provide financial support for tuition costs during the academic year. The award is offered in exchange for a minimum of one year's employment, at competitive rates, with the Bide-A-Wee Veterinary Clinic in Wantagh, Long Island. Applications must be made to the college Financial Aid Office.

**Harriet G. Bird Memorial Scholarship.** Established by the Merwin Memorial Free Clinic for Animals, Inc., for Massachusetts residents. The award is based primarily on the financial need of applicants who maintain satisfactory academic performance.

**The Joseph Brender Student Aid Fund.** Established by friends of Joseph Brender, this memorial loan-scholarship fund provides income for an annual scholarship award to veterinary students, with preference given to ethnic minority students.

**Charlie and Chico Memorial Scholarship.** An award dedicated to the memory of two faithful companion dogs, established by Mr. and Mrs. Alfred Morra in 1979. The scholarship is designated for a veterinary student who is from Connecticut or the New England area. It is to be given to a student who exhibits special care and concern for small animals, who has definite financial need, and who maintains creditable academic performance.

**The Dorothy R. Clay Scholarship Fund.** This fund was established in 1981 from the Dorothy R. Clay estate and is designed to provide scholarship aid for veterinary students.

**The William A. and Walter R. Dennis Memorial Loan-Scholarship Fund.** In 1981 Walter R. Dennis, D.V.M. '38, endowed a fund in memory of his brother, William A. Dennis, D.V.M. '26, to benefit second-, third-, or fourth-year students interested in the practice of farm animal medicine, with preference for students from Cattaraugus, Chautauqua, Chenango, and Madison counties. Following the death of Walter R. Dennis, the college honored a request from his family that the fund be known as the William A. and Walter R. Dennis Memorial Loan-Scholarship Fund.

**The William A. Dennis Memorial Scholarship Fund.** In 1982 the will of Theresa A. Dennis Hart, widow of William A. Dennis, D.V.M. '26, established the William A. Dennis Scholarship Fund, with the income to be used to provide scholarships for worthy students to be selected by the faculty of the college.

**Priscilla Maxwell Endicott Scholarship.** This endowed scholarship was established in 1977 in honor of Niel W. Pieper, D.V.M. '32. The income is to be used primarily for support of Connecticut students in the college. It is awarded on the basis of creditable academic performance, personal attributes, and financial need. If the scholarship is not needed for Connecticut students, it may be used for students from other New England states.

**Equine Summer Experience Scholarship.** Established to offer increased experience to students interested in equine medical practice, this scholarship is supported by organizations in the equine industry and by equine veterinary practitioners.

**Myron G. Fincher Memorial Scholarship Fund.** Funds from this scholarship will be used to provide scholarship assistance to outstanding juniors or seniors enrolled in the New York State College of Veterinary Medicine. Preference will be given to students who are interested in careers in the practice of large animal medicine or in academic large animal medicine.

**Irene Heinz Given and John LaPorte Given Veterinary Scholarship.** The award is administered by the Committee on Admissions, in accordance with the intent of the trustees of the Given Foundation, to help qualified students applying for admission who might otherwise be financially unable to attend this college.

**Arthur G. Hall Scholarship.** Established in 1975 as an endowed scholarship for needy and worthy students who maintain the moral standards required by the rules and regulations of the college.

**Richard M. Hartenstein Scholarship.** This scholarship is awarded to an outstanding veterinary student from Long Island, by the Auxiliary to the Long Island Veterinary Medical Association, in memory of Richard M. Hartenstein.

**David Kennedy Johnston Scholarships.** Under the will of Nettie J. Huey, funds were set aside to provide scholarships to students in the College of Agriculture and Life Sciences and the College of Veterinary Medicine.

**Valentine Mott Knapp Scholarship.** This annual scholarship was established through the will of David V. Knapp as a memorial to his brother, Valentine Mott Knapp, D.V.M. '04. The award is made at the end of the third year. In awarding the scholarship the faculty will take into consideration the ability of the applicant to do creditable academic work, the personal characteristics of the applicant with respect to professional attitude, and financial need.

**Madelyn C. Kreisler Scholarship.** Established in 1977 from the Madelyn C. Kreisler estate to provide scholarships in veterinary medicine.

**Joel Rosenman Leventhal Memorial Scholarship.** The Joel Rosenman Leventhal Scholarship was established in 1983 as a gift from Mrs. Miriam R. Leventhal in memory of her son, Joel Rosenman Leventhal, whose greatest aim in life was to be a veterinarian and who was a student at Cornell University when he met with a fatal accident. This scholarship is to be awarded with the expectation that the student who receives it during the first year in the New York State College of Veterinary Medicine will continue to be supported. It is for a veterinary student who completed undergraduate work at Cornell University.

**Germaine B. Little Student Loan Fund.** This loan-scholarship fund was established by the will of Germaine B. Little. Income from this fund is awarded annually to selected veterinary students who have demonstrated financial need.

**Miles C. Markham Scholarship.** This endowed scholarship was established in 1976 in honor of Miles C. Markham, D.V.M. '18, by his wife, Hedwig, for worthy, needy students in the college. It is awarded on the basis of general worthiness of applicants, taking into consideration their overall character, academic ability, and financial needs.

**Dr. John G. Marvin Scholarships.** Sponsored by the Western New York Veterinary Association in honor of John G. Marvin, D.V.M. '30, of Fillmore, New York. The scholarships are awarded to students who have completed their third year of study and are residents of western New York counties. Selection is based on financial need, and the awards are presented at the Erie County Fair.

**Merck Company Foundation Veterinary Student Aid Program.** A special program established in 1981 by the Merck Company Foundation to provide funds for student aid in schools of veterinary medicine. Recipients are selected on the basis of financial need by the Committee on Scholarships.

**Merrimack Valley Kennel Club Scholarship.** Sponsored by the Merrimack Valley Kennel Club, of Derry, New Hampshire, this scholarship is designated for a student from New England.

**Dr. Lykergus W. and Alma Fay Messer Memorial Scholarship.** A bequest from the estate of Alma Fay Messer established this scholarship in 1981 in honor of her husband, Lykergus W. Messer, D.V.M. '28. The income from the fund is to be used for scholarships for veterinary students in need of financial assistance.

**Mohawk Valley Kennel Club.** This is a scholarship to provide financial help for a student from the New York State capital district attending the College of Veterinary Medicine.

**New York State College of Veterinary Medicine Loan-Scholarship Fund.** This loan-scholarship fund was established from contributions to the college by alumni and friends. Income from the fund is offered annually as scholarship support for students with financial need.

**North Shore Animal League Scholarship-Loan Fund.** An endowment provided by the North Shore Animal League in 1983. Earnings are to be used for scholarship support of veterinary students, with preference for those having small-animal interests.

**Pfizer Scholarship.** This scholarship is awarded to a student at the end of the third year whose academic achievement is adequate, whose need for the award is clear, and who shows good potential.

**Plainfield Kennel Club Scholarship.** This is an award for a veterinary student from New Jersey who is in need of financial assistance.

**Mrs. Cheever Porter Foundation, Inc., Student Loan-Scholarship Fund Scholarship.** Supportive of organizations working with animals, the Mrs. Cheever Porter Foundation endowed this scholarship in 1982.

**Ryman and Katherine Powell Student Fund.** This loan-scholarship fund was established by two veterinarians, Frank Powell, D.V.M. '63, and Joseph Powell, D.V.M. '67, in honor of their parents. Earned income from this endowment is awarded annually in the form of a scholarship, with preference given to students from western New York State.

**Putnam Kennel Club Scholarship.** The club provides scholarship support for a deserving veterinary student from New York State whose major interests are in the small animal area.

**Dorothy S. Rex Student Aid Fund Scholarship.** This endowment fund, established in 1979 by the Dorothy S. Rex estate, is designed to help educate worthy young men and women in veterinary science.

**Sewell-Metzger Memorial Scholarship.** An endowment provided in 1980 by the will of Dorothy Metzger is to be used for scholarship support of veterinary students who have completed three years of academic training and have demonstrated interest in small animal research, especially for the canine species.

**Maurice H. Skyer Memorial Scholarship.** Provided by the Monticello-Goshen Chapter of the United States Harness Writers Association, this scholarship is to be awarded to a student from Orange, Sullivan, Ulster, Delaware, or Dutchess County in New York, or from Pike, Wayne, Lackawanna, or Luzerne County in Pennsylvania. The student must be interested in working with horses. The scholarship is awarded for use in the fourth year.

**Snow Valley Dog Training Club Scholarship.** The award is designated for a student from Oswego County, New York, who has good academic standing and a demonstrated financial need.

**Thomas F. Tanneberger Memorial Scholarship-Loan Fund.** A fund established by the veterinary class of 1975 in honor of Thomas F. Tanneberger, D.V.M. '75, who was killed in an auto accident in 1979. Earnings are to be used to support scholarships for veterinary students who have made outstanding athletic contributions during their lifetime, with preference for those coming from the northern New York area.

**The Jim Dale Thomas Memorial Scholarship.** This award was established as a prize in 1965 and became a scholarship in 1969. The scholarship is awarded, for use in the fourth year, to a third-year veterinary student who has shown an interest in dairy cattle practice and has a high level of capability in this field. The award is made on the judgment of the faculty of the Department of Clinical Sciences.

**Troy Kennel Club Scholarship.** This scholarship is for a veterinary student who needs financial assistance and who has maintained good academic standing.

**Union County Kennel Club Scholarship.** A scholarship for a third- or fourth-year veterinary student from New Jersey.

**Hilda G. and Walter D. Way Scholarship.** A scholarship established in 1984 to help a needy and deserving veterinary student.

**Colonel and Mrs. Louis G. Weisman Fund.** This endowed fund can be used for either loan or scholarship purposes at the discretion of the college. Scholarships are granted from fund earnings to students on the basis of academic performance and financial need.

**Yonkers Raceway Foundation Scholarship.** By action of the executive committee of the Yonkers Raceway Foundation, an endowed scholarship was established at the College of Veterinary Medicine to be awarded to a needy student who is a resident of New York State.

### Prizes for Veterinary Students

These are among the prizes awarded at the college annual Honor Day Banquet held each year in the spring.

**American Animal Hospital Association Student Award.** This award of an engraved plaque and a letter of commendation is made to a senior in recognition of outstanding proficiency in small animal medicine and surgery. The nominations are made by faculty of the Medical and Surgical Sections of the Department of Clinical Sciences who are responsible for teaching in the Small Animal Clinic.

**The James Gordon Bennett Prize.** In 1916 Mr. James Gordon Bennett, New York, New York, endowed this prize for the students who show the greatest humaneness in handling animals, with special reference to the use of anesthesia. Mr. Bennett was the editor of the *New York Herald* (forerunner of the *Herald Tribune*) a century ago. A man of diverse abilities and interests, he is the person who dispatched Henry M. Stanley to Africa in 1870 to find Dr. David Livingstone. Nominations are made by the faculty of the Section of Anesthesiology in the Department of Clinical Sciences.

**The Anne Besse Prizes.** Miss A. B. Jennings of New York City endowed this prize in 1925 for the best work in large animal medicine. Nominations are made by the Medical Section faculty of the Department of Clinical Sciences who teach large animal medicine.

**The Frank Bloom Pathology Award.** This prize was established in 1978 with an endowment by Dr. Frank Bloom. Dr. Bloom, a 1930 Cornell graduate, is a charter diplomate of the American College of Veterinary Pathologists, as well as a diplomate of the American College of Laboratory Animal Medicine. He has practiced in Flushing, New York; taught at Downstate Medical Center; and published quite extensively. The nomination for a senior who has demonstrated special excellence in pathology is made by the Department of Pathology.

**The Charles Gross Bondy Prize.** Mr. Richard Bondy, New York, New York, endowed this prize in 1929 as a memorial to his son. It is given for the best work in the courses in practical medicine and surgery of small animals. Nominations are made by the faculty of the Medical and Surgical Sections of the Department of Clinical Sciences who teach in the Small Animal Clinic.

**The A. Gordon Danks Large Animal Surgery Award.** This award was initiated in 1978 by the faculty of the Surgical Section of the Department of Clinical Sciences who teach in the Large Animal Clinic. It is in recognition of the outstanding contributions of Professor Emeritus A. Gordon Danks, first director of student administration and admissions and former chairman of the former Department of Large Animal Medicine and Surgery. It is presented to a senior demonstrating outstanding knowledge and talent in the diagnosis and treatment of surgical problems of large animals. Basic and applied knowledge, diagnostic abilities, general surgical skills, and patient care exhibited during the clinical rotations are considered in the presentation of this award.

**The Donald D. Delahanty Memorial Prize.** This prize was established as a special memorial to Dr. Donald Delahanty, a member of the Department of Large Animal Medicine, Obstetrics, and Surgery from 1952 to 1975. The prize is given to a fourth-year student who has shown an interest in equine practice and a high level of proficiency in the field. The candidate is nominated by the faculty of the Department of Clinical Sciences concerned with the equine patient.

**American Association of Feline Practitioners Award.** This award of a recognition plaque and two years' free membership in the American Association of Feline Practitioners is to a senior who has shown special interest and accomplishment in feline medicine and surgery. Selection of the recipient is made by the faculty of the Small Animal Clinic.

**The Gary Bolton Memorial Cardiology Award.** Funds for the endowment of this award arose from donations made by friends and colleagues of Doctor Gary R. Bolton in memory of his outstanding contributions to the field of small animal cardiology. Dr. Bolton was a member of the faculty and taught cardiology for a decade. Dr. Bolton was also known and respected as a compassionate veterinarian who exhibited empathy to his patients and their owners. A fourth-year student who has demonstrated understanding and expertise in cardiology and an empathy for patients that is compatible with the philosophy of Doctor Bolton will be nominated by the faculty of the Small Animal Clinic for this award.

**The Myron G. Fincher Prize.** An award initiated in 1980 through an endowment from Dr. Niel W. Pieper '32, given in honor of Professor Emeritus Myron G. Fincher '20. It is in recognition of the many contributions to the college by Dr. Fincher. Always a gentleman, he firmly demanded the best from his students and played a leading role in the instruction of large animal medicine and obstetrics for forty-five years. The award is presented to a senior student who has demonstrated the best work in courses



dealing with large animal obstetrics and reproductive diseases. Both academic and practical performance are considered. Nominations are made by the Section of Theriogenology in consultation with other clinical faculty responsible for fall-semester teaching.

**The Gentle Doctor Award.** Sponsored by the Class of 1979, this award was made possible by Dr. William E. Hornbuckle's contribution of the money received from the Norden Distinguished Teacher Award to the Class of 1979. This award, a bronzed statue of the Gentle Doctor, is to be given to the senior who demonstrated the best patient care in the Large or Small Animal Clinic. The candidate is nominated by the staff of the Department of Clinical Sciences.

**Hill's Award for Excellence in Clinical Nutrition.** Hill's Pet Products provides an engraved bronze plaque and cash prize to the fourth-year D.V.M. student who exhibits the greatest interest, knowledge, and proficiency in clinical nutrition as it applies to the diagnosis, treatment, and management of small animal diseases, and also to the third-year student who has achieved the highest academic grade in the Clinical Nutrition course.

Determination of the fourth-year recipient rests with the faculty responsible for teaching nutrition and clinical sciences.

**The Grant Sherman Hopkins Prize.** The endowment for this prize was given by Mrs. Ann Ottaway Hopkins in 1955 in memory of her husband, who was a member of the original faculty and served the University and college for forty-five years as professor of veterinary anatomy. It is awarded on the recommendation of the faculty in the Department of Anatomy on the basis of interest, ability, perseverance, and performance in the work in that department.

**The Kleen Leen Award in Swine Medicine.** This award is presented annually to a senior student for proficiency in swine medicine. The outstanding student will be selected by faculty members responsible for teaching swine medicine.



Dr. Charles E. Hall, associate professor of reproductive studies

**The P. Philip Levine Prize in Avian Medicine.** This prize was established from donations made by friends and colleagues of Dr. P. Philip Levine in memory of his many contributions to the field of avian medicine, both nationally and internationally. Dr. Levine was a longtime member of the Cornell faculty and was the first chairman of the Department of Avian Diseases. Much of his life was dedicated to the training of young people and encouraging them to aspire to excellence. In the spirit of encouraging excellence, this prize is awarded to the second-year veterinary student who has attained the highest grade in the course on avian medicine.

**The Merck Manual Awards.** Two copies of the *Merck Veterinary Manual*, embossed with the names of the recipients and provided by Merck and Company, Inc., are presented to members of the graduating class. The basis of the award may vary from year to year and is determined by the dean and the director of student administration.

**The Jane Miller Prize.** Funds for the endowment of this prize were given by Dr. Frank H. Miller, a trustee of Cornell University for twenty consecutive years, a graduate of McGill University, and cofounder, with H. K. Miller, of the first small animal hospital in New York City. The prize is for the best work in veterinary physiology. It is awarded, as a memorial to Dr. Miller's wife, to members of the second-year class. Candidates are nominated by the faculty of the Department of Physiology.

**The Malcolm E. Miller Award.** In 1965 Mrs. Mary Wells Miller Ewing established this award in memory of her husband, Dr. Malcolm E. Miller '34, a former professor of anatomy and the head of that department from 1947 to 1960. The recipient is to be a fourth-year student who, in the judgment of the dean and the director of student administration, has demonstrated perseverance, scholastic diligence, outstanding improvement, and other personal characteristics that will bring credit and distinction to the veterinary profession.

**The Mary Louise Moore Prize.** Dr. Veranus A. Moore established this endowed prize as a memorial to his wife; it is given for the best work in bacteriology. Dr. Moore served as head of the



Pathology and Bacteriology Department and as dean of the Veterinary College from 1908 to 1930. Nominations are made by the Department of Veterinary Microbiology.

**The New York State Veterinary Medical Society Prize.** This prize, which consists of an engraved plaque and a cash award, is provided annually by the Society for the best Senior Seminar. Members of the fourth-year class are eligible to compete. Nominations are made by the Senior Seminar Committee, who judge the quality of the seminars.

**The Norden Distinguished Teacher Award.** The recipient must be a full-time member of the veterinary medical faculty and be primarily engaged in teaching, which may include part-time research. His or her preceptorship and teaching ability, as judged by responsiveness of the students, and his or her moral character and leadership shall be the primary qualifications considered.

**Philotherian Photographic Prizes.** Dr. and Mrs. Hadley C. Stephenson established this endowment. Photographs of animals, submitted by students or their spouses, are judged by a committee appointed by the college. The two prizes are awarded on the basis of the individuality of the animal, its enjoyment of its surroundings, and the effect it has on the feelings of the judges.

**The Phi Zeta Award.** The Alpha Chapter of Phi Zeta, the honor society of veterinary medicine, acknowledges the second-year student with the best academic record upon completion of the first three semesters of study. The recipient of the award receives the Beeson-MacDermott *Textbook of Medicine*.

**The Colonel Floyd C. Sager Equine Obstetrics and Pediatrics Award.** This award, created on the occasion of Dr. Sager's ninetieth birthday, in 1984, by another Cornellian who trained under Dr. Sager, recognizes a Cornell veterinarian whose name is synonymous with excellence in equine obstetrics and pediatrics. Following Dr. Sager's graduation in 1917, he served in the Army Remount Service until after World War II. He then became the veterinarian for the world-famous Claiborne Farm in Kentucky, where he has remained since. The senior receiving this award is, in the opinion of the faculty of the Department of Clinical Sciences, that person who has displayed outstanding aptitude in equine obstetrics and pediatrics.

**Sheidy Prize for Pharmacology.** Awarded to a member of the graduating class who, in the opinion of the faculty of the Department of Pharmacology, has demonstrated an outstanding ability to incorporate the principles of pharmacology into the treatment, maintenance, and care of the patients that the student has been prepared to serve

professionally. The recipient of the award receives a specially inscribed copy of *Veterinary Pharmaceuticals and Biologicals*.

**The Anna Olafson Sussex Pathology Award.** This award was endowed in 1974 by Peter and Harriette Olafson in memory of Dr. Olafson's sister. The award is to be given at the end of the third year and is to be made on the recommendation of the people actively engaged in teaching pathology.

**The Jacob Traum Award.** Through an endowment established by friends of Jacob Traum '05, professor of bacteriology emeritus, University of California, and formerly chief scientist at the federal Plum Island Animal Disease Laboratory, this prize is awarded to the fourth-year students who are adjudged by the Department of Veterinary Microbiology as having exhibited in their scholastic career superior interest and accomplishment in bacteriology, epizootiology, pathology, and virology, including aptitude for, and expressed interest in, research on infectious diseases.

**The Horace K. White Prizes.** An endowment for these prizes was originally given by Mr. Horace K. White (and later by his sons, of Syracuse, New York) for the students whose academic records for the entire veterinary course are the highest. This award, originally called the President's Prize, dates back to 1873 and is probably the longest-standing prize at Cornell. The original donor was a brother to Andrew Dickson White, the first president of the University.

**The Prize of the Auxiliary of the American Veterinary Medical Association.** This award is presented to the member of the fourth-year class who is deemed to have best advanced the standing of the College of Veterinary Medicine campus by special extracurricular contributions.

**The Wild Bird Research and Rehabilitation Award.** This award, from a University endowment by the same name, is to be given to a senior veterinary student who has demonstrated concern for the rehabilitation of wild birds or who has been involved in research relative to wild bird treatment and rehabilitation. Nomination is made by the director of the Teaching Hospital and is based upon recommendations of concerned faculty.



*A first-year histology class*



# THE CURRICULUM

## Requirements for Graduation

The prescribed four-year curriculum leading to the degree of Doctor of Veterinary Medicine (D.V.M.) is summarized in the section below. To receive this degree, candidates must successfully complete the courses named in the curriculum below, have paid all fees due, and be recommended for graduation by the college faculty.

The academic year, divided into two terms, begins in August and ends in May. At the conclusion of each term the college faculty reviews the records and conduct of students. Students whose grades are not satisfactory may be denied permission to register or graduate or may be assigned varying degrees of academic warning or probation.

## Core Curriculum

The college has a core-elective curriculum. A summary of the core curriculum is shown below.

The abbreviation "Req." indicates that a course, or its equivalent, is required for graduation but that no formal credit is given for the course. Courses marked "S" are offered on an S-U basis only.

## First Year

### Fall Term

	<i>Credits</i>
500 Gross Anatomy: Small Animal	4
501 Gross Anatomy: Large Animal*	5
502 Cytology and Histology	1
504 Neuroanatomy and Clinical Neurology*	2.5
507 Animal Development	3
525 Cell Physiology	4
526 Systems Physiology I	4
568 Foundations of Clinical Science I	2
	<hr/> 25.5

### Spring Term

501 Gross Anatomy: Large Animal (continued)	
503 Organology	2.5
504 Neuroanatomy and Clinical Neurology (continued)	
508 Anatomy of the Fish and Bird	0.5
527 Systems Physiology II	4
519 Introductory Veterinary Microbiology	2
569 Foundations of Clinical Science II	2
	<hr/> 11.0

Selectives (to be taken either fall or spring) 2  
 \*Begins in the fall term and continues into spring term.



*A silicone cast of a dog's heart*

## Second Year

### *Fall Term*

510 Veterinary Parasitology	Credits
515 Veterinary Immunology	4
516 Infectious Diseases I	2
524 Veterinary Physiology	2
528 Pharmacology I	4
535 Veterinary Pathology I	4
	<hr/>
	20

### *Spring Term*

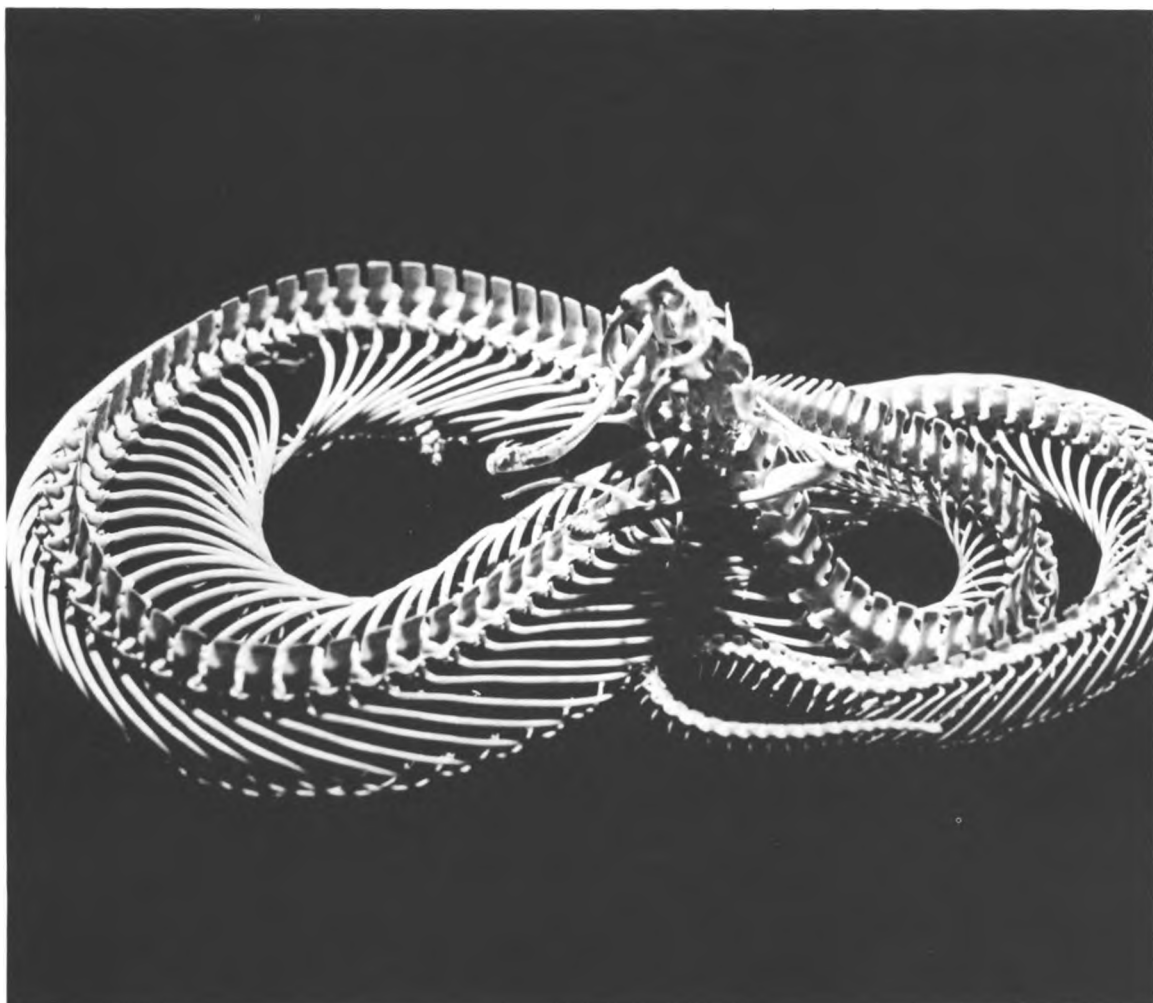
517 Infectious Diseases II	4
529 Pharmacology II	2
536 Veterinary Pathology II	4.5
545 Epidemiology (not offered 1985-86)	2
561 Theriogenology I	3
571 Clinical Pathology	3
579 General Medicine and Surgery	4
	<hr/>
	22.5

Selectives (to be taken either fall or spring) 4

## Third Year

### *Fall Term*

505 Applied Anatomy	Credits
529 Pharmacology II (1985-86 only)	1
530 Veterinary Medical Ethics (not offered 1985-86)	2
548 Anesthesiology	Req. 1
555 Avian Diseases	2
562 Theriogenology II	3
563 Large Animal Medicine and Surgery	5
566 Radiographic Techniques	1
567 Clinical Nutrition	3
583 Small Animal Medicine and Surgery	5
587 General Surgery (1985-86 only)	1
	<hr/>
	24



*A gaboona viper skeleton*

#### *Spring Term*

506 Applied Anatomy	1
520 Preventive Medicine and Animal Health Management	1
531 Regulatory Medicine	Req.
539 Laboratory Animal Medicine	1
564 Large Animal Medicine and Surgery	6
582 Large Animal Surgical Exercises	2
584 Small Animal Medicine and Surgery	7
586 Small Animal Surgical Exercises	2
	<hr/>
	20

Selectives (to be taken either fall or spring) 4

#### **Fourth Year**

##### *Required*

	<i>Credits</i>
540 Pathology Service	2
572 Senior Seminar	0
574 Large Animal Surgery Service	4
575 Ambulatory Medicine Service	4
578 Anesthesiology Service	2
580 Radiology Service	2
589 Small Animal Medicine Service	4
591 Small Animal Surgery Service	4
593 Ophthalmology Service	2
594 Large Animal Medicine Service	2
598 Dermatology Service	2

##### *Elective*

547 Practice Management	2
570 Theriogenology	4
596 Opportunities in Veterinary Medicine	V4



## Teaching Hospital Rounds

Fall term: August 29–December 7, 1985

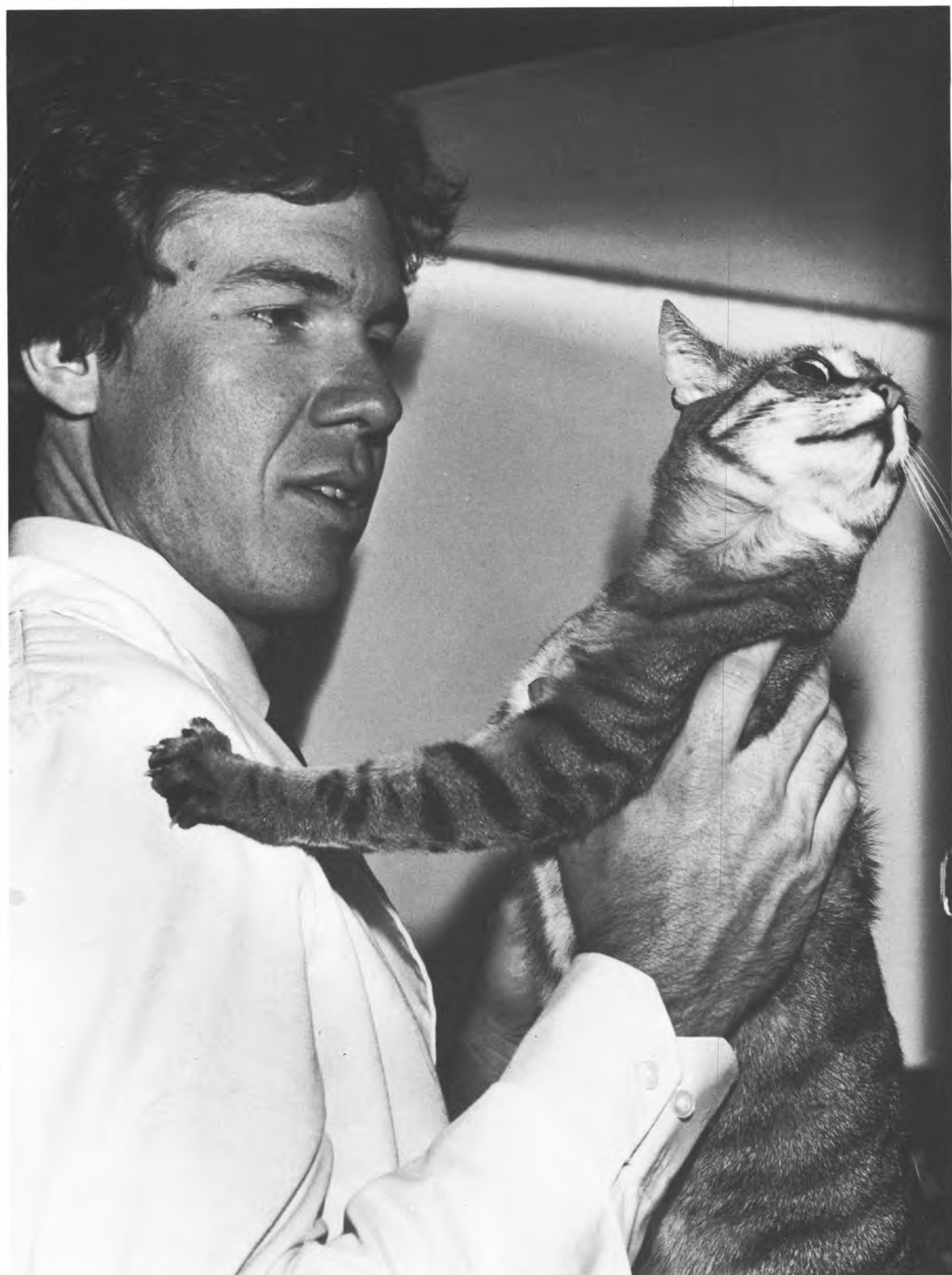
Hour	Monday	Tuesday	Wednesday	Thursday	Friday
7:30–8:00	SAC Patient Rounds Surgery G131	SAC Patient Rounds Medicine G131	LAC Patient Rounds Medicine Large Animal Clinic	LAC Patient Rounds Surgery Large Animal Clinic	7:30 Senior Seminar Auditorium
7:30–9:00			Anesthesiology 219 B		
8:00–9:00	Special Topics in Pathology E215  SAC Medicine Rounds 530 VRT	Necropsy Pathology Seminar E215	Surgery Rounds 530 VRT	Surgical Pathology Review E215  Medicine Conference 530 VRT	
9:00–10:00				Infectious Disease Rounds Large Animal Clinic	
12:30–1:00		12:25 Radiology Rounds G131	12:15 Pathology Bottom Line C207		Neurology/ Ophthalmology Rounds Large Animal Clinic
3:30					Show and Tell Necropsy Laboratory
4:30	Pathology Necropsy Laboratory	Show and Tell Necropsy Laboratory	Hospital Grand Rounds G3	Pathology Necropsy Laboratory	Show and Tell Necropsy Laboratory



## Teaching Hospital Rounds

Spring term: January 27–May 10, 1986

Hour	Monday	Tuesday	Wednesday	Thursday	Friday
7:30–8:00	SAC Patient Rounds Surgery G131	SAC Patient Rounds Medicine G131	LAC Patient Rounds Medicine Large Animal Clinic	LAC Patient Rounds Surgery Large Animal Clinic	7:30 Senior Seminar Auditorium
7:30–9:00			Anesthesiology 219 B		
8:00–9:00	Pathology State of the Art E215  SAC Medicine Rounds 530 VRT	Necropsy Pathology Seminar E215	Surgery Rounds 530 VRT	Surgical Pathology Review E215  Medicine Conference 530 VRT	
9:00–10:00				Infectious Disease Rounds Large Animal Clinic	
12:30–1:00		12:25 Radiology Rounds G131	12:15 Pathology Bottom Line C207		Neurology/ Ophthalmology Rounds Large Animal Clinic
3:30					Show and Tell Necropsy Laboratory
4:30	Pathology Necropsy Laboratory	Show and Tell Necropsy Laboratory	Hospital Grand Rounds G3	Pathology Necropsy Laboratory	Show and Tell Necropsy Laboratory



*Dr. Dougald R. Gilmore, assistant professor of surgery*





# STUDENT LIFE

## Housing and Dining

### Off-Campus Housing

The majority of D.V.M. students live off campus. Information on housing that is currently available is posted on a board at the Off-Campus Housing Office, 103 Barnes Hall. Because changes of available accommodations occur daily, it is not practical to prepare lists. If possible, a student should plan to visit Ithaca well in advance of residence in order to obtain suitable quarters off campus.

The Office of Student Affairs and Admissions at the veterinary college also keeps a notebook of housing opportunities to which students are welcome to refer.

### On-Campus Housing

University housing in residence halls is available to single graduate and D.V.M. students upon application to the Housing Assignment Office, Cornell University, 1142 Balch Hall, Ithaca, New York 14853.

Sage Hall provides housing for approximately 200 men and women. Situated in the center of campus, it is convenient to all colleges. There is a cafeteria in the building. Schuyler House accommodates approximately 150 graduate men and

women. It is located in a community residential area within walking distance of campus and downtown shopping areas. A third residence is a small apartment building, Thurston Court, housing 21 graduate students. It is located just north of Fall Creek Gorge on Thurston Avenue.

### Family Housing

The University maintains apartment accommodations for approximately 420 students and their families. These are Cornell Quarters, Pleasant Grove Apartments, and Hasbrouck Apartments. All accommodations are unfurnished. Requests for further information and applications should be directed to the Family Housing Office, Building 40, Hasbrouck Apartments, Ithaca, New York 14850.

### Dining Services

Breakfast and lunch are available in the cafeteria on the first floor of the Veterinary Research Tower. Vending machines are also located at various places throughout the college.

Those students who plan to live on campus may want to participate in the Co-op Dining program. Additional information on the various plans available may be obtained from Cornell Dining, 233 Day Hall.



Open House

## Activities and Organizations

### SCAVMA

Most of the students attending the New York State College of Veterinary Medicine belong to the student chapter of the American Veterinary Medical Association. Membership benefits include a subscription to *JAVMA* (*Journal of the American Veterinary Medical Association*); a voice in the national organization, SAVMA (Student American Veterinary Medical Association); and participation in many activities throughout the year. To begin the year SCAVMA sponsors a picnic to welcome first-year students and to end the year holds a farewell picnic for graduates. In between, SCAVMA sponsors lectures, wet labs, and social events. Fund-raising includes an annual auction, dog washes, and the selling of veterinary school T-shirts and hats. A yearly service project is helping the county with its

rabies clinic. In the spring several students attend the national SCAVMA symposium, which is held at a different school of veterinary medicine each year.

*Cornell Chapter of SCAVMA, 1985-86*

President: D. Bradford Burrington, Class of 1987

Vice president: Marcia Campbell, Class of 1987

Secretary: Carolyn Prouty, Class of 1987

Treasurer: Cynthia Wojcicki, Class of 1987

Advisers: Professor F. A. Kallfelz, Marcia Sawyer

Students with interest in specific areas can also join one of the many organizations active in the college. Each of these groups meets to discuss its particular interests and sponsors lectures, trips, and workshops. Presently, the groups represented at the college are:

AAEP, American Association of Equine Practitioners

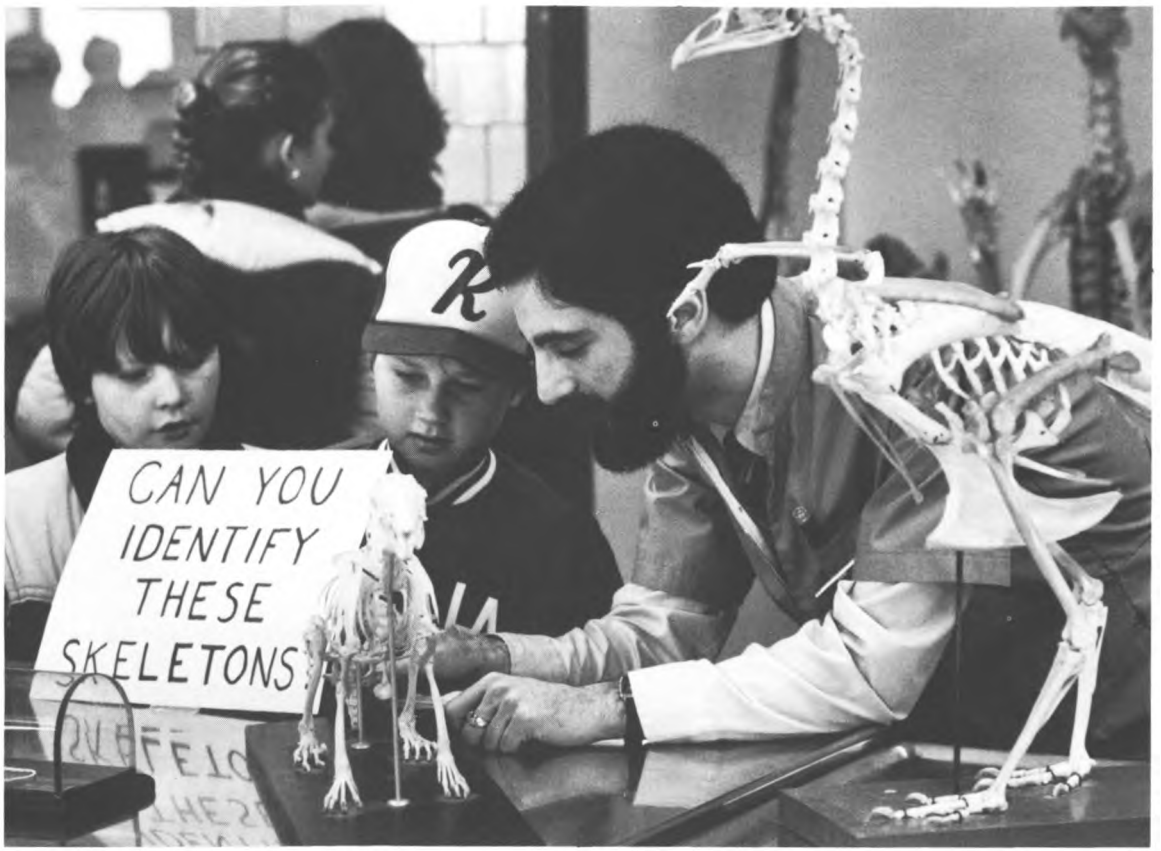
AABP, American Association of Bovine Practitioners

AAZV, American Association of Zoo Veterinarians

AAHA, American Animal Hospital Association

AASGP, American Association of Sheep and Goat Practitioners

VIDA, Veterinarians Interested in Developing Areas



### Honor Societies

There are three honor societies for which students of the College of Veterinary Medicine are eligible.

**Phi Zeta.** Founded in 1925 by the students of the New York State Veterinary College at Cornell University, Phi Zeta strives for the constant advancement of the veterinary profession, higher educational requirements, and superior scholarship. The object of the society is to recognize and promote scholarship and research pertaining to the welfare and diseases of animals.

**Sigma Xi.** Any student or research staff member is eligible for membership in Sigma Xi, the Scientific Research Society of North America. It is the responsibility of the Admissions Committee of Sigma Xi to select for membership those individuals whose research aptitude or achievement deserves special recognition.

**Phi Kappa Phi.** The society of Phi Kappa Phi was founded in 1897 and soon became a national organization. Its primary objective is to recognize and encourage superior scholarship in all fields of study. Good character is essential for those elected to membership.

### Fraternities

Two veterinary fraternities have houses in Ithaca. They are Alpha Psi and Omega Tau Sigma. The fraternities are coeducational and encourage all students to join whether or not they live at the house. They offer many social activities, and all students are welcome at any fraternity event.

### Open House

Each year students at the college participate in the planning and presentation of Open House. On a Saturday in April the college is opened to the public and offers displays and exhibits, tours, films, and instruction on many aspects of veterinary medicine geared to various age groups. Several thousand people take advantage of this opportunity.



## Counseling

### Academic

Each student has an academic adviser who is a member of the faculty and can advise on matters related to the student's academic career. The relationship is an informal one but can be very important in cases where students are experiencing academic difficulty.

### Personal

The director of student affairs is available to counsel students in matters of a personal or crisis nature. The director may at times refer the student for more in-depth therapy to the University Psychological Service or to any number of other offices depending on the problem. There are many support services available at the University to help students deal with problems. For example, among the workshops offered each term are those dealing with time management, assertiveness training, stress management, and study skills.

## Health Services

University Health Services provides comprehensive medical care for all full-time undergraduate and graduate students enrolled at Cornell University in Ithaca. Gannett Health Center, located at 10 Central Avenue, adjacent to Willard Straight Hall, is open twenty-four hours a day during the school year and is available for overnight care and emergency outpatient services outside of normal working hours. Normal hours are Monday through Friday from 8:30 a.m. to 11:30 a.m. and from 1:00 p.m. to 4:30 p.m. and Saturday from 8:30 a.m. to 12:30 p.m.

The center's medical staff, under the supervision of the medical director, consists of attending physicians and health associates from the University staff and consulting physicians and surgeons from the Ithaca area. All medical records are strictly confidential.

For a medical appointment, a student should call 256-4082 or go to the center. For an appointment at the Psychological Service, a student should call 256-5208 or go to the offices at the center. A doctor is available for emergencies twenty-four hours a day (telephone: 256-5155).

General medical care, psychological services, gynecological care, and overnight and after-hours or emergency care are provided at Gannett Health Center without additional cost. Laboratory service, X-rays, physical therapy, limited consultations, allergy shots, drugs, and other services provided on-site may be charged for. There is a fee for all services off-site. Students may call 256-4082 for additional information.

## Student Accident and Sickness Insurance Plan

Cornell sponsors a health insurance plan underwritten by a private insurance company to supplement the services outlined above. This plan may be waived if the student has other health insurance or is willing to accept the financial risk of no insurance. Students are urged to carefully consider the comprehensive benefits available for a relatively modest fee before waiving the plan. The plan covers services not available on campus, such as hospital care and consultations. Further, it provides for expenses relating to illness or accidents outside Ithaca during the academic year and vacation periods. Families of students are eligible for coverage. Information about this insurance may be obtained by calling 607/256-6363 or by visiting Gannett Health Center, where a representative of the insurance company has an office.

## Health Care Plan for Student Spouses

The University Health Services provides health care for student spouses on a prepaid or fee-for-service basis. The fee schedule and other information about this service is available at the front desk and in the Student Insurance Office.

## Emergency Health Service

Students requiring after-hours or emergency care should call the health center at 256-5155 to receive instructions on the proper course of action to follow.

## Services for the Handicapped

Cornell University is committed to assisting those handicapped students who have special needs. A brochure describing services for the handicapped student may be obtained by writing to the Office of Equal Opportunity, Cornell University, 233 Day Hall, Ithaca, New York 14853. Questions or requests for special assistance may also be directed to that office.

## Conduct of Students

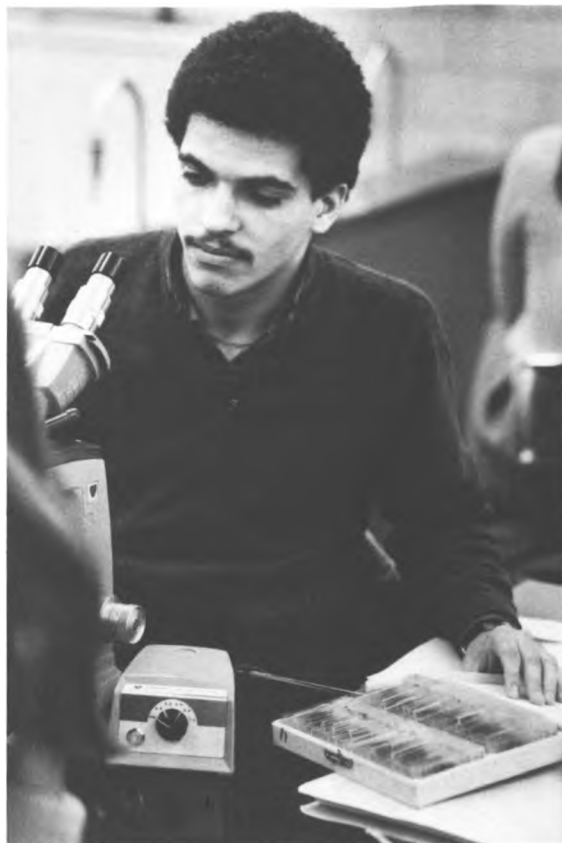
The standards of conduct expected of a Cornell veterinary student are defined by various University regulations and the College of Veterinary Medicine Student Honor Code. The code was established in recognition of the importance of ethics, honor, and integrity in an individual's training for the profession. It places the responsibility for ethical and professional conduct upon the students and is implemented by a Student Administrative Board, which is granted initial jurisdiction by the faculty. It is each student's responsibility to become familiar with the contents of the code and to abide by it throughout his or her involvement with the college.

## Placement

The placement service, a part of the Office of Student Affairs and Admissions, offers valuable information to students attending the New York State College of Veterinary Medicine. Alumni and other practitioners seeking associates also benefit from this service.

Employment opportunities for permanent positions, summer jobs, and externships are solicited from all over the country and stored on the central veterinary college computer. Students gain access to this information by using terminals available to them. The student may select employment type, practice type (small, large, or mixed), and location desired to be viewed on the screen or printed on a remote printer in the Office of Student Affairs and Admissions.

A résumé service; workshops on such topics as job seeking, salary negotiation, and the purchase of insurance; compilation of national and state board information; and the collection and distribution of employment statistics are additional services provided by the office.



## Legal Requirements to Practice

Before graduates can practice veterinary medicine in the United States, they must obtain a license from the state or states in which they locate their practices. This license is generally issued by the department of education or the department of agriculture of the state on the basis of an examination by a veterinary licensing board. Some states issue licenses without examination, based upon reciprocity, when the applicant has been licensed in other states.

In New York the licensing agency is the State Education Department. All inquiries should be addressed to the Secretary of the State Board of Examiners, 99 Washington Avenue, Albany, New York 12210. Application for the examination must be filed at least sixty days before the scheduled date and must be accompanied by a fee. Other details are available from the State Board of Examiners.



*Surgery in the Veterinary Medical Teaching Hospital*



# *D.V.M. STUDENTS*

## **Fourth Year Class of 1986**

Ackermann, Susan  
Anderson, Lisa  
Anderson, Mark  
Armao, Christine  
Ashford, David  
Bayha, Renee  
Blumenstock, Kristen  
Bokman, Stephen  
Bookbinder, Paul  
Brown, Eve  
Brown, W. James  
Bump, Jadene  
Byer, David  
Card, Claire  
Castro, Cecilia  
Cirnigliaro, Daniel  
Cleary, Susan  
Davis, Jocelyn  
Dennis, Jill  
DeVito, Angela  
Dole, Elizabeth  
Dring, Lorri  
Eastman, Kevin  
Ehrhardt, Susan  
Feltz, Timothy

Freeman, Lisa  
Friedlander, Joseph  
Gschrey, Edward  
Hale, David  
Hall, Kay  
Hartelius, Eric  
Hudson, Roderick  
Ialeggio, Donna  
Johnson, William  
Kaplan, Scott  
Kirk, Pamela  
Kutrybala, James  
Leck, Gregory  
Lindsay, Mary  
Lipman, Janet  
Livesay-Wilkins, Pamela  
McEntee, Margaret  
McNamara, Carolyn  
Massaro, James  
Montgomery, Susan  
Moorman, Diane  
Moy, Nancy  
Nagell, Robert  
O'Brien, Kathleen  
Olm, Dale  
Orr, Dennis  
Payer, David  
Pierce, Kelvin  
Pierok, Anne  
Plunkett, Timothy  
Puccio, Frank

Raditic, Donna  
Reppert, Pamela  
Reynolds, Arleigh  
Riddle, Shelby  
Robinson, James  
Ross, J. Thomas  
Schafer, Michael  
Schulmeyer, Raymond  
Seavey, Michelle  
Sheldon, Karen  
Shivy, Diane  
Skrabalak, Dale  
Slater, Margaret  
Smith, Jeffrey  
Spitzer, Jessica  
Swanson, Lynne  
Tanneberger, Michael  
Taylor, Brad  
Tobin, Jennifer  
Tonarely, Jorge  
Trepanier, Lauren  
Vanderwall, Dirk  
Violette, John  
Wierzbicki, Lisa  
Wittner, Diane  
Zeifman, Anne  
Zweiter, Sharon

## Third Year Class of 1987

Altieri, Richard  
Bank, Sheila  
Berens, Mark  
Berghash, Stephen  
Biederman, Diane  
Bimbo, Annemarie  
Blackshear, Pamela  
Bors, Monica  
Bostley, Timothy  
Brancato, Richard  
Brandt, Leanne  
Brown, Carolyn  
Bruno, Donald  
Burns, Gilbert  
Burrington, D. Bradford  
Campbell, Marcia  
Carbone, Lawrence  
Carter, Joanne  
Cheraskin, Jeri  
Coggins, Susan  
Daims, Mark  
Dillingham, Stephanie  
DiSunno, Theresa  
Drouin, Luba  
Dyoff, Mary  
Ehrenson, Sarah  
Fine, Jack  
Freedman, Karen  
Fruchter, Alan  
Glaser, Amy  
Gruppo, Barbara  
Hollenbeck, Diane  
Horn, Darrell  
Huber, Douglas  
Juarbe-Diaz, Soraya  
Kern, Maryanne  
Klein, Catherine  
Krick, Scott  
LaPorta, Paul  
Leonard, Jo-Ann  
Lowry, Nancy  
McCarthy, Rebecca  
MacDonald, Janet  
Mallinson, Kim  
Mankowski, Joseph  
Mansfield, Keith  
Marchell, Thomas  
Meunier, James  
Millis, Darryl  
Myers, Nathaniel

Neilans, Mary  
Nemzer, Penny  
Pazderski, Noreen  
Pepper, Andrew  
Perez, Maritza  
Prouty, Carolyn  
Roeder, Dolores  
Ruggles, Alan  
Sandbank, Tracey  
Sapienza, John  
Saunders, Maureen  
Schimmel, Scott  
Schott, Pamela  
Smiley, Laura  
Stephan, Michael  
Stover, Susan  
Szczotka, Susan  
Thacher, Wendy  
Thompson, Jeffrey  
Tobias, Todd  
Todd, Stephanie  
Tusch, Claire  
Vleuten, Timothy  
Weitzman, Andrew  
West, Karen  
Winnacott, Neal  
Wojcicki, Cynthia  
Zyry, Donna

## Second Year Class of 1988

Ahearn, Michele  
Anderson, Karen  
Anderson, Kim  
Aquadro, Philip  
Beane, Douglas  
Behrens, Suzanne  
Bellezza, Christine  
Birmingham, Eden  
Bierman, Naomi  
Bigelow, Judith  
Blumbergs, Albert  
Bodner, Elizabeth  
Bonda, Michael  
Borowiec, Michael  
Byrd, Marye  
Caradonna, Peter  
Carini, Carolyn  
Cline, Carolyn  
Coblentz, Scott  
Denham, Melodee  
Donato, Lisa  
Dunfee, Barbara  
Evans, Charlotte  
Falcheck, William  
Fatcheric, Eileen  
Flint, Terry  
Franz, Marc  
Friend, Judith  
Garell, Della  
Giordano, Joseph  
Grambow, Bonnie

Griffitts, Caroline  
Harff, J. Blair  
Hartmann, Elizabeth  
Heilberg, Elizabeth  
Heit, Mark  
Isaza, Ramiro  
John, Gregory  
Katz, Russell  
Kemp, Jonathan  
Klossner, Michael  
Koga, Jennifer  
Kosik, Elaine  
Laden, Sandra  
Lawrence, Howard  
Lee, Gwen  
Leo, Karin  
Lopez, Noel  
Loree, Ruth  
MacGibbon, David  
Maritato, Melina  
Maus, Paul  
Meyer, Cindy  
Munro, Anne  
Nogrady, Jill  
Panzer, Richard  
Payton, Keith  
Percey, Siobhan  
Potkewitz, Lisa  
Reiter, Sue  
Robbins, Regina  
Rubin, Jeffrey  
Ruslander, David  
Sandler, Jody  
Scrafford, Robert  
Slade, Kim  
Stalis, Ilse  
Toomey, Jane  
Troy, David  
Uhl, Elizabeth  
Walsh, Carla  
Westfall, Laura  
Wiedenkiller, Dayna  
Wilson, Alexandra  
Wooding, Sherri  
Wydner, Catherine  
Wylegala, Susan  
Youket, Richard  
Zakrzewski, Kristina

## First Year Class of 1989

Adams, Patricia  
Aromando, Michael  
Ashley, Patricia  
Babbott, Anne  
Back, Sean  
Battista, Mary  
Belman, Matthew  
Berl, Erica





Brodsky, Michael  
 Brouard, Yvonne  
 Burbank, Kyle  
 Burgos, Linda  
 Byman, Kenneth  
 Cairns, Patricia  
 Capella, Frank  
 Casavecchia, Claudia  
 Castiglione, Maria  
 Claps, Megan  
 Clement, Keith  
 Cook, Laura  
 Dattner, Gary  
 de la Varre, Byron  
 Dewey, Curtis  
 Duhaime, Roberta  
 Durso, Janet  
 Erickson, Nancy  
 Farber, Michael  
 Farewell, Corine  
 Fisher, Deborah  
 Frazier, Laura  
 Gaynor, Alison  
 Golden, Michael  
 Gong, Christina

Gorman, Douglas  
 Hecht, Nancy  
 Herr, Wayne  
 Hlaing, Teresa  
 Hoskins, Bruce  
 Isaman, Linda  
 Jones, Laura  
 Justin, Robert  
 Keller, Angela  
 Kokulis, Kimberley  
 Kondek, Franczesca  
 Kraft, Jennifer  
 Lafer, Diana  
 Laurita, James  
 Lee, Joan  
 Looney, Andrea  
 Mammato, Barbara  
 Michel, Lillian  
 Mosher, Charmaine  
 Murnan, Kathleen  
 Neth, Steven  
 Osofsky, Steven  
 Parente, Eric  
 Perry, Pamela  
 Plummer, Julie  
 Reyes-Pena, Elvin  
 Reynolds, John  
 Rivera, Warren

Ronder, Ruth  
 Schubert, Mary  
 Schulz, Kurt  
 Scott, David  
 Smith, David  
 Stein, Madeleine  
 Stephens, Martin  
 Stewart, Ruth  
 Tindale, Alan  
 Toole, Robert  
 Ulrich, Barbara  
 Van Metre, David  
 Verhave, Marya  
 Waldron, Cynthia  
 Westerman, Stephanie  
 Wirth, Randal  
 Wollney, Gwendolyn  
 Yasuda, Cheryl  
 Zahn, Amy



*Dr. Robin G. Bell, associate professor of immunology and graduate faculty representative in immunology*



# THE GRADUATE SCHOOL

## Admission to the Graduate School

The College of Veterinary Medicine maintains an active program in graduate education. This is enhanced by cooperative programs with other colleges and departments.

Applicants holding a baccalaureate or equivalent degree may enter the Graduate School of Cornell University and pursue study for the degree of M.S. and Ph.D. in the College of Veterinary Medicine and allied departments of the University. In the Graduate Field of Veterinary Medicine a degree of Doctor of Science in Veterinary Medicine (D.Sc.) is also available. Within the Field of Veterinary Medicine are the following areas of concentration: anatomy, bacteriology, epidemiology, immunology, parasitology, pathology, pharmacology, physiology, surgery, theriogenology, veterinary medicine, and virology.

In addition to the Graduate Field of Veterinary Medicine, veterinary college faculty offer instruction in the following graduate fields: Animal Science, Biochemistry, Molecular and Cell Biology, Environmental Toxicology, Immunology, Microbiology, Neurobiology and Behavior, Nutrition, Physiology,

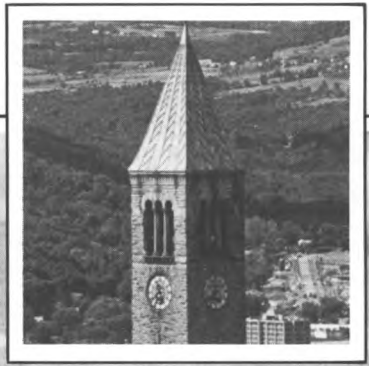
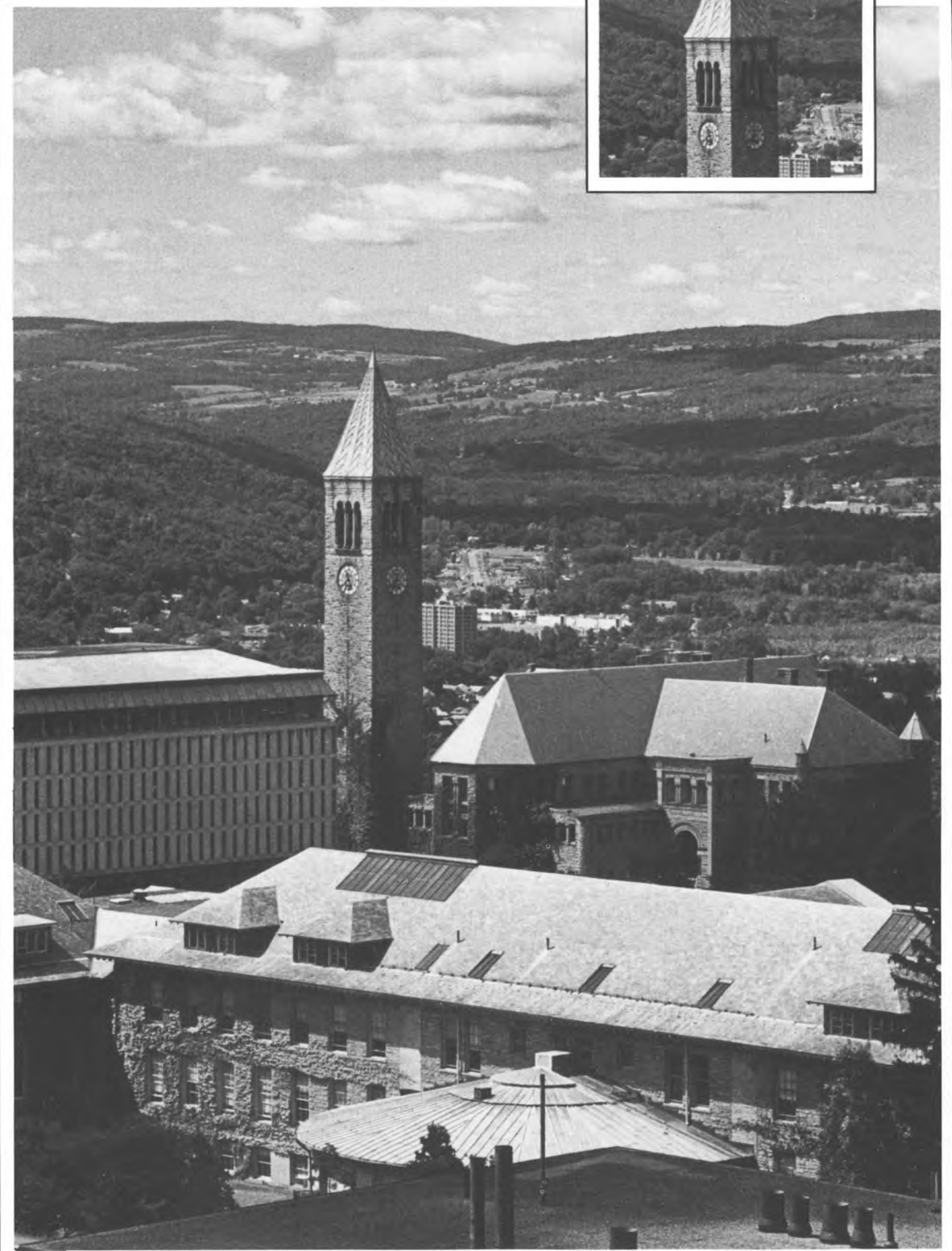
and Zoology. A complete description of each field is contained in the current Graduate School Announcement.

Students already accepted in the D.V.M. program also have the opportunity to apply for combined degree programs. The D.V.M. – M.S. program enables a veterinary student, through summer registration in the Graduate School, to obtain an M.S. at the end of the summer following the senior year.

An innovative D.V.M. – Ph.D. combined program was developed that permitted a small number of highly qualified students to work alternately on the professional or the graduate degree with the objective of eventually receiving both. A student who undertakes the combined D.V.M. – Ph.D. program must obtain special approvals from the Field of Veterinary Medicine and the college.

Further information on all of these programs may be obtained by writing to the Graduate Faculty Representative, New York State College of Veterinary Medicine, Ithaca, New York 14853.

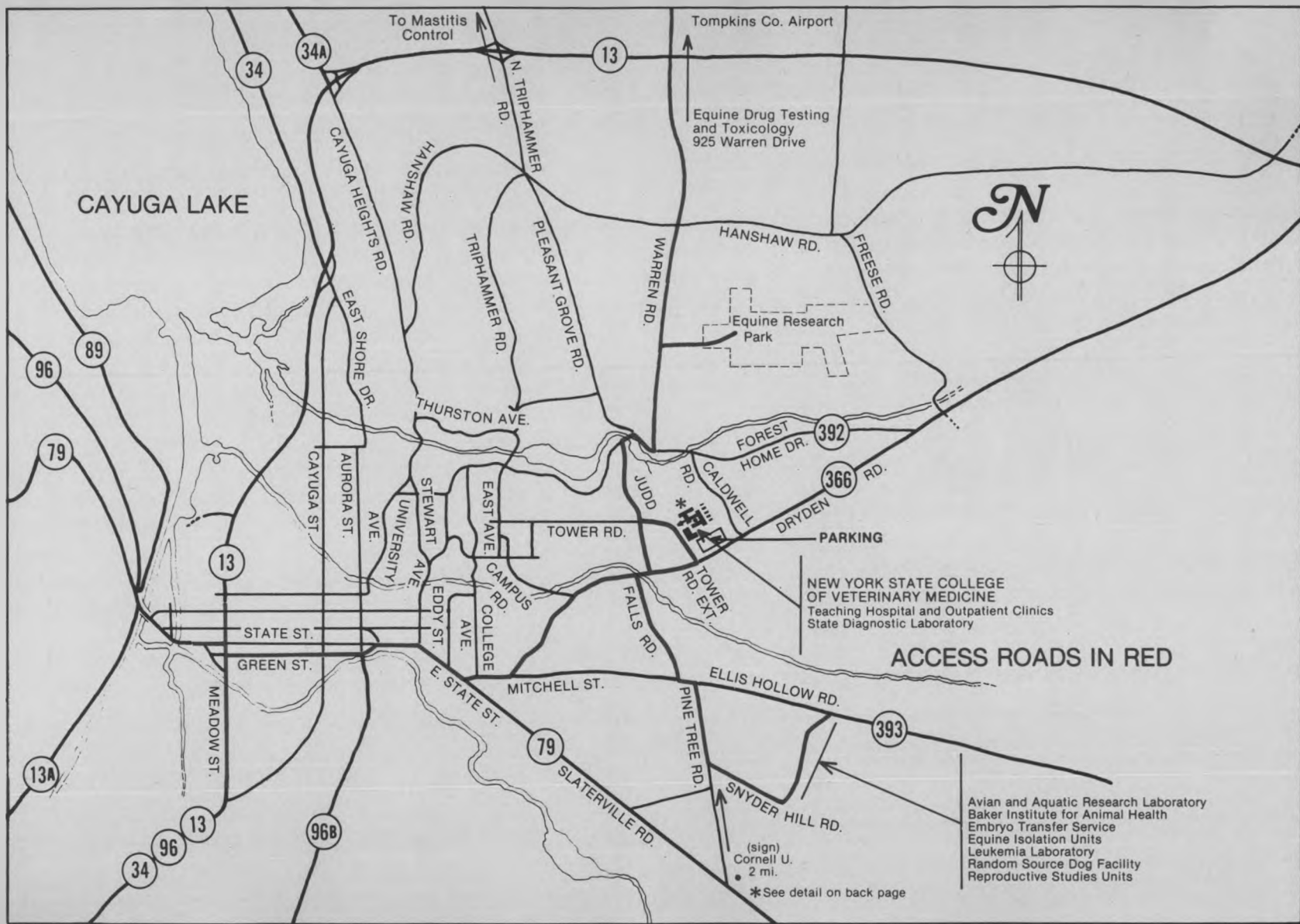
Application for admission must be made to the Graduate School, Sage Graduate Center, Cornell University. Applications for fall term or summer



*The New York State College of Veterinary Medicine is located at Cornell University, in the scenic Finger Lakes region.*

# LOCATIONS

## NEW YORK STATE COLLEGE OF VETERINARY MEDICINE





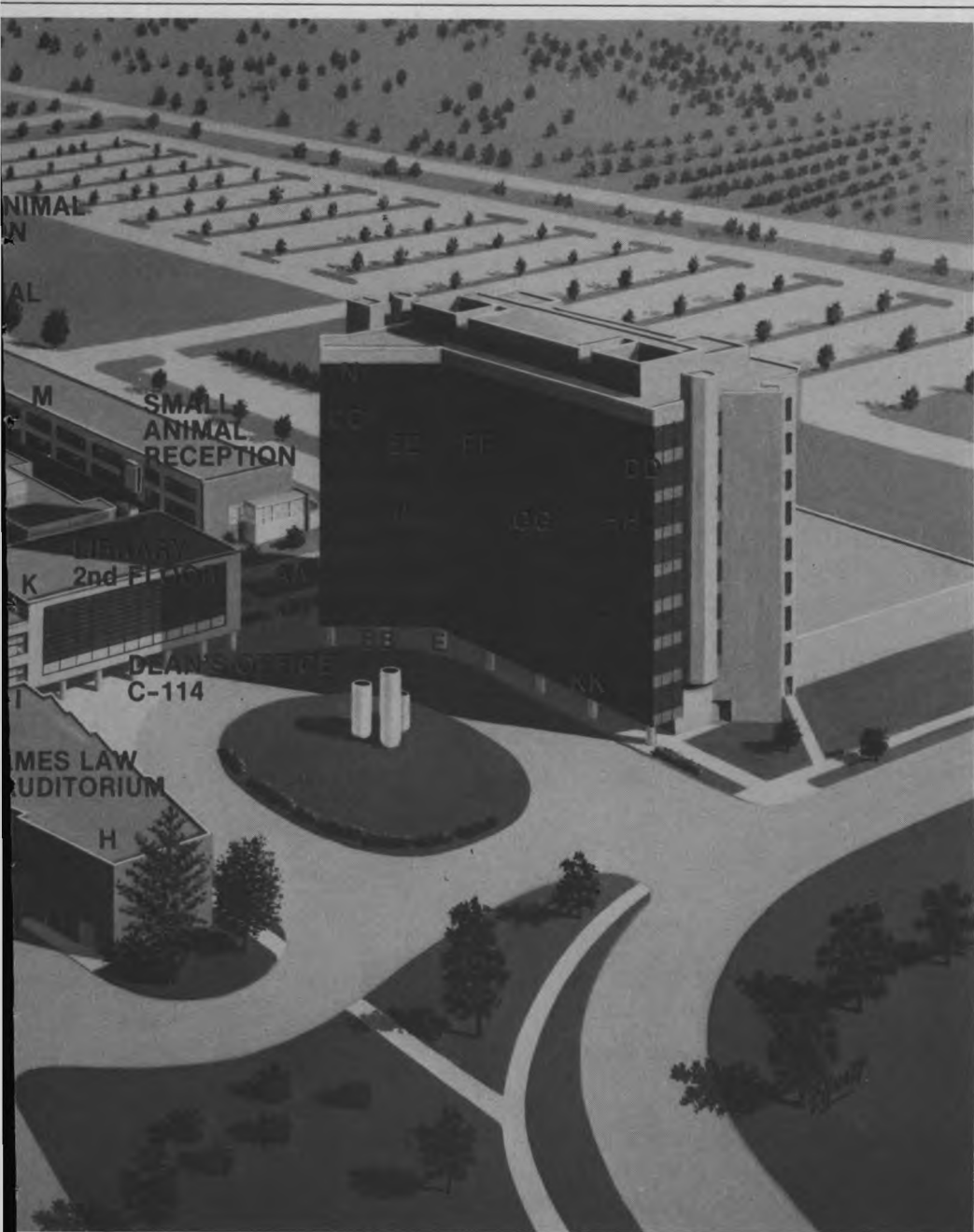
### ADMINISTRATION

- H FINANCIAL AID-  
JAMES LAW ANNEX
- F FINANCIAL SYSTEMS  
ANNEX
- K PERSONNEL - C-103
- BB PUBLIC & ALUMNI AFFAIRS  
G-2 VRT
- G PUBLIC INFORMATION  
1st FLOOR LOBBY
- CC RESEARCH & FACILITIES  
725 VRT
- M ADMINISTRATION-  
VET. MED. TEACHING HOSPITAL

### CONFERENCE

- L DIAGNOSTIC  
LAB - 1st FLOOR
- J HAGAN ROOM  
C-109
- N PHYSIOLOGY-  
828 VRT
- O PATHOLOGY  
E-215
- P ANATOMY  
D-211



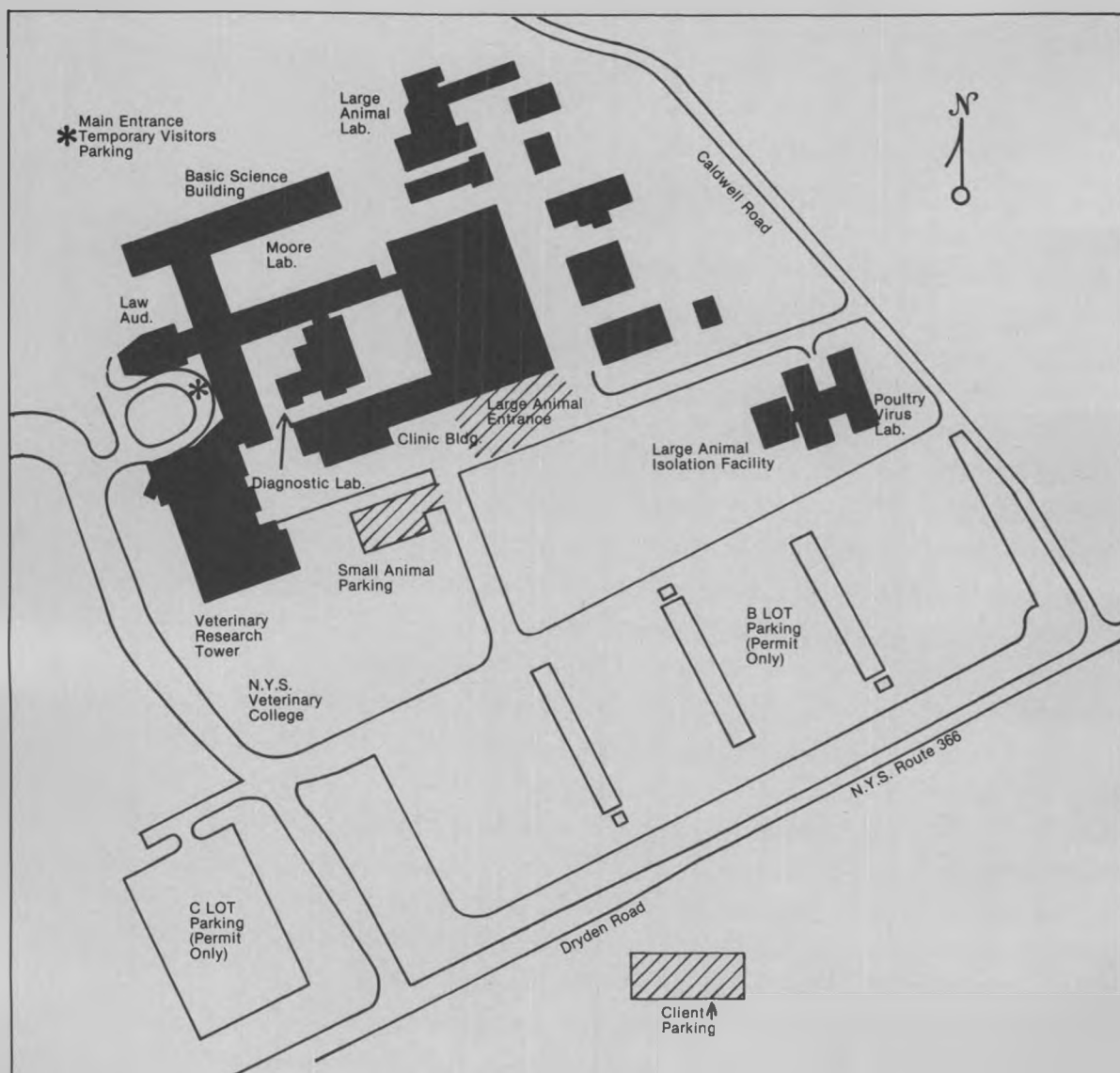


## LECTURE

A D-105  
B D-215  
C C-207  
D G-131  
E G-3

## FACILITIES

FF BIOMEDICAL ELECTRONICS 621 VRT	JJ LABORATORY ANIMAL MEDICINE G-8
KK CAFETERIA	I MAIN LOBBY
EE COMPUTER RESOURCES 624 VRT	HH MICROBIOLOGY 616 VRT
II CONTINUING EDUCATION 426 VRT	DD PHYSIOLOGY 717 VRT
GG FELINE HEALTH CENTER 618 VRT	AA RECEIVING



## Visitor Parking

Parking on campus is by permit only except in certain metered and time-zone areas. Parking regulations are in effect from 7:30 a.m. to 5:00 p.m., Monday through Friday, or as posted. Access to the central campus by vehicle is restricted from 7:30 a.m. to 5:00 p.m. weekdays. Regulations are enforced by ticketing and towing. Vehicles parked in life-safety zones, in reserved handicapped spaces, and in loading and service areas (posted as S areas) without the proper permit are subject to immediate towing.

Campus buses (CU Transit) operate Monday through Friday, 5:45 a.m. to 6:15 p.m. all year. The fare is 25¢ (exact change) for visitors or a valid student bus pass or

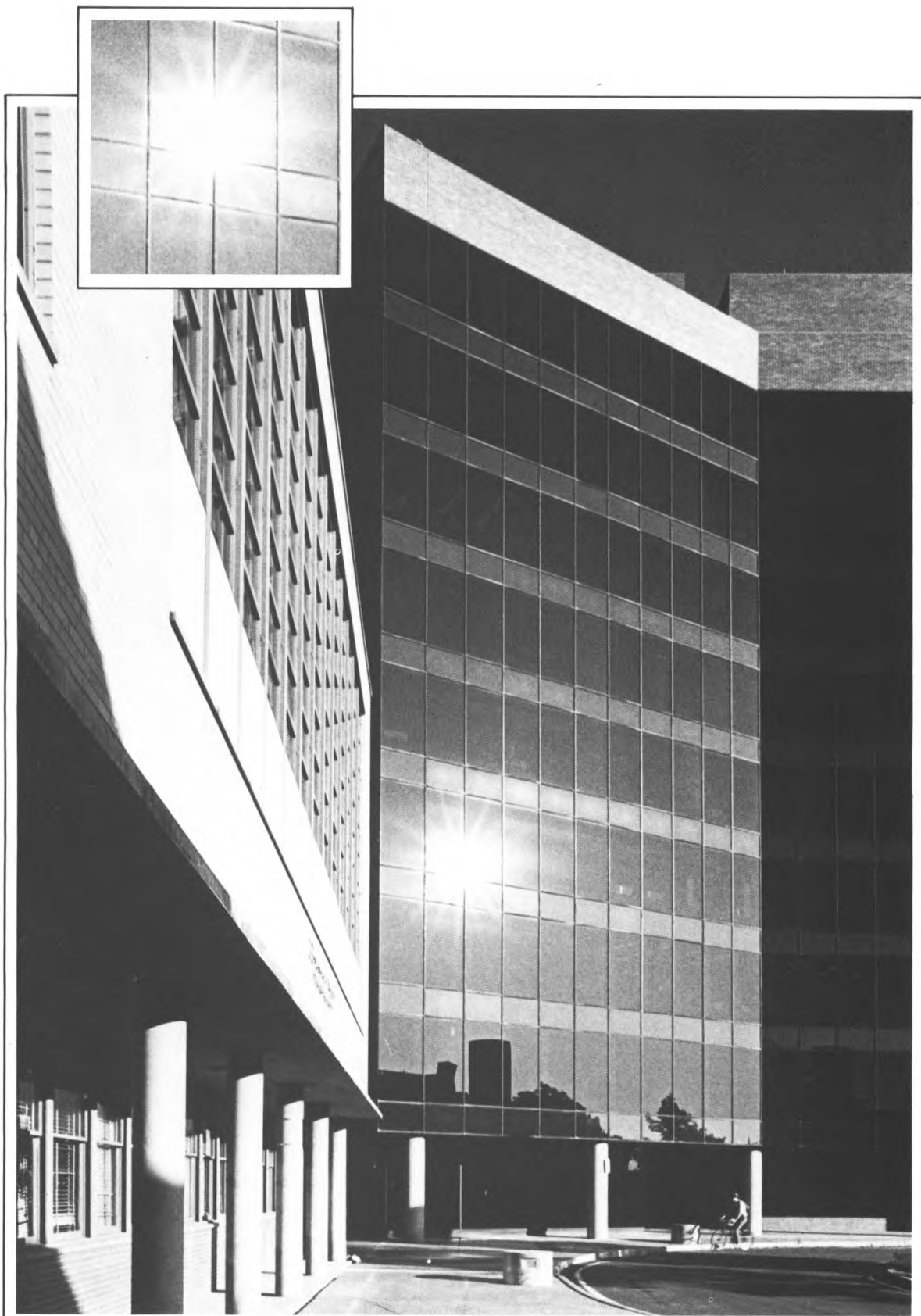
faculty/staff identification card. There are bus stops for the College of Veterinary Medicine on Tower Road at the northwest corner of the Veterinary Research Tower.

Special parking permits for brief visits are available at the main reception area in Schurman Hall. Consult with the department you are visiting for more extended permits.

If you have questions about temporary permits, you can ask the guards at the traffic booths on campus. Call Public Safety at 256-1111 or pick up a blue-light telephone in case of emergency or for parking or vehicle information after hours, twenty-four hours a day.

Maps, parking, and travel regulations are available at the traffic booths.





*Schurman Hall and the Veterinary Research Tower*



*Dr. Robert H. Wasserman, chairman of the Department of Physiology and chairman of the Section of Physiology, Division of Biological Sciences*

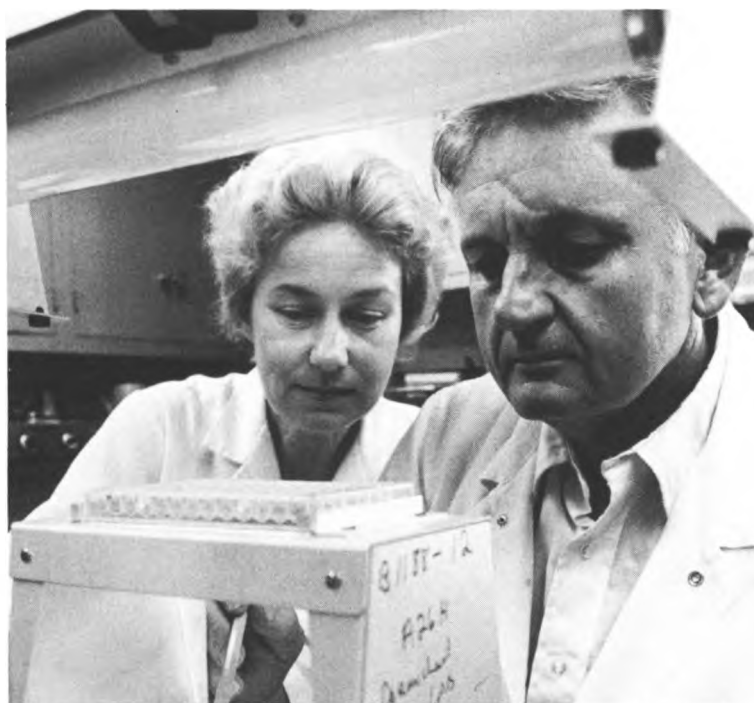
admission will be accepted until March 1; applications for spring-term admission will be accepted until October 1.

All applicants to the graduate Field of Veterinary Medicine should submit results of the Graduate Record Examinations Aptitude Test. Scores of an advanced test are also desirable.

The College of Veterinary Medicine, alone or in combination with other departments of the University, offers advanced students excellent opportunities for study and investigation. Its situation gives it abundant and varied material for research, and it has ample research facilities. It encourages graduate and advanced students to pursue independent investigations. Courses of study especially adapted to advanced work and research will be found in the general course descriptions in this Announcement.

A student who holds the degree of Doctor of Veterinary Medicine from a recognized college or school in the United States or Canada may transfer one year's residence credit for that work toward the Doctor of Philosophy degree whenever the student's Special Committee certifies that the work done in the years of professional study formed an integral part of the work required for the doctorate and was of equivalent quality.





*Dr. Leland E. Carmichael, graduate faculty representative in veterinary medicine and scientific director of the James A. Baker Institute*

## Graduate Students 1985-86

This list includes the Fields of Veterinary Medicine, Immunology, Physiology, Toxicology, Microbiology, Animal Science, Neurobiology, and Zoology.

Abbott, David P. (Australia), B.V.Sc., M.V.S.  
 Ahmad, Ali (Pakistan), D.V.M., M.Sc.  
 Albowitz, Brigit (Germany), B.S.  
 Al-Luwaيمي (Saudi Arabia), B.V.Sc.  
 Anttila, Marjukka (Finland), D.V.M.  
 Baines, Joel D., B.S., V.D.M.  
 Baldwin, Charles A., B.S., D.V.M., M.S.  
 Ball, Barry A., A.S., D.V.M.  
 Binienda, Zbigniew (Poland), D.V.M.  
 Blackburn, Daniel, B.S., M.S.  
 Boudreaux, Mary K., D.V.M.  
 Boyd, Lee Ellen, B.S., M.S.  
 Brooks, Barbara, B.S., M.S.  
 Buscaglia, Celina (Argentina), D.V.M., M.S.  
 Carberry-Goh, Karen, B.S., D.V.M., M.V.P.M.  
 Christiansen, Janet, B.S.  
 Christie, Peter, B.A., M.S.  
 Chunekamrai, Siraya (Thailand), D.V.M.

Cliff, William, B.S.  
 Clifford, Charles, B.S., D.V.M.  
 Corapi, Wayne, B.A., D.V.M.  
 Covey, Thomas, B.S.  
 Crosetti, Carlos F. (Argentina), D.V.M.  
 Crump, Anne L., B.A.  
 Curtis, Charles R., B.S.  
 Davies, Christopher J., B.S., D.V.M.  
 Denholm, Laurence J. (Australia), B.V.Sc.  
 Donaldson, William, B.V.Sc.  
 Donis, Ruben (Argentina), D.V.M.  
 Dowd, Joseph, B.S., M.A.  
 Durham, Stephen K., B.S., D.V.M.  
 Durkin, Jule, B.S.  
 Dzanis, David, D.V.M.  
 Eggers, Diane K., B.S.  
 Ehrhardt, Eric E., B.A., D.V.M.  
 El Tom, Sakina (Sudan), B.V.Sc.  
 Enriquez, Francisco J. (Mexico), B.S., M.D.  
 Figueroa, Jorge (Chile), M.D.  
 Forsythe, William, B.S., D.V.M., M.S.  
 Frank, David A., B.S.  
 Frederick, Kimberly Ann, B.S.  
 Galan, Jorge (Argentina), D.V.M.  
 Gomez, Steve, B.S., M.S.  
 Gregg, Douglas, B.S., D.V.M., M.Ed.  
 Hamudikuwanda, Humphrey (Zimbabwe), B.S.  
 Hickey, Gerard (Ireland), M.B.V.  
 Higgins, William, D.V.M.  
 Horne, William, D.V.M.  
 Ibrahim, Samia M. (Egypt), M.Sc.  
 Johnson, Brian, B.S.  
 Lacey, Steven, B.S., M.S.  
 Landy, Ronald B., B.S., V.M.D.  
 Lee, Edgar, B.S.  
 Leipold, Harry, B.S.  
 Letwin, Bruce, B.S.  
 Loeffler, David, B.S., D.V.M.  
 McCallus, Daniel, B.S.  
 McColl, Kenneth (Australia), B.Sc., B.V.Sc.  
 McDonald, Thomas, B.S.  
 Massman, Angela (Chile), M.D.  
 Meschter, Carol, D.V.M., M.S.  
 Milian-Suazo, Feliciano (Mexico), D.V.M.  
 Mishra, Prabin (India), B.S., B.V.Sc., M.S.  
 Mitchell, William, B.S., D.V.M.  
 Mohr, F. Charles, B.S., D.V.M.  
 Molina, Patricia (France), D.V.M.  
 Monosson, Emily, B.S.  
 Mukhtar, Maowia (Sudan), B.V.Sc.  
 Munson, Linda, B.A., D.V.M.  
 Muscarella, Donna, B.S., M.S.  
 Myers, Thomas J., B.S., V.M.D.  
 Neale, Kathy, B.S.  
 Neuenschwander, Suzanne, B.S., M.S., D.V.M.  
 Olmsted, Stephen, B.S.  
 Papke, Roger, B.S.  
 Pearce-Kelling, Susan, B.S.  
 Picut, Catherine A., B.A., V.M.D.  
 Pimental, Maria, B.S., M.S.  
 Platko, Joseph, B.S.  
 Quirk, Susan, B.S., M.S.  
 Rankin, Bruce, B.A.  
 Rivas, Ariel (Uruguay), D.V.M.  
 Rhodes, Linda, V.M.D.  
 Rudman, Rebecca, B.A., M.S.  
 Sadowski, Drew, B.A.  
 Scott, Shannon, B.S.  
 Shaw, Eve, B.S.  
 Shoaf, Susan, B.S., M.S.  
 Spitsbergen, Jan, B.S., D.V.M.  
 Stahlbaum, Cathi, B.S., M.S.  
 Stoddart, Cheryl, B.S., M.S.  
 Suter, Maja (Switzerland), D.V.M.  
 Tavares, Luis M. (Portugal), D.V.M.  
 Temple, Miles R., B.S.  
 Thompson, Donald (Australia), B.V.Sc.  
 Trotter, Karen, B.S., M.S.  
 Ullmann, Margaret, B.S.  
 Valentine, Beth A., B.S., D.V.M.  
 Wahl, Christina, B.S.  
 Wales, Susan K. (Canada), D.V.M.  
 Wang, Ching-Hua (People's Republic of China), B.S., M.D., M.S.  
 Wanger, Audrey, B.S., M.S.  
 Waruiru, Robert (Kenya), B.V.M.  
 Weinstock, Daniel, D.V.M.  
 Wilkinson, John E., B.S., M.S., D.V.M.  
 Yason, Carmencita (Philippines), D.V.M., M.S.



*Dr. Donald H. Lein, associate professor of theriogenology and acting chairman of the Department of Preventive Medicine*



# *INTERNSHIPS AND RESIDENCIES*

## **Veterinary Medical Teaching Hospital**

### **Intern Program**

Intern programs of the Veterinary Medical Teaching Hospital are available in the Ambulatory Clinic and Small Animal Clinic (medicine and surgery).

#### **Objectives**

The intern program is a non-degree program that provides training for practice, clinical teaching, and specialty board eligibility. A one-year intern program with rotation in medicine and surgery is a prerequisite for most residency programs and for board certification. The intern program provides education towards a high level of academic and clinical proficiency.

#### **Program**

The intern in the Small Animal Clinic will be assigned on a rotating basis to the various medical and surgical services and the anesthesiology service. Each service consists of one faculty member, a resident, and an intern. Fourth-year students will be assigned to these services during the academic program. Interns in the Ambulatory Clinic are assigned to one of four services, each of which is the

responsibility of one faculty member. Schedules will be arranged so that the intern has the opportunity to work with most of the faculty in the area of the program selected.

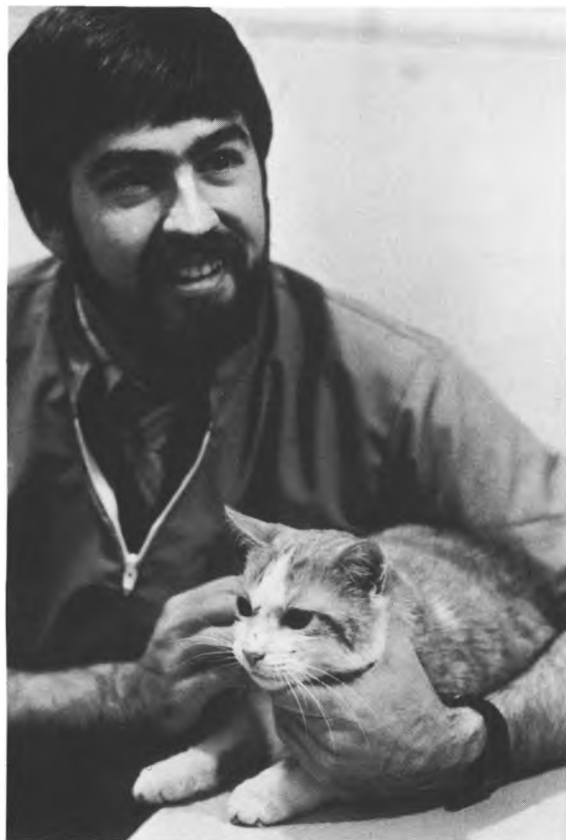
Interns will share weekend duty and the responsibility for emergency service on a rotating basis with faculty available for consultation. The resident assigned to the service is responsible for the direct supervision of the intern and, along with the faculty member, will evaluate the performance of the intern at the end of the rotation.

Interns will be expected to attend and participate in hospital rounds and seminars. With permission of the director of interns, an intern may attend a limited number of elective courses. The intern is required to prepare a clinical paper suitable for publication under the supervision of a faculty member of the intern's choice.

The intern program extends from approximately June 15 of the year of acceptance to June 30 of the next year.

### **Residency Program**

Residencies are offered in anesthesiology, clinical pathology, dermatology, large animal medicine, large animal surgery, ophthalmology, radiology, small animal medicine, small animal surgery, and



the ambulatory clinic. The training programs are directed toward specialty board certification.

#### **Objectives**

- To educate the resident to a high level of academic and clinical proficiency in a specific clinical discipline
- To fulfill the postgraduate education requirements of the various specialty boards
- To provide the resident experience in the methodology of professional veterinary medical education and experience in clinical teaching
- To assist in providing a high level of specialized veterinary service to the public and the profession

#### **Program**

Each resident will be supervised by the section chief of the specialty and designated faculty in the section.

The residency program will consist of advanced training in a specific clinical discipline. Progression through the program will lead to increased responsibility. Descriptions of each of the specific residency programs are available from the director of the Teaching Hospital.

Each clinical service consists of one faculty member, residents, and an intern. Fourth-year students are assigned to the service during the academic program. The resident will be responsible for the direct supervision of the intern on the service and will participate in the clinical teaching of the fourth-year students. Residents will have the opportunity to work with all the faculty in the discipline of the residency.

A minimum of two calendar years is required for successful completion of the program (three years in clinical pathology, radiology, and small animal surgery).

## **Postdoctoral Training in Veterinary Pathology**

### **General Information**

The Department of Pathology maintains an active training program for veterinarians interested in pursuing a career in veterinary pathology. Based on the premise that pathologists must be functional in their discipline, a biphasic program has been developed in which the initial period of training (one to three years) emphasizes competency in applied (diagnostic) pathology and meeting the eligibility requirements for specialty board certification by the American College of Veterinary Pathologists. Interns and residents who express good research potential during the initial phase of training are encouraged to pursue as graduate students advanced research training leading to a Ph.D. in experimental pathology (two to three years). Thus, postdoctoral trainees completing the program (three to five years) may enter the job market with board certification and an advanced degree.

### **Eligibility**

Applicants must have a degree in veterinary medicine and a strong interest in pathology. Previous experience in the field is desirable but not mandatory. Applications are accepted through December of each year. Candidates are selected by February 1 for appointments that begin July 1 through September 1 of each year.

### **Training**

Interns and residents acquire disciplinary skills by participating in the departmental diagnostic service programs, a daily seminar series, and selected courses in the veterinary and graduate school curriculum. Necropsy pathology (3,500 accessions

per year), surgical pathology (10,000 accessions per year), and the pathology of laboratory animals and exotic species (1,500 accessions per year) form the basis for training in anatomic pathology. Advanced research training is carried out according to the policies of the Graduate School, Cornell University.

## Special Programs

### Training in Environmental and Toxicological Pathology

Funds are available from the National Institute of Environmental Health Sciences to support the training of individuals interested in this area. This is a degree-granting program requiring admission to the Graduate School. The National Institutes of Health (NIH) payback agreement applies to trainees under this grant.

### Residency Training in Veterinary Pathology and/or Clinical Pathology

The National Cancer Institute will provide funds for up to three years of residency training in veterinary pathology/clinical pathology. This is a non-degree program specifically aimed at preparing veterinarians for specialty board certification by the American College of Veterinary Pathologists. The NIH payback agreement applies to trainees supported by this grant.

### San Diego Zoo Residency Program

Veterinarians who have completed a minimum of one year of pathology internship at Cornell University are eligible for a special one-year period of residency training in the pathology of exotic animal species. Trainees may return to complete their training at Cornell University following the zoo residency.

### Postdoctoral Training in Aging Research

The Department of Pathology, in conjunction with the Cornell Medical College, offers postdoctoral training for veterinarians in the field of aging research. Prerequisites include enrollment in Cornell's Graduate School, at least one year of supervising residency training in veterinary pathology, and documentation of research interest and potential in the field of aging. Successful completion leads to a Ph.D. in experimental pathology (pathology of aging) and eligibility for specialty board certification by the ACVP.

### Senior Residencies, Necropsy Pathology, and Surgical Pathology Services

Two senior residency positions are available each year with six months responsibility in each of the two services noted above. Senior residents work closely with pathologists, supervise first- and second-year residents, maintain liaison with clinical staff and faculty, aid in the daily administration of both services, and exploit the publication potential of pathologic material. Ample time is available for

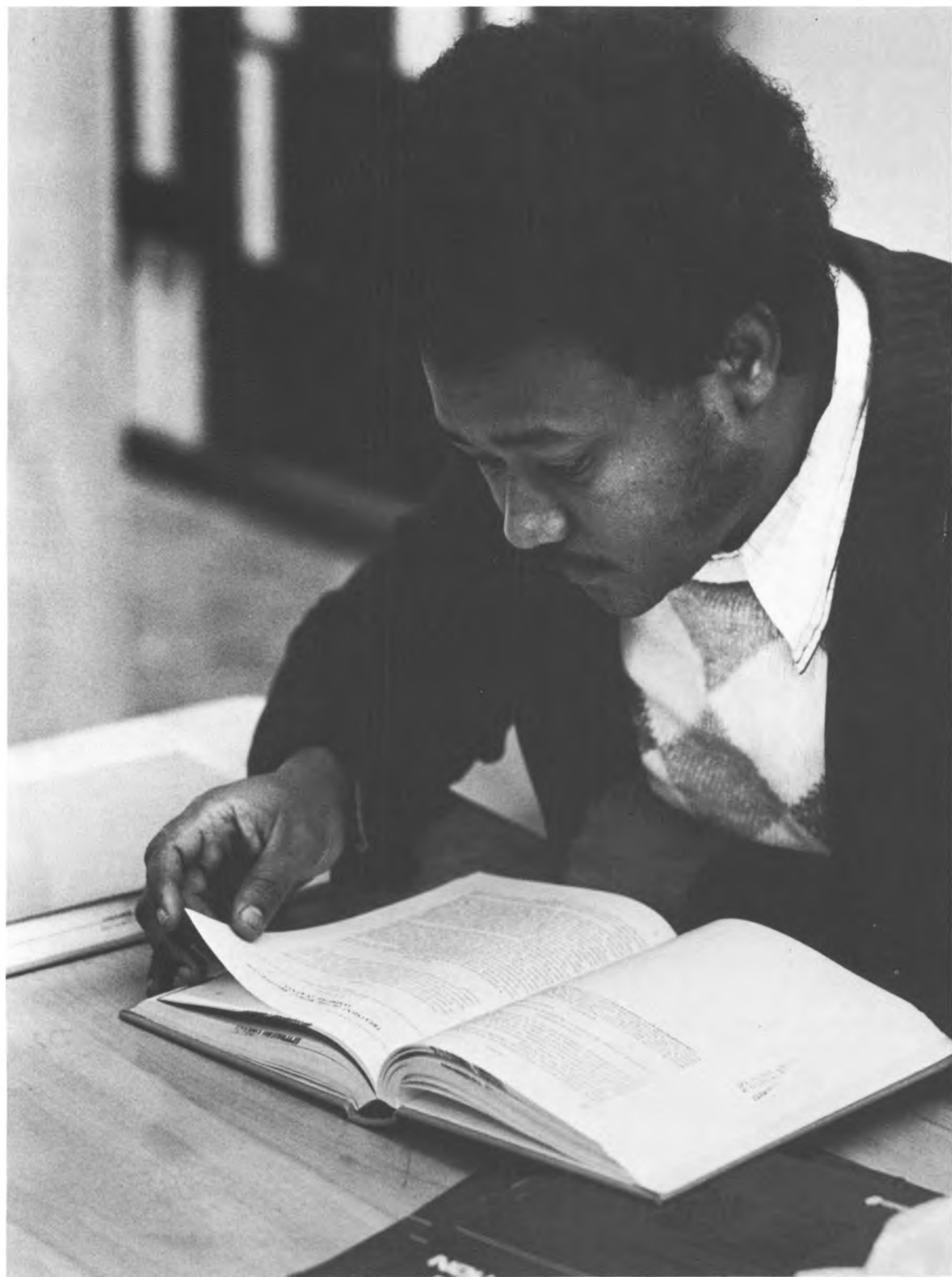


final preparation for board certification by the American College of Veterinary Pathologists. Eligibility is determined by completion of at least two years of supervised residency training in veterinary pathology. Stipends depend on background and experience, following the NIH postdoctoral fellowship stipend schedule.

### Off-Campus Training in the Biomedical Community

Effort is made to tailor the period of research training to the interests and career goals of the applicant, with ample opportunity provided for off-campus training in the biomedical community. Individuals interested in developing a career in comparative pathology may receive training in the Pathology Departments of the State University Medical Schools, and the Cornell Medical Center, New York City.





*The Flower Veterinary Library contains over seventy-five thousand volumes and regularly receives about twelve hundred periodicals and series titles.*





# RESOURCES OF THE COLLEGE

## The College Library

The library, endowed by a gift from Roswell P. Flower, governor of New York when the college was founded, is named the Flower Veterinary Library in his honor. It is maintained partly by endowment funds and partly by appropriations from the state. The library is on the second floor of Schurman Hall. The large reading room, seating seventy, has display shelves for current journals, and areas of indexes, abstracts, and other reference books. The three levels of adjoining stacks include journals and monographs and are open for use. Individual study carrels are also available.

The library contains over seventy-five thousand volumes and regularly receives about twelve hundred periodicals and series titles. This represents a worldwide selection of veterinary titles plus publications in the biomedical sciences, designed to support undergraduate, graduate, and research programs. Through the various libraries on the campus, nearly five million volumes and more than fifty thousand journals and serials are available to students. These collections, interlibrary loans, and photo-duplicated materials supplement the research potential of the veterinary library, which is rich in historical and basic research resources as well

as recent monographs and selected government publications. A bimonthly newsletter is issued listing recent acquisitions.

Information on policies and suggestions for the use of the library are provided to new students and faculty. A printed guide is also available. Additional instruction in bibliographic research is available for advanced problems.

A computer-assisted literature search service, called COMPASS at Cornell, is available in the Flower Veterinary Library. It provides rapid access to numerous bibliographic data bases, including MEDLINE, CAB ABSTRACTS, and BIOSIS.

The college's Autotutorial Center contains a collection of over five hundred titles in slide, audiotape, and videotape format. These audiovisual materials enhance academic programs as well as provide opportunities for self study.

A microcomputer facility was established in the library in early 1985 to enhance the college's educational programs. The six microcomputers are available for use primarily by students and feature a variety of software, including word processing, an electronic spreadsheet, and database management as well as computer-based tutorials.



*Dr. Fred W. Quimby, associate professor of pathology and director of the Center for Research Animal Resources*

## Computing Facility

The New York State College of Veterinary Medicine has developed an integrated hospital computer system designed to meet the operational, administrative, and research needs of a veterinary teaching hospital. The interactive on-line system was developed using the MUMPS language and currently supports over eighty-five user terminals throughout the college. Functional areas within the hospital that have been computerized include medical records, admissions desks, clinical laboratory, pharmacy, radiology, ambulatory clinic, and pathology. In addition, the State Diagnostic Laboratory has been automated and a number of administrative functions such as college personnel records, student admissions and records, college and departmental accounting, student job placement, word processing, and electronic mail have been implemented on the computer.

## Veterinary Medical Teaching Hospital

Each year more than twenty-two thousand cases are treated through the Veterinary Medical Teaching Hospital. An outreach of the hospital, the ambulatory service, has ten field units (consisting of a specially equipped vehicle, a clinician, and three or four students) that travel throughout the area, serving over four hundred farms. The teaching hospital's highly trained specialists, sophisticated equipment, and capable support staff provide an invaluable resource for the state when health problems occur in the agricultural or equine industries, in the wildlife population, or among companion animals.

In addition to training for third- and fourth-year students, the teaching mission of the hospital encompasses the postgraduate education of interns and residents.

The teaching hospital is the proving ground for ideas and technologies developed in basic research. The clinical faculty provide the essential blend of medical, surgical, and investigative skills necessary to bring technology's promise to fruition. The rewards of clinical veterinary research extend far beyond animal health. Pacemakers, prosthetic hips, artificial heart valves, and new surgical procedures that now benefit man were all developed first in animals.

## Research Facilities

Facilities for research are extensive and are constantly expanding both on campus and at nearby peripheral locations. On-campus research is conducted in the nine-story Veterinary Research Tower as well as in many other laboratories in the college's central complex. Extensive support facilities, including large and small animal holding areas, complement the various research programs. Off-campus research facilities include a 133-acre complex on Snyder Hill, about three miles from the main campus, where laboratories have been constructed for conducting research on infectious, parasitic, and metabolic diseases. Many of these facilities are located at the Baker Institute, while others are associated with the Cornell Bovine Research Center, the Department of Avian and Aquatic Animal Medicine, the Department of Laboratory Animal Services, and the Department of Clinical Sciences. Other off-campus research facilities are located at the Equine Research Park, the Mastitis Control Laboratory, and the Equine Drug Testing and Research Laboratory. Recent additions to the college's research facilities include renovations to provide laboratory and office space for the Department of Pharmacology; facilities for deriving and housing specific-pathogen-free dogs, calves, and poultry; and several barns for horses.



*Dr. Edward J. Dubovi, assistant professor of virology, Diagnostic Laboratory*

### **The James A. Baker Institute for Animal Health**

In September 1950 the Board of Trustees of Cornell University established a new unit in the New York State College of Veterinary Medicine: the Veterinary Virus Research Institute. The name of the institute was changed in 1975 to honor the founding director's contributions to veterinary medicine and to reflect the broader scope of the institute's current activities. The Cornell Research Laboratory for Diseases of Dogs and the Cornell Equine Genetics Center are the principal operating sections of the institute.

The institute's primary mission is to prevent loss from infectious diseases in animals. To this end, basic research is conducted on organisms that cause diseases, in order to increase knowledge of their nature, means of spread, and methods whereby their spread can be controlled. Another objective of the institute is to provide advanced training of personnel in immunology, infectious diseases, and arthritis. A limited number of graduate students, postdoctoral fellows, and visiting investigators are accepted.

The institute's facilities have recently been renovated and expanded to accommodate its current programs. Among the new facilities are buildings for

the breeding and rearing of specific-pathogen-free dogs and laboratory rodents, and two new service laboratories. One of these units is dedicated to the production of monoclonal antibodies using cell hybridization techniques and the other to the analysis of particles and cells by flow cytometry. The two service laboratories are used by institute staff and by faculty and students from other departments and divisions of Cornell.

The institute's research and service laboratories have been equipped for research at the cutting edge of biotechnology. Current programs are making use of recombinant DNA techniques, cell hybridization, flow cytometry, and embryo manipulation to answer fundamental questions about infectious diseases, osteoarthritis, and genetics.

### **Cornell Bovine Research Center**

The Cornell Bovine Research Center fosters research to improve the health, productivity, and well-being of cattle. It serves as a focal point for scientists at the University with expertise and interests in a broad spectrum of scientific disciplines related to the dairy and beef cattle industries. It encourages fundamental cooperative research programs in



*The college maintains its own computer facility with over 125,000 case records on line.*

health, metabolism, breeding, and management for improved efficiency of production in dairy and beef cattle. It disseminates current information to the cattle industry, identifying areas in need of increased study, and seeks funding to support its research programs.

The first building of the center, the Bovine Specific Pathogen Free Facility, has been completed and is used for the production and maintenance of calves that are completely free of known pathogens or that have a well-defined previous exposure and are specific-pathogen free.

A second facility, the Reed Farm Multipurpose Research Unit, is being developed to provide additional specialized animal housing and research laboratory space for cattle research projects.

### **Cornell Feline Health Center**

The purposes of the Cornell Feline Health Center are (1) to promote and conduct research with the goal of preventing or curing diseases of the domestic cat, (2) to provide continuing education on feline health to feline practitioners and cat owners, and (3) to aid feline practitioners when new or unknown diseases occur.

Established in 1974, the Cornell Feline Health Center formalized a program begun ten years earlier to study infectious diseases of the cat and expanded that program to study all diseases that pose a significant threat to the health of cats.

Under the direction of Dr. Fredric W. Scott a group of faculty, graduate research assistants, and staff from several departments within the New York State College of Veterinary Medicine collaborate in the quest to understand, prevent, and cure feline diseases. Each investigator conducts independent research in his or her area of expertise with help from investigators in whatever other area of expertise is needed. This multidisciplinary research may involve investigators in areas from clinical medicine to the most basic sciences in order to solve a particular disease problem.

Periodic newsletters and information bulletins with new information on feline diseases and cat care are sent to veterinarians and cat fanciers.

### **Poultry Disease Research**

Poultry disease research is done on the campus in conjunction with the diagnostic and teaching laboratory and at the P. Philip Levine Laboratory on Snyder Hill, about three miles from the campus. A forty-one-unit disease isolation building forms part

of the facilities on the campus; these units are used for studies on chickens, pet birds, and other avian species and on fish and shellfish. The facilities at Levine Laboratory consist of a two-story building well equipped for research in the bacterial, viral, and parasitic diseases of chickens and turkeys.

Specific-pathogen-free flocks of several genetically distinct strains of chickens are maintained in a special breeder facility for the production of chicks and embryos. Also, there are several pens for holding young birds on a tract of land of several acres at the Levine Laboratory.

### **Cornell Equine Health Center**

The Equine Research Park, located on two hundred acres of land about one mile from the college, includes, in addition to the barns and laboratories, a half-mile track used in both diagnosis and research. It houses about two hundred horses. Research is conducted on reproduction, nutrition, behavior, bone and joint disease, pharmacology, infectious disease, and the special problems of the equine athlete.

The only New York State quarantine facility for contagious equine metritis (C.E.M.) operates at the college's Equine Research Annex, on Snyder Hill, less than a mile from the Equine Clinic.

### **Public Service**

Five regional laboratories, at Canton, Earlville, Kingston, Springville, and Ithaca, provide mastitis diagnostic services to the dairy industry of New York State. Field veterinarians examine herds and supervise bacteriological examinations of 216,555 cows. About five thousand visits to farms are made each year.

Poultry diagnostic laboratories serving the chicken, duck, and turkey producers of the state are located in Kingston, Ithaca, and Eastport, Long Island. Diagnostic and research activities are aimed at viral and bacterial vaccines for ducks and chickens. More than thirty-seven million doses of vaccines are produced each year. There are approximately a thousand commercial producers raising over ten million chickens, four million ducks, and half a million turkeys in the state.

The Diagnostic Laboratory on the Ithaca campus provides laboratory analyses, consults on diagnostic and field problems, and assists practicing veterinarians in promoting animal health. The laboratory operates disease control programs for the New York State Department of Agriculture and Markets and the agriculture industries of the state. Its laboratory support in the area of preventive medicine involves epidemiological surveillance, investigation of disease outbreaks, and special programs concerned with such problems as equine infectious anemia and brucellosis. The laboratory conducts about 685,718 tests a year.

The Equine Drug Testing and Research Program was formed in 1971, at the request of the racing



*Dr. Neil L. Norcross, professor of immunochemistry and secretary of the college*

industry, to prevent drug abuse in horses. Horse racing is the largest spectator sport, and the industry is one of the major sources of tax revenue to state and local governments. Laboratories for testing are located at all New York State pari-mutuel tracks, and there is a research and reference center in Ithaca. Over 228,000 samples are tested each year. The integrity of this very sophisticated program is essential.

The college has established a diagnostic and investigative program at the Marine Biological Laboratory, Woods Hole, Massachusetts, to study the health of marine animals. Supported by the National Institutes of Health, its goals are to investigate disease outbreaks and develop diagnostic methods for recognizing infectious, parasitic, and toxicologic diseases. Colonies of aquatic animals, especially invertebrates, are being developed as defined laboratory animals for research.



*Dr. Francis H. Fox, professor of veterinary medicine and obstetrics*



# FACULTY AND ADMINISTRATION

## University Administration

Frank H. T. Rhodes, *president of the University*

Robert Barker, *University provost*

Thomas H. Meikle, Jr., *provost for medical affairs*

William G. Herbster, *senior vice president*

Joseph M. Ballantyne, *vice president for research and advanced studies*

William D. Gurowitz, *vice president for campus affairs*

Harold D. Craft, Jr., *acting vice president for facilities and business operations*

James E. Morley, Jr., *vice president and treasurer*

Richard M. Ramin, *vice president for public affairs*

James A. Sanderson, *chief investment officer*

Joan R. Egner, *associate provost*

Barry B. Adams, *vice provost for undergraduate education*

Kenneth M. King, *vice provost*

James W. Spencer, *vice provost*

Walter J. Relihan, Jr., *University counsel and secretary of the corporation*

Joseph B. Bugliari, *dean of the University Faculty*

## College Administration

Robert D. Phemister, *dean*

Charles G. Rickard, *associate dean*

Lennart P. Krook, *associate dean for postdoctoral education*

Neil L. Norcross, *secretary of the college*

Robert B. Brown, *assistant dean for administration*

John C. Semmler, *assistant dean for facilities and research administration*

Ann Marcham, *assistant to the dean for instructional support and special projects*

Ralph A. Jones, *assistant to the dean for public affairs*

## New York State College of Veterinary Medicine Advisory Council 1985-86

Stanley M. Aldrich, D.V.M.,  
Chairman  
Practitioner  
537 Sunrise Highway  
West Babylon, New York 11704

Holly Cheever, D.V.M.  
Practitioner  
R.D. #1, Box 286  
Voorheesville, New York 12186

Barbara Hunter  
Executive Vice President  
Dudley-Anderson-Yutzy  
40 West Fifty-seventh Street  
New York, New York 10019

Edgar A. King  
Deputy Commissioner  
Department of Agriculture and  
Markets  
Executive Offices  
Campus, Building #81  
Albany, New York 12235

Joseph P. King  
Consultant, Genesee Valley  
Regional Market Authority  
900 Jefferson Road  
Rochester, New York 14623

Gary A. Lee  
Vice President  
I.C. Industries  
1625 I Street  
Washington, D.C. 20006

John W. McCann, D.V.M.  
Member of Assembly  
State of New York  
919 Legislative Office Building  
Albany, New York 12248

Richard McGuire  
President  
New York Farm Bureau  
Cambridge, New York 12816

Gerald P. Murphy, M.D.  
Director  
Roswell Park Memorial Institute  
666 Elm Street  
Buffalo, New York 14263

L. Stephen Riford, Jr.  
The Senate  
State of New York  
707 Legislative Office Building  
Albany, New York 13021

Isadore Rosenfeld, M.D.  
President, Foundation for Biomedical  
Research  
Clinical Professor of Medicine  
Cornell Medical College  
125 East Seventy-second Street  
New York, New York 10021

Dale Stansbury, Ph.D.  
Director, Governmental Relations  
National Association of State  
Universities and Land Grant Colleges  
One Dupont Circle, Suite 710  
Washington, D.C. 20032

John V. Steiner, D.V.M.  
Practitioner  
Bullet Hole Road  
Mahopac, New York 10541  
Arnold N. Weinberg, M.D.  
Professor of Medicine  
Harvard Medical School  
Infectious Disease Unit  
Massachusetts General Hospital  
Fruit Street  
Boston, Massachusetts 02114

Stephen H. Weiss  
Managing Partner  
Weiss, Peck & Greer  
One New York Plaza  
New York, New York 10004

## Standing Committees of the College Faculty

### General Committee

*Elected by faculty*

S. G. Campbell (1983–86), chairman  
H. N. Erb (1985–88)  
R. P. Hackett (1985–88)  
R. H. Jacobson (1984–87)  
D. M. Noden (1984–87)

### Graduate Field Executive Committee

*Elected by graduate faculty*

L. E. Carmichael (1986),  
graduate faculty representative  
W. L. Castleman (1988)  
F. A. Kallfelz (1987)  
L. P. Krook (ex officio)  
K. A. Schat (1985)  
B. C. Tennant (1986)

### University Tenure Appeals Committee

*Elected by faculty*

S. G. Campbell (1981–86)  
L. E. Carmichael (1983–88)  
A. Dobson (1982–87)  
J. M. King (1985–90)  
N. L. Norcross (1984–89)

### Faculty Council of Representatives

*Elected by faculty*

W. L. Castleman (1983–86)  
A. Dobson (1984–87)  
G. M. Dunny (1983–86)  
H. N. Erb (1985–88)  
W. O. Sack (1984–87)  
B. C. Tennant (1985–88)

### Admissions Committee

R. A. Corradino  
H. N. Erb  
D. L. Graham  
R. P. Hackett, Jr.  
W. E. Hornbuckle  
K. A. Houpt  
D. W. Scott

### Class Advisory Committees

#### Class of 1989

E. Bergman  
R. Corradino  
J. Cummings  
A. deLahunta  
H. Erb  
H. Evans

T. R. Houpt  
D. Noden  
R. Pollock  
D. Tapper  
J. Wootton

#### Class of 1988

To be named

#### Class of 1987

J. Blue  
M. Collier  
S. Dill  
D. Ferguson  
T. French  
J. Georgi  
C. Hall  
T. Kern

#### Class of 1986

R. G. Bell  
S. G. Campbell  
R. B. Hillman  
W. E. Hornbuckle  
F. A. Kallfelz  
J. M. King  
R. M. Lewis  
W. O. Sack  
D. K. Walton

### Committee on Scholarships

S. A. Center  
J. R. Georgi  
T. J. Kern  
R. M. Lewis  
D. M. Noden  
D. S. Postle  
J. C. Thompson, Jr.  
A. J. Winter

### Committee on Deficient Students

R. C. Riis, chairman  
C. Fewtrell  
R. D. Gleed

### Committee on Student Conduct

S. G. Campbell, chairman  
F. H. Fox  
J. M. King  
G. Lust  
J. F. Randolph

### Committee on International Programs

K. Schat, chairman  
S. G. Campbell  
G. C. Poppensiek  
A. Torres  
J. Carter, Class of 1987



## Committee on Curriculum\*

*Elected by faculty*

D. M. Noden (1985-88), chairman  
W. L. Castleman (1985-88)  
H. J. Harvey (1985-87)  
R. B. Hillman (1985-86)  
R. C. Riis (1985-87)

\*Student representatives are elected from each class.

## Committee on Animal Use and Care

R. M. Lewis, chairman  
B. W. Calnek  
J. H. Gillespie  
W. Hansel  
D. D. McGregor  
P. Nathanielsz  
D. M. Noden  
G. W. G. Sharp  
D. L. Wassom  
J. E. Gilmartin, ex officio  
F. W. Quimby, ex officio

## Committee on College Library

J. Fabricant, chairman  
M. J. Appel  
W. O. Sack  
M. C. Smith  
G. A. Weiland

## Pharmacy and Therapeutics Committee

W. E. Hornbuckle, chairman  
M. A. Collier  
R. D. Gleed  
W. C. Rebhun  
W. S. Schwark  
M. E. White  
R. C. Johnson, ex officio

## SUNY Senate

H. F. Schryver, senator

## Special Committees 1985-86

### Seventy-eighth Annual Conference for Veterinarians: January 7, 8, 9, 1986

G. Bilinski  
S. L. Fubini  
C. Guard  
T. J. Kern  
A. Torres  
J. F. Zimmer  
C. E. Short, ex officio

## Senior Seminar Committee

D. S. Postle, chairman  
A. E. Dietze  
R. D. Gleed  
D. L. Graham  
J. Scarlett Kranz  
M. C. Smith

## Biohazard Safety Committee

R. A. Corradino, chairman  
J. G. Babish  
E. J. Dubovi  
F. W. Quimby  
J. C. Semmler, ex officio

## Computer Advisory Committee

E. Loew, chairman  
J. M. Lewkowicz  
R. V. Pollock  
M. E. White

## Student-Faculty Liaison Committee

Student representatives and faculty members are elected by the student body in the fall. One student serves as chairperson. Membership lists will be circulated at that time.

## Graduate-Faculty Liaison Committee

Graduate students select the committee.

## Honor Code Committee

Student and faculty representatives are elected by the student body.

## Faculty

### Emeritus Professors

Bentick-Smith, John, A.B., D.V.M.; Clinical Pathology  
Boyer, Clyde I., Jr., V.M.D., M.S.; Laboratory Animal Medicine  
Bruner, Dorsey W., B.S., Ph.D., D.V.M.; Veterinary Microbiology  
Danks, A. Gordon, B.S., D.V.M.; Veterinary Surgery  
Dukes, H. Hugh, B.S., D.V.M., M.S., D.H.C., D.Sc. (honorary); Veterinary Physiology  
Geary, Jack C., D.V.M.; Physical Biology  
Habel, Robert E., D.V.M., M.Sc., M.V.D.; Veterinary Anatomy

Hitchner, Stephen B., B.S., V.M.D.; Avian and Aquatic Animal Medicine  
Kirk, Robert W., D.V.M.; Small Animal Medicine  
Leonard, Ellis P., B.S., D.V.M.; Small Animal Surgery  
McEntee, Kenneth, D.V.M., Ph.D. (honorary); Veterinary Pathology  
Melby, Edward C., Jr., D.V.M.; Clinical Sciences  
Olafson, Peter, D.V.M., M.S.; Veterinary Pathology  
Roberts, Stephen J., D.V.M., M.S.; Veterinary Medicine, Obstetrics  
Sellers, Alvin F., V.M.D., M.Sc., Ph.D.; Veterinary Physiology  
Sheffy, Ben E., M.S., Ph.D.; Nutrition  
Whitlock, John H., D.V.M., M.S.; Parasitology

### Professors

Allen, William R., B.V.Sc., Ph.D.; Adjunct, Animal Physiology  
Appel, Max J., D.V.M., Ph.D.; Veterinary Virology  
Axelrod, David, M.D.; Adjunct, Veterinary Microbiology  
Bergman, Emmett N., D.V.M., M.S., Ph.D.; Veterinary Physiology  
Brighton, Carl T., M.D., Ph.D.; Adjunct, Clinical Sciences  
Callis, Jerry J., D.V.M., M.S.; courtesy, Animal Diseases Exotic to the United States  
Calnek, Bruce W., D.V.M., M.S.; Avian and Aquatic Animal Medicine; chairman of the Department of Avian and Aquatic Animal Medicine  
Campbell, S. Gordon, M.V.Sc., Ph.D.; Immunology, acting chairman of the Department of Microbiology  
Carmichael, Leland E., D.V.M., Ph.D.; John M. Olin Professor of Virology  
Cummings, John F., D.V.M., M.S., Ph.D.; Veterinary Anatomy  
Cypess, Raymond H., D.V.M., Ph.D.; Microbiology and Epidemiology, director of the Diagnostic Laboratory  
deLahunta, Alexander, D.V.M., Ph.D.; Veterinary Anatomy, chairman of the Department of Clinical Sciences



*Dr. Victor Rendano, associate professor of radiology*

Dobson, Alan, Ph.D., M.A., Sc.D.;  
Veterinary Physiology

Dodds, W. Jean, D.V.M.; adjunct,  
Pathology

Evans, Howard E., Ph.D.; Veterinary  
Anatomy, chairman of the  
Department of Anatomy

Fabricant, Julius, V.M.D., M.S.,  
Ph.D.; Avian and Aquatic Animal  
Medicine

Fox, Francis H., D.V.M.; Veterinary  
Medicine and Obstetrics

Gallo, Robert C., M.D., D.Sc.;  
courtesy, Veterinary Microbiology

Gasteiger, E. L., Jr., M.S., Ph.D.;  
Physical Biology

Georgi, Jay R., D.V.M., Ph.D.;  
Parasitology

Gillespie, James H., V.M.D.;  
Veterinary Microbiology

Graham, David L., D.V.M., Ph.D.;  
Avian Pathology

Hansel, William, M.S., Ph.D.;  
Veterinary Physiology, Liberty Hyde  
Bailey Professor of Animal  
Physiology

Houpt, T. Richard, V.M.D., M.S.,  
Ph.D.; Veterinary Physiology

Kallfelz, Francis A., D.V.M., Ph.D.;  
Veterinary Medicine

King, John M., D.V.M., Ph.D.;  
Veterinary Pathology

Krook, Lennart P., D.V.M., Ph.D.;  
Veterinary Pathology, associate dean  
for postdoctoral education

Lee, Kyu M., M.D., Ph.D.; Virology

Leibovitz, Louis, V.M.D.; Avian and  
Aquatic Animal Medicine

Lengemann, Fred W., M.N.S.,  
Ph.D.; Radiation Biology

Lewis, Robert M., D.V.M.;  
Veterinary Pathology, chairman of  
the Department of Pathology

Litwin, Stephen D., M.D.; adjunct,  
Veterinary Microbiology

Lust, George, Ph.D.; Physiological  
Chemistry

McGregor, Douglas D., M.D.,  
D.Phil.; Veterinary Immunology,  
director of the James A. Baker  
Institute for Animal Health

Mebus, Charles A., D.V.M.,  
M.S., Ph.D.; courtesy, Microbiology/  
Pathology

Nathanielsz, Peter W., M.B., Ph.D.,  
M.D.; Theriogenology

Norcross, Neil L., M.S., Ph.D.;  
Immunochimistry, secretary of the  
college

Noronha, Fernando M., D.V.M.;  
Veterinary Virology

Nosanchuk, Jerome S., M.D.;  
adjunct, Clinical Pathology

Phemister, Robert D., D.V.M.,  
Ph.D.; Veterinary Pathology, dean of  
the college

Poppensiek, George C., V.M.D.,  
M.S.; James Law Professor of  
Comparative Medicine

Posso, Manuel, M.D.; adjunct,  
Comparative Pathology



*Dr. Thomas J. Kern, assistant professor of ophthalmology*

Rickard, Charles G., D.V.M., M.S., Ph.D.; Veterinary Pathology, associate dean of the college

Sack, Wolfgang O., D.V.M., Ph.D., Dr.Med.Vet.; Veterinary Anatomy

Scott, Fredric W., D.V.M., Ph.D.; Veterinary Virology, director of the Cornell Feline Health Center

Sharp, Geoffrey W. G., B.Pharm., Ph.D., D.Sc.; Pharmacology, chairman of the Department of Pharmacology, director of the Division of Biological Sciences

Short, Charles E., D.V.M., M.S.; Anesthesiology

Spitalny, George L., Ph.D.; adjunct, Immunology

Tapper, Daniel N., V.M.D., Ph.D.; Physical Biology

Tennant, Bud C., D.V.M.;

Comparative Gastroenterology

VanPoznak, Alan, M.D.; adjunct, Anesthesiology

Wasserman, Robert H., M.S., Ph.D.; chairman of the Department of Physiology, chairman of the Section of Physiology, Division of Biological Sciences

Winter, Alexander J., D.V.M., M.S., Ph.D.; Veterinary Microbiology

Wolf, Kenneth E., M.S., Ph.D.; courtesy, Avian and Aquatic Animal Medicine

Wootton, John F., M.S., Ph.D.; Biochemistry

### **Associate Professors**

Antczak, Douglas F., V.M.D., Ph.D.; Immunology

Arnoczky, Steven P., D.V.M.; adjunct, Clinical Sciences

Babish, John G., M.S., Ph.D.; Toxicology and Epidemiology

Bell, Robin G., Ph.D.; Immunology

Bowser, Paul R., M.S., Ph.D.; Avian and Aquatic Animal Medicine

Castleman, William L., M.S., D.V.M., Ph.D.; Pathology

Cooper, Barry J., Ph.D.; Veterinary Pathology

Corradino, Robert A., M.S., Ph.D.; Physiology

Edwards, Nathan J., D.V.M.; adjunct, Medicine

Erb, Hollis N., D.V.M., M.S., Ph.D.; Epidemiology

Hackett, Richard P., D.V.M., M.S.; Surgery

Hall, Charles E., D.V.M.; Reproductive Studies

Harvey, H. Jay, D.V.M.; Surgery

Henion, John D., M.S., Ph.D.; Toxicology

Hornbuckle, William E., D.V.M.; Small Animal Medicine

Haupt, Katherine A., V.M.D., Ph.D.; Veterinary Physiology

Jacobson, Richard H., M.S., Ph.D.; Immunoparasitology

Lein, Donald H., D.V.M., Ph.D.; Theriogenology, acting chairman of the Department of Preventive Medicine

Lowe, John E., D.V.M., M.S.;  
Veterinary Surgery, director of  
Equine Research Park

Maylin, George A., D.V.M., Ph.D.;  
Toxicology and Environmental  
Health, director of the Equine Drug  
Testing Program

Minor, Ronald R., V.M.D., Ph.D.;  
Veterinary Pathology

Morgan, Donald O., M.S., D.V.M.,  
Ph.D.; courtesy, Microbiology

Myers, David D., D.V.M., M.S.,  
Ph.D.; courtesy, Pathology

Noden, Drew M., M.S., Ph.D.;  
Anatomy

Postle, Donald S., D.V.M., M.S.;  
Veterinary Science

Poston, Hugh A., M.S., Ph.D.;  
courtesy, Avian and Aquatic Animal  
Medicine

Quimby, Fred W., V.M.D., Ph.D.;  
Pathology, director of the Center for  
Research Animal Resources

Rebhun, William C., D.V.M.;  
Medicine

Rendano, Victor, V.M.D., M.S.;  
Radiology

Riis, Ronald C., M.T., D.V.M., M.S.;  
Clinical Ophthalmology

Schat, Karel A., D.V.M., Ph.D.;  
Avian and Aquatic Animal Medicine

Schryver, Herbert F., D.V.M., Ph.D.;  
Pathology

Schwark, Wayne S., D.V.M., M.Sc.,  
Ph.D.; Veterinary Pharmacology

Scott, Danny W., D.V.M.; Medicine

Slauson, David O., D.V.M., Ph.D.;  
Veterinary Pathology

Smith, Mary C., D.V.M.; Medicine

Straw, Barbara E., D.V.M., Ph.D.;  
Diagnostic Laboratory

Thompson, John C., Jr., M.S., Ph.D.;  
Environmental Radiation Biology

Timoney, John F., M.V.M., M.S.,  
Ph.D., D.Sc.; Veterinary  
Bacteriology

Torres, Alfonso, D.V.M., M.S.,  
Ph.D.; Veterinary Virology

Trotter, Eric J., D.V.M., M.S.;  
Surgery

White, Maurice E., D.V.M.;  
Medicine

### Assistant Professors

Blue, Julia T., D.V.M., Ph.D.;  
Clinical Pathology

Brooks, Bradford O., M.S., Ph.D.;  
adjunct, Immunology

Brunner, Michael A., Ph.D.,  
D.V.M.; Reproductive Studies  
Center, Sharon A., D.V.M.;  
Medicine

Clark, Larry C., M.P.H., Ph.D.;  
Epidemiology

Collier, Michael A., D.V.M.; Surgery

Dietze, Amy E., D.V.M.; Radiology

Dill, Stephen G., D.V.M.; Medicine

Dubovi, Edward J., M.A., Ph.D.;  
Virology

Dunny, Gary M., Ph.D.; Bacteriology

Ferguson, Duncan D., V.M.D.,  
Ph.D.; Pharmacology

Fewtrell, Clare M.S., D.Phil.;  
Pharmacology

Flanders, James A., D.V.M.; Clinical  
Sciences

Fortune, Joanne E., M.S., Ph.D.,  
Physiology

French, Tracy W., D.V.M.; Clinical  
Pathology

Fubini, Susan S., D.V.M., Clinical  
Sciences

Gilmore, Dougald R., B.V.Sc.;  
Surgery

Gleed, Robin D., B.V.Sc., D.V.A.;  
Anesthesiology

Grant, Christopher K., M.I.Biology,  
Ph.D.; courtesy, Immunology

Guard, Charles L., Ph.D., D.V.M.;  
Medicine

Hawkins, Kathleen L., D.V.M.,  
Pathology

Kern, Thomas J., D.V.M.;  
Ophthalmology

Lesser, George V., D.D.S.; adjunct,  
Veterinary Pathology

Moise, N. Sydney, D.V.M., M.S.;  
Medicine

Nguyen, Hai T., V.M.D., M.D.;  
adjunct, Pathology

Oswald, Robert E., Ph.D.;  
Pharmacology

Parrish, Colin R., Ph.D.;  
Microbiology

Peterson, Mark E., D.V.M.; courtesy,  
Medicine

Pollock, Roy V., D.V.M., Ph.D.;  
Medical Informatics, director of the  
Center for Medical Informatics

Powers, Pamela A., D.V.M.;  
Medicine

Randolph, John F., D.V.M.;  
Medicine

Reimers, Thomas, M.S., Ph.D.;  
Endocrinology

Scarlett Kranz, Janet M., D.V.M.,  
M.P.H., Ph.D.; Epidemiology

Schlafer, Donald H., D.V.M., M.S.,  
Ph.D.; Pathology

Shivaprasad, Hulimangala, Ph.D.,  
M.S.; Avian and Aquatic Animal  
Medicine

Summers, Brian A., M.Sc., Ph.D.;  
Pathology

Sunderji, Shirazall G., M.B., Ch.B.;  
adjunct, Obstetrics-Gynecology

Todhunter, Rory J., B.V.Sc., M.S.;  
Clinical Sciences

Walton, Donna K., D.V.M.;  
Medicine

Wassom, Donald L., Ph.D.;  
Immunogenetics

Weiland, Gregory A., Ph.D.;  
Pharmacology

Woods, Gordon L., D.V.M., M.S.,  
Ph.D.; Theriogenology

Zimmer, James F., D.V.M., Ph.D.;  
Internal Medicine

### Senior Research Associates

Callihan, Donald R., M.S., Ph.D.;  
Diagnostic Laboratory

Concannon, Patrick W., Ph.D., M.S.;  
Physiology

Fabricant, Catherine G., M.S.;  
Microbiology

Fullmer, Curtis S., M.S., Ph.D.;  
Physiology

Haider, Sajjad A., M.S., Ph.D.;  
Avian and Aquatic Animal Medicine  
(Eastport)

Hoenig, Margarethe, D.V.M.,  
Ph.D.; Pharmacology

Holmes, Dorothy F., D.V.M., Ph.D.;  
Microbiology

Horne, William A., D.V.M.;  
Pharmacology

Poore, Edward R., D.Phil.;  
Theriogenology

Shin, Sang J., D.V.M.; Diagnostic  
Laboratory

Wentworth, Richard A., M.S.,  
Ph.D.; Physiology

Wolfe, Marilyn J., D.V.M., Ph.D.;  
Avian and Aquatic Animal Medicine

### Senior Clinicians

Hillman, Robert B., D.V.M., M.S.;  
Clinical Sciences

### Lecturers

Ryan, Gerald D., Clinical Sciences

## Instructors

Mulligan, David M., M.P.H.;  
Microbiology  
Shelly, Sonja M., D.V.M.; Pathology  
Tyner, Carroll L., D.V.M.; Clinical  
Sciences

## Directors, Laboratory Operations

Cole, Michael W.; Equine Drug  
Testing  
Dean, William F., M.S., Ph.D.; Avian  
and Aquatic Animal Medicine  
(Eastport)  
Dillingham, Lloyd A., D.V.M.;  
Center for Research Animal  
Resources  
Ebel, Joseph G., Jr.; Equine Drug  
Testing  
Eckerlin, Richard H., D.V.M.;  
Equine Drug Testing  
Fronckowiak, Andrew F., M.S.;  
Equine Drug Testing (Buffalo/  
Batavia)  
Georgi, Marion, D.V.M.; Diagnostic  
Laboratory  
Hopkins, Stephen E., M.A.; Equine  
Drug Testing  
Howard, Daniel A.; Equine Drug  
Testing (Finger Lakes)  
Myers, John A.; Equine Drug Testing  
(Vernon Downs)  
Schlau, Richard A.; Equine Drug  
Testing (Monticello)  
Schoettker, Eric G., M.S.; Equine  
Drug Testing (Yonkers/Roosevelt)  
Sheasley, Richard C.; Equine Drug  
Testing

## Field Veterinarians

Bennett, Gary J., D.V.M.; Mastitis  
Control (Canton)  
Hayes, Gerald L., D.V.M.; Mastitis  
Control (Earlville)  
Julius, Frederic S., D.V.M.; Mastitis  
Control (Kingston)  
Mitchell, Grayson B., D.V.M.; Avian  
and Aquatic Animal Medicine  
(Kingston)  
Sandhu, Tirath S., M.S., Ph.D.;  
Avian and Aquatic Animal Medicine  
(Eastport)

Schulte, Hal F. III, D.V.M., M.S.;  
Mastitis Control  
Sellick, Gene, D.V.M.; Mastitis  
Control (Springville)

## Teaching Hospital

Director: to be named  
Manager, client relations and  
personnel services: R. Harris  
Pharmacy: R. Johnson  
Medical records: D. Marquis  
Animal care personnel:  
R. Lawrence  
Farrier: Marshall E. Conklin  
Supervisor of technical services:  
Sue Long  
Manager of secretarial services:  
Judy McPherson

## Sections

**Medicine:** B. C. Tennant, chief  
(internal medicine, gastro-  
enterology)

*Faculty:* S. Center (internal  
medicine), A. de Lahunta  
(neurology), S. Dill (internal  
medicine), R. P. Dinsmore (internal  
medicine), F. H. Fox (internal  
medicine, obstetrics), C. Guard  
(internal medicine),  
W. E. Hornbuckle (internal  
medicine), K. A. Houpt (animal  
behavior), D. Jasko (internal  
medicine), F. A. Kallfelz (clinical  
nutrition, internal medicine), T. Kern  
(ophthalmology), L. Laratta  
(ophthalmology), S. Moise  
(cardiology), M. Petersen (internal  
medicine), P. Powers (internal  
medicine), J. F. Randolph (internal  
medicine), W. C. Rebhun (internal  
medicine, ophthalmology),  
R. C. Riis (ophthalmology),  
D. W. Scott (dermatology),  
M. C. Smith (internal medicine,  
poisonous plants), L. Tyner  
(anesthesiology), D. Walton  
(dermatology), M. E. White (internal  
medicine), J. F. Zimmer (internal  
medicine, gastroenterology)

*Senior research associate:* J. Boyd

*Residents:* J. Baker, R. Burger,  
N. Neaderland, J. A. Perdrizet,  
C. Ross, F. W. K. Smith, Jr.,  
P. Tamke

**Surgery:** H. J. Harvey, chief (soft  
tissue)

*Faculty:* M. A. Collier, J. A. Flanders  
(soft tissue), S. Fubini,  
D. R. Gilmore (orthopedics),

R. P. Hackett, J. E. Lowe,  
R. Todhunter, E. J. Trotter  
(orthopedics)  
*Residents:* C. Carberry, D. Craig,  
J. Glennon, R. Pankowski, J. Parker,  
P. Tithof

**Anesthesiology:** C. E. Short, chief  
*Faculty:* R. D. Gleed  
*Residents:* G. Goldberg,  
J.-L. Stauffer

**Theriogenology:** P. Nathanielsz,  
chief  
*Faculty:* P. W. Concannon, R. H.  
Foote, C. E. Hall, W. Hansel,  
R. B. Hillman, M. Smith,  
A. J. Winter, G. Woods

*Senior research associate:*  
E. R. Poore

**Clinical Pathology:** R. M. Lewis,  
chief  
*Faculty:* J. T. Blue, T. French  
*Residents:* S. Shelly, B. von Beust

**Radiological and Physical  
Diagnostics:** F. A. Kallfelz, chief  
(nuclear medicine)

*Faculty:* A. E. Dietze (radiology),  
E. L. Gasteiger (electrodiagnostics),  
J. Geary (radiology), V. T. Rendano,  
Jr. (radiology), J. R. Stouffer,  
D. N. Tapper  
*Senior lecturer:* G. D. Ryan

## Interns

*Ambulatory Clinic:* N. C. Ralston,  
S. M. Stehman  
*Small Animal Clinic:* A. B. Cox,  
T. R. Fry, D. J. Joffe,  
A. L. Shakespeare, S. L. Vaden

## Diagnostic Laboratory

Director: Professor R. H. Cypess  
209 Diagnostic Laboratory  
607/256-5454, ext. 2900

Associate professors: J. D. Henion,  
R. H. Jacobson, D. H. Lein,  
assistant director (head, Field  
Services), G. A. Maylin (head,  
Division of Toxicology), A. Torres

Assistant professors: E. J. Dubovi  
(director, Virology Laboratory),  
T. J. Reimers (director,  
Endocrinology Laboratory)

Directors of laboratory operations:  
M. E. Georgi, S. J. Shin  
Assistant director, bacteriology:  
D. Callihan



*An applied anatomy class*



## DESCRIPTION OF COURSES

**U**nder each department heading there are brief descriptions of the courses offered. Most of these courses are a part of the veterinary core curriculum; some are elective to veterinary students or are given primarily for graduate students or students of other colleges of the University.

Courses in other colleges available to all Cornell students are listed in *Courses of Study*.

### Course Numbering System

500 series: D.V.M. core curriculum courses

600 series: elective courses for D.V.M. and other students

700 series: graduate-level courses

## Anatomy

Professor H. E. Evans, chairman  
D-218 Schurman Hall  
607/256-5454, ext. 2553

Professors: J. F. Cummings, A. deLahunta, W. O. Sack; associate professor: D. M. Noden; teaching assistants: P. C. Mishra, W. B. Forsythe

The first-year veterinary student is faced with a new vocabulary, a daily opportunity to see what is going on in the clinics and postmortem, and a full class

schedule. The Department of Anatomy tries to acclimate the students to this new regime by advising them how to budget their time and how to use their textbooks, microscopes, and instruments, and by supervising their dissections. The manuals and textbooks written by the faculty are designed for the courses offered.

The major objective of the department is to help students learn the anatomical facts and vocabulary necessary for the comprehension of journal literature and clinical courses. Secondary objectives are to produce new anatomical information, train future anatomists, and help other departments, programs, or practitioners as necessary. Facilities and materials are available for graduate research in neuroanatomy and clinical neurology; gross, microscopic, and ultrastructural anatomy; and developmental, comparative, and applied anatomy.

The interests and experiences of the faculty members are diverse and allow them to counsel in a variety of subjects.

**500 Gross Anatomy: Small Animal** First year, fall. 4 credits. Letter grades only. Hours to be arranged. H. E. Evans, A. deLahunta, D. M. Noden, and assistants. The structure of the typical mammal is studied by detailed systematic and regional dissection of the dog. The lectures, which are supplemented by demonstrations and films, consider the comparative and regional gross aspects of

vertebrate organ systems, anatomical terminology, anatomic literature and techniques, and radiographic anatomy.

**501 Gross Anatomy: Large Animal** First year, fall and spring. 5 credits. Prerequisite: Anatomy 500. Letter grades only. Hours to be arranged. W. O. Sack and assistants. Regional anatomy of the horse, cow, goat, and pig is studied by dissection. Special attention is given to the anatomic basis for physiological processes and clinical procedures, and the veterinary public health inspection of food animals.

**502 Cytology and Histology** First year, fall. 1 credit. Prerequisites: course work equivalent to that required for admission to the veterinary college and completion of, or concurrent registration in, Anatomy 500 or 700. Letter grades only. Hours to be arranged. J. F. Cummings and assistants. An introduction to the morphology of cells and to the organization and essential features of the basic tissue types.

**503 Organology** First year, spring. 2½ credits. Prerequisite: Anatomy 502 and completion of, or concurrent registration in, Anatomy 501 or 700. Letter grades only. Hours to be arranged. J. F. Cummings and assistants. The microscopic structure of the tissues and organs of domestic animals is studied. Illustrated lectures are presented to relate structure to function, correlate microscopic and gross anatomy, and establish a foundation for subsequent studies in physiology and pathology. Slides of tissues and organs are provided.

**504 Neuroanatomy and Clinical Neurology** First year, fall and spring. 2½ credits. Letter grades only. Hours to be arranged. A. deLahunta. The nervous system of domestic animals is studied by functional systems. This is a vertically integrated course that includes dissection of the central nervous system of the dog and an introduction to diagnosis of diseases of the nervous system. Clinical cases with pertinent lesions are demonstrated with each system.

**505–506 Applied Anatomy** Third year. 505, fall; 506, spring. 1 credit each term. Letter grades only. Hours to be arranged. A. deLahunta.

An opportunity for practice in the recognition of the anatomical features that are essential to diagnostic, surgical, obstetrical, and postmortem procedures. The approach is topographical, comparative, and clinical. The emphasis is on the study of living animals, supplemented by dissections, serial transections, models, and radiographs.

**507 Animal Development** First year, fall. 3 credits. Letter grades only. Hours to be arranged. D. M. Noden. The principles of embryonic and fetal development of domestic animals are presented. Special emphasis is placed on the description, causes, and frequency of congenital malformations that occur in these animals.

**508 Anatomy of the Fish and Bird** First year, spring. ½ credit. Hours to be arranged. H. E. Evans and assistants. Introduces the key taxonomic features and anatomy of fishes and birds.

**600 Special Projects in Anatomy** Fall and spring. By permission of instructor only. Hours to be arranged. (1 credit per 2½-hour period.)

**601 Research Opportunities in Veterinary Medicine** May be taken for credit during the school term, during January, or in the summer.

An independent study course. Students will work closely with individual faculty members in their research laboratories.

**602 Advanced Clinical Neurology** Fall. 1 credit. Prerequisite: first two semesters of veterinary curriculum. S-U grades only. W 8. A. deLahunta. Correlation of anatomy, physiology, and pathology in the diagnosis and treatment of diseases of the nervous system and an understanding of their pathogenesis. Case demonstrations will be emphasized.

**603 Structure and Function of Nonmammalian Vertebrates** Spring. All veterinary students, graduate students, and faculty members welcome. Prerequisite: willingness to dissect all animals provided. S-U grades only. H. E. Evans. This course will consist of introductions to the orders, families, and major genera of nonmammalian vertebrates by lectures, books, and specimen demonstrations. Selected examples will be dissected. One week will be devoted to fishes: marine, freshwater, and aquarium; one week to amphibians and reptiles; and one week to birds. Visits will be made to the vertebrate collections at the airport, and a fish-seining field trip to a lake or stream will demonstrate local species. Laboratory demonstrations and dissections by students will form the core of the course.

**604 Skeleton Preparation** Fall and spring. Hours and credit to be arranged. H. E. Evans, R. Dembinski. An opportunity to prepare a skeleton or skeletal parts under supervision. The use of degreasing agents, bleaching agents, and methods of assembly are discussed.

**700 Vertebrate Morphology (also Biological Sciences 414)** Spring, even-numbered years. 3 credits. Prerequisite: graduate status or major in anatomy/physiology. By permission of instructor only. Laboratories, two afternoons a week. H. E. Evans. Designed for advanced students in animal and biological sciences. A dissection of the dog serves as the basis for a functional consideration of the component parts of mammalian organ systems. This is followed by a dissection of the cow and other species if desired.

## Avian and Aquatic Animal Medicine

Professor B. W. Calnek, chairman  
E-113 Schurman Hall  
607/256-5454, ext. 2365

Professors: J. Fabricant, D. L. Graham, L. Leibovitz; adjunct professor: K. E. Wolf; associate professors: K. A. Schat, P. R. Bowser; courtesy associate professor: H. A. Poston; senior research associates: M. J. Wolfe, S. A. Haider; director of laboratory: W. F. Dean; field veterinarians: G. B. Mitchell, T. S. Sandhu

The department maintains a poultry disease diagnostic laboratory at the college and two regional diagnostic laboratories in different parts of the state. A diagnostic laboratory for aquatic animal diseases is also located at the college. These laboratories



supply fresh material for teaching and research purposes. Adequate facilities existing at the college and the P. Philip Levine Research Laboratories for Avian Diseases provide opportunity for advanced study for properly qualified students. A disease-free breeding flock and a poultry disease isolation building are available for studies of most infectious and other diseases of poultry. There are some facilities for maintaining experimental fish as well.

**[255 Poultry Hygiene and Disease** Fall. Even-numbered years. 2 credits. Minimum enrollment, 5 students; maximum enrollment, 15 students. Prerequisites: Microbiology 290 and permission of the instructor. Lecture and laboratory, R 2:05–4:25. Not offered 1985–86.

The nature of the infectious and parasitic diseases of poultry and the principles of hygiene applicable to poultry farming for the prevention and control of diseases.]

**555 Avian Diseases** Third year, fall. 2 credits. Required of veterinary students. Hours to be arranged. D. L. Graham.

Diseases of domestic poultry are studied with special emphasis on the problems of dealing with diseases in large populations of food-producing animals under modern management conditions. Differential diagnosis, diagnostic methods, and control procedures are discussed from this viewpoint. Unique features of the biology and management of pet, exotic, and wild birds are presented. Diseases of these species are discussed with emphasis on clinical, differential diagnostic, medical, and control aspects.

**671 Diseases of Aquatic Animals** Spring. 3 credits. Elective course for all veterinary students and interested students from other colleges. Prerequisites: general knowledge of microbiology and parasitology helpful but not required. Lecture and laboratory hours to be arranged. Instructors to be announced.

The basic study of this course relates to the etiology, pathology, diagnosis, prevention, and control of diseases of aquatic animals, with special emphasis given to the diseases of finfish and to the relationship of the aquatic environment to diseases of aquatic animals.

**672 Aquavet: Introduction to Aquatic Veterinary Medicine** Four weeks of full-time instruction at Woods Hole, Massachusetts, immediately after the spring term. 4 credits. Elective course limited to 32 students from Cornell, the University of Pennsylvania, and other colleges of veterinary medicine.

The course is sponsored by this college, the School of Veterinary Medicine at the University of Pennsylvania, and three marine science institutions at Woods Hole—the Marine Biological Laboratory, the Woods Hole Oceanographic Institution, and the Northeast Center of the National Marine Fisheries Service. It is designed to introduce veterinary medical students to medicine as it applies to aquatic animals. The marine environment is described and visited on field trips in the Woods Hole area. Certain aspects of the comparative anatomy, physiology, nutrition, microbiology, pathology, and medicine of a variety of marine and freshwater species are discussed. Some emphasis is placed on systems of aquaculture. The specific diseases of a few selected species are presented as examples, including the diseases of a crustacean, a shellfish, a finfish, and marine mammals. Students present seminars on appropriate topics.

**770 Advanced Work in Avian Diseases** Fall or spring. By special arrangement with the instructor. Hours to be arranged.

**772 Advanced Work in Aquatic Animal Diseases** Fall or spring. By special arrangement with the instructor. Hours to be arranged.

**773 Advanced Work in Avian Immunology** Fall or spring. By special arrangement with the instructor. Hours to be arranged. K. A. Schat.

## Clinical Sciences

Professor A. deLahunta, chairman  
D-204 Schurman Hall  
607/256-5454, ext. 2547

**Medical Section.** Professors: B. C. Tennant (chief); A. deLahunta, F. H. Fox; associate professors: W. E. Hornbuckle, W. C. Rebhun, R. C. Riis (sabbatic leave 1985), D. W. Scott, M. C. Smith; M. E. White (sabbatic leave 1985–86); assistant professors: S. Center, S. Dill, C. L. Guard, T. Kern, S. Moise, P. M. Powers, J. F. Randolph, D. Walton, J. F. Zimmer; instructors: P. Dinsmore, D. Jasko, L. Laratta

**Surgery Section.** Associate professors: H. J. Harvey (chief); R. P. Hackett, E. J. Trotter (sabbatic leave 1985–86); assistant professors: M. A. Collier, D. R. Gilmore, J. Flanders, S. Fubini, R. Todhunter

**Theriogenology Section.** Professors: P. N. Nathanielsz (chief), A. J. Winter; associate professor: C. E. Hall; assistant professor: G. L. Woods; senior clinician: R. B. Hillman

**Anesthesiology Section.** Professor: C. E. Short (chief); assistant professor: R. D. Gleed; instructor: L. Tyner

**Radiological and Physical Diagnostics.** Professor: F. A. Kallfelz (chief); associate professor: V. T. Rendano, Jr.; assistant professor: A. Dietze; senior lecturer: G. D. Ryan

**Equine Research.** Associate professor: H. F. Schryver (director); professor: H. F. Hintz; associate professor: J. E. Lowe



*Dr. Stephen G. Dill, assistant professor of medicine*

**Mastitis Research.** Professor: N. L. Norcross (director); associate professor: D. S. Postle

The majority of the lectures and laboratory courses provided by the Department of Clinical Sciences are taught during the third year of the veterinary curriculum. The practical application of the students' basic knowledge in veterinary medicine to clinical diagnosis and therapy of diseases is emphasized at this time.

The fourth year is devoted to intensive training in clinical medicine and surgery. Students are assigned responsibility for patient diagnosis and care under the close supervision of the clinical faculty. The curriculum consists mostly of an assignment to clinical services throughout the teaching hospital.

During this thirty-six-week period the students participate for twenty-eight weeks on assigned clinical services, and for any eight-week period they may elect the clinical service of their choice.

The teaching hospital is equipped with modern surgical and diagnostic services, including sophisticated radiologic facilities and diagnostic capabilities involving nuclear medicine. The clinical pathology laboratory is equipped with an automated analyzer for blood and other body fluids.

The teaching hospital consists of three clinics. The Small and Large Animal Clinics are both hospitals with complete facilities for intensive patient care. These clinics receive both outpatients and patients that are hospitalized. Patients come directly from local clientele or are referred to the

teaching hospital from veterinary practitioners in New York State and predominately the surrounding states of New England, New Jersey, and Pennsylvania. Students are assigned to the patients in the hospital, where their activities are closely supervised by the clinical faculty. Students participate in the selection and evaluation of diagnostic and therapeutic procedures and assist in surgery. Although the final decision on all diagnostic and therapeutic procedures is made by the head of each service, active student participation is encouraged and is essential for optimum patient care and student education.

Proximity to an urban community and an agricultural college and well-stocked farming community offer the necessary variety of patients for study.

The Ambulatory Clinic provides veterinary service on the premises of the patient under conditions identical with those encountered in private large animal practice. Students perform physical examinations and treatment under the supervision of a clinical faculty member. The farming community adjacent to the veterinary college is largely devoted to dairy farming, providing ample material related to obstetrics and diseases of dairy cows. In addition, the New York State Mastitis Control Program maintains a central field laboratory at the college. Fourth-year students accompany and assist veterinarians in field trips that deal with all phases of bovine mastitis and related dairy management procedures.

**475 Health and Diseases of Animals** Spring, 3 credits. For students in undergraduate colleges. Not open to first-year students or to those who have had no course in animal husbandry. Letter grades only. Lectures, M W F 11:15. C. E. Hall and guest lecturers from veterinary college faculty.

Diseases of domestic animals, chiefly those related to food and fiber production, are discussed with specific examples and models. Causes, prevention and control, and importance to human health are emphasized.

**540 Pathology Service** Fourth year, fall and spring. Letter grades only. J. T. Blue, J. M. King, D. L. Graham. Experience will be obtained on the necropsy service, clinical pathology service, and avian disease service.

**547 Practice Management** Fourth year, fall and spring. 2 credits. S-U grades only. A. deLahunta.

**548 Anesthesiology** Third year, fall. 1 credit. Letter grades only. C. E. Short, R. Gleed.

The general principles of anesthesia are presented, including the various techniques and pharmacological agents, as well as treatment of shock and preoperative and postoperative patient support.

**561 Theriogenology I** Second year, spring. 3 credits. Letter grades only. Fee, \$15. R. Hillman. A presentation of applied physiology and endocrinology of the male and female reproductive tract; congenital, infectious, endocrine, and miscellaneous diseases of the genital organs causing infertility and sterility; and artificial insemination.

**562 Theriogenology II** Third year, fall. 3 credits. Letter grades only. Fee, \$15. R. Hillman.

Pregnancy diagnosis; diseases of the gestation period, including teratology and abortion; parturition; dystocia; obstetrical operations; and postpartum diseases are presented.

**563 Large Animal Medicine and Surgery** Third year, fall. 5 credits. Letter grades only. A. Dietze, F. H. Fox, R. P. Hackett, M. A. Collier, S. Fubini, C. L. Guard, R. B. Hillman, W. C. Rebhun, V. Rendano, M. C. Smith, B. C. Tennant, R. Todhunter, M. E. White.

Lectures designed to impart a general knowledge of the principles of diagnosis and treatment of medical and surgical diseases of large domestic animals. Lamenesses of large animals are also discussed.

**564 Large Animal Medicine and Surgery** Third year, spring. 6 credits. Letter grades only. A. Dietze, F. H. Fox, R. P. Hackett, M. A. Collier, S. Fubini, C. L. Guard, R. B. Hillman, W. C. Rebhun, V. Rendano, M. C. Smith, B. C. Tennant, R. Todhunter, M. E. White.

A continuation of lectures designed to impart a general knowledge of the principles of diagnosis and treatment of medical and surgical diseases of large domestic animals. Lamenesses of large animals are also discussed.

**566 Radiographic Techniques** Third year, fall. First five weeks. 1 credit. A. E. Dietze, F. A. Kallfelz, V. T. Rendano, G. D. Ryan. Fundamentals of radiographic imaging and diagnosis, radiation safety, radiation therapy, and ultrasound.

**567 Clinical Nutrition** Third year, fall. 3 credits. Letter grades only. F. A. Kallfelz. Lectures and demonstrations reviewing basic principles of nutrition and covering nutritional and metabolic disease problems of domestic animals. The use of nutritional

principles in the prevention, treatment, and management of diseases of domestic animals is stressed. Case material from the teaching hospital is used whenever appropriate.

**568 Foundations of Clinical Science I** First year, fall. 2 credits. W. Hornbuckle and other faculty to be announced.

The purpose of this course is to begin to build the fundamental clinical skills of physical examination and diagnostic reasoning and to relate these to concurrent studies in anatomy and physiology. Practical laboratories will give students the opportunity to practice these skills, and the participation of both clinical and basic science faculty members will emphasize the interdependence of the basic and clinical sciences.

**569 Foundations of Clinical Science II** First year, spring. 2 credits. W. Hornbuckle and other faculty to be announced.

A continuation of Foundations of Clinical Science I.

**570 Theriogenology Service** Fourth year, spring. 4 credits. Letter grades only. R. B. Hillman.

**572 Senior Seminar** Fourth year, fall and spring. Fourth-year students are required to attend these conferences. First-, second-, and third-year students and all staff members are also invited to attend. S-U grades only. F 7:30 a.m. D. S. Postle, chairman.

The aim of this course is to give the student the responsibility and opportunity of selecting and studying a disease entity on the basis of a case or series of cases or to give the student the responsibility and opportunity of conducting a short-term, clinically oriented research project under the direction of a faculty member. In either case, an oral report will be presented at a Friday seminar. A written report will also be submitted at the time of the seminar. All participants are encouraged to foster an atmosphere in which discussion, exchange of ideas, and the airing of controversial opinions might flourish.

**574 Large Animal Surgery Service** Fourth year, fall and spring. 4 credits. Letter grades only. M. A. Collier.

**575 Ambulatory Service** Fourth year, fall and spring. 4 credits. Letter grades only. M. C. Smith and Ambulatory Clinic faculty.

**578 Anesthesiology Service** Fourth year, fall and spring. 2 credits. Letter grades only. C. E. Short.

**579 General Medicine and Surgery** Second year, spring. 4 credits. Prerequisite: Pathology 536. Letter grades only. W. E. Hornbuckle, H. J. Harvey, and faculty of medicine and surgery sections.

An introduction to veterinary internal medicine and surgery. Emphasis is placed on the comparative and pathophysiologic aspects of disease, the clinical manifestations of organ system dysfunction, the principles of aseptic surgical technique, the healing of incised and traumatic wounds, and the prevention and treatment of surgical complications.

**580 Radiology Service** Fourth year, fall and spring. 2 credits. Letter grades only. F. A. Kallfelz.

**581 Nutrition** First year, fall. 2 credits. Letter grades only. H. F. Hintz.

Function of nutrients, sources of nutrients, and identification and evaluation of feedstuffs and feeding programs for livestock and companion animals will be discussed.

**582 Large Animal Surgical Exercises** Third year, spring. 2 credits. S-U grades only. M. A. Collier and faculty of surgery and anesthesiology sections.

This course is designed to impart fundamental skills in preoperative and postoperative care, anesthesia, aseptic technique, and surgical technique through closely supervised operations on the large domestic animals.

**583 Small Animal Medicine and Surgery** Third year, fall. 5 credits. Prerequisites: Pathology 536, Clinical Pathology 571, and Pharmacology 528. Letter grades only. D. Scott, A. Dietze, V. Rendano, and faculty of medicine and surgery sections.

A comprehensive course in medical and surgical diseases of small animals, arranged and presented by systems.

**584 Small Animal Medicine and Surgery** Third year, spring. 7 credits. Letter grades only. S. Center, A. Dietze, J. Randolph, V. Rendano, and faculty of medicine and surgery sections.

A continuation of Clinical Sciences 583.

**586 Small Animal Surgical Exercises** Third year, spring. 2 credits. Letter grades only. H. J. Harvey and faculty of the surgery and anesthesiology sections.

**587 General Surgery** Offered 1985–86 only. Third year, fall. 1 credit. Prerequisite: Pathology 536. Letter grades only. Fee, \$75. H. J. Harvey and faculty of the surgery section.

The principles of surgery are given, including aseptic technique, tissue considerations and healing, indications for surgery, types of wounds, and prevention and treatment of surgical complications.

**589 Small Animal Medicine Service** Fourth year, fall and spring. 4 credits. Letter grades only. J. F. Zimmer. Two medical services.

**591 Small Animal Surgery Service** Fourth year, fall and spring. 4 credits. Letter grades only. H. J. Harvey.

**593 Ophthalmology Service** Fourth year, fall and spring. 2 credits. Letter grades only. R. C. Riis.

**594 Large Animal Medicine Service** Fourth year, fall and spring. 2 credits. Letter grades only. W. C. Rebhun.

**596 Opportunities in Veterinary Medicine** Fourth year, fall and spring. 4 credits. S-U grades only. Curriculum Committee.

**598 Dermatology Service** Fourth year, fall and spring. 2 credits. Letter grades only. D. W. Scott.

**616 Research Opportunities in Veterinary Medicine** May be taken for credit during the school term, during January, or in the summer.

An independent study course. Students will work closely with individual faculty members in their research laboratories.

**675 Special Problems in Large Animal Medicine** Fall or spring. By permission of instructor only. Hours to be arranged.

**676 Special Problems in Large Animal Surgery** Fall or spring. By permission of instructor only. Hours to be arranged.

**677 Special Problems in Large Animal Obstetrics** Fall or spring. By permission of instructor only. Hours to be arranged.

**678 Fundamental Techniques in Embryo Transfer** Spring. 1 credit. Elective course for fourth-year veterinary students. S-U grades only. W 7 a.m. P. Powers.

This course combines lecture and hands-on laboratory experience in embryo transfer in domestic animals with emphasis on the cow.

**680 Poisonous Plants** Fall. 1 credit. Elective course for all veterinary students. S-U grades only. W 8:00. R. B. Hillman, M. C. Smith.

Lectures and field trips will be used to establish identification of toxic plants and to acquaint students with criteria for establishing a diagnosis of plant poisoning and instituting rational therapy.

**681 Horse Health Management** Spring. 1 credit. Elective course for third- and fourth-year veterinary students who have a special interest in horses. W 8:00. R. B. Hillman. Prevention of horse diseases from foaling through adulthood by management practices, nutrition, and vaccination procedures will be emphasized.

**[682 Large Animal Internal Medicine** Fall, even-numbered years. 1 credit. Elective course for third- and fourth-year veterinary students. S-U grades optional. W 8:00. B. C. Tennant. Not offered 1985–86.

Selected topics of large animal internal medicine using lectures and case presentation. Emphasis will be given to the major diseases of the cardiovascular, urinary, respiratory, and gastrointestinal systems.]

**684 Horse Lameness** Spring. 1 credit. For second- and third-year veterinary students. F 2. J. E. Lowe.

This course is designed to acquaint second- and third-year students with the principles of lameness diagnosis. Physical examination for soundness of the musculoskeletal system is stressed through lecture-demonstration and assigned case material from the Large Animal Hospital and Equine Research Park. Motion pictures and television tapes are used each week to illustrate principles of diagnosis and specific types of lameness.

**686 Goats: Management and Diseases** Spring. 1 credit. Elective course for second-, third-, and fourth-year veterinary students. S-U grades only. W 7. M. C. Smith. Not offered 1987.

Common nutritional, reproductive, medical, and surgical problems of goats will be emphasized.

**687 Diseases of Swine** Spring. 1 credit. Open to all veterinary students. F. Fox, H. Holden, B. Straw. This course explains the rationale behind, and the clinical approach to, problem solving in swine herds and provides a basic competency in swine practice.

**688 Special Problems in Small Animal Medicine** Fall or spring. By permission of instructor only. Hours to be arranged.

**689 Special Problems in Small Animal Surgery** Fall or spring. By permission of instructor only. Hours to be arranged.

**690 Veterinary Dermatology** Spring. 1 credit. S-U grades only. W 8. D. W. Scott, D. Walton.

This course will emphasize dermatologic conditions of small and large animals *not* covered in the core curriculum, along with dermatopharmacology. Course grade will be based on a final examination.

**691 Advanced Large Animal Internal Medicine Problems** Fourth year, spring. 2 credits. W. C. Rebhun and faculty of the medicine section.

This course offers the fourth-year veterinary students interested in large animal medicine advanced training in internal medicine. The course will go into more detail on working up problematic large animal medicine cases than time will allow in the core curriculum. The laboratory will allow students to perform diagnostic procedures they may have had only a random chance to do in the clinics.

**[778 Gastroenterology Conference** Spring. 1 credit. R 1:05. B. C. Tennant. Not offered 1985–86.]

**[779 Veterinary Gastroenterology** Spring. 2 credits. W 8–9, F 2–3. B. C. Tennant and others. Not offered 1985–86. Pathogenesis, diagnosis, and treatment of the major medical diseases of the gastrointestinal tract of domestic animals.]

**782 Special Topics in Comparative Ophthalmology** Fall. 1 credit. W 8. T. Kern, W. C. Rebhun, R. C. Riis. This is an elective course for students who have completed the basic course. Special lectures include bovine ophthalmology, equine ophthalmology, keratopathies, retinopathies, and special diagnostics.

## Clinical Service Courses

Clinical service courses are offered for sixteen weeks in the fall semester and twenty weeks in the spring semester. During this thirty-six-week period the student must attend twenty-eight weeks of required courses and eight weeks of elective courses. Four weeks may be taken as vacation. The student will receive one hour of credit for every week on a clinical service course.

## Required Courses

*Four weeks each:*

- 574 Large Animal Surgery Service** R. Hackett.
- 575 Ambulatory Medicine Service** M. C. Smith.
- 589 Small Animal Medicine Service** J. F. Zimmer.
- 591 Small Animal Surgery Service** H. J. Harvey.

*Two weeks each:*

- 540 Pathology Service** J. T. Blue. Experience will be obtained on both the Necropsy Service and Clinical Pathology Service.
- 578 Anesthesiology Service** C. E. Short.
- 580 Radiology Service** F. Kallfelz.
- 593 Ophthalmology Service** R. C. Riis.
- 594 Large Animal Medicine Service** W. C. Rebhun.
- 598 Dermatology Service** D. W. Scott.

## Elective Courses

Two to four weeks of the above required courses may be repeated as an elective course.

- 547 Practice Management** (two weeks only) A. deLahunta.
- 570 Theriogenology** (four weeks only) R. B. Hillman.

## Microbiology

Professor S. G. Campbell, acting chairman  
E-317 Schurman Hall  
607/256-5454, ext. 2395

Professors: M. Appel, S. G. Campbell, L. E. Carmichael, J. H. Gillespie, K. M. Lee, G. Lust, D. D. McGregor, F. M. Noronha, F. W. Scott; professors emeriti: C. Boyer, D. W. Bruner, B. E. Sheffy; associate professors: R. G. Bell, J. F. Timoney; assistant professors: D. F. Antczak, G. M. Dunny; senior research associates: C. G. Fabricant, D. F. Holmes; research associates: J. Appelton, E. Schiff, M. L. Tortorello, M. Woan, N. Wurster; senior extension associate: L. Wuori; lecturer: L. Winter. Joint appointees: professors: N. L. Norcross, G. C. Poppensiek, A. J. Winter; associate professors: W. Rebhun, V. Utermohlen; assistant professor: R. V. Pollock

**315 Basic Immunology Lectures (also Biological Sciences 305)** Fall. 2 credits. Letter grades only. Recommended: basic courses in microbiology and biochemistry. T R 9:05. A. J. Winter.

Course material covers current concepts in immunology at an elementary level with special emphasis on the biological functions of the immune response.

**316 Basic Immunology Laboratory (also Biological Sciences 307)** Fall. 2 credits. Prerequisite: a course in basic microbiology or special permission of the instructor. Recommended: concurrent enrollment in Microbiology 315. Letter grades only. Laboratories, T R 10:10–12:15. N. L. Norcross.

Designed to illustrate immunological concepts presented in Basic Immunology Lectures. Laboratory exercises are selected to familiarize students with basic humoral and cellular immune phenomena and to offer firsthand experience in immunological laboratory techniques.

**317 Pathogenic Microbiology** Spring. 4 credits. Intended primarily for graduate and undergraduate microbiology majors. Limited to 48 students. Prerequisites: Microbiology 290 and 291 (College of Agriculture and Life Sciences). Recommended: Microbiology 315 and 316. Lectures, T R 1:05–1:55. Laboratory, 2:05–4:25. G. M. Dunny, J. H. Gillespie, L. Winter.

This is a two-part course in medical microbiology covering pathogenic bacteriology and virology. Lectures in bacteriology cover the major groups of bacterial pathogens and some of the important virulence mechanisms, as well as highlight certain aspects of the normal flora, antibiotic therapy, and drug resistance that are relevant to the pathogenesis of bacterial disease. Virology lectures provide the student with an introduction to animal viruses and discuss viral diseases, biochemistry, genetics, and replication. Laboratories emphasize techniques for isolation and culture of bacterial and viral pathogens, as well as demonstrate tissue culture and animal models for studying the pathogenesis of, and the immune response to, infectious agents. One important principle emphasized in both portions of the course is that disease is the product of the interaction of the host, pathogen, and environment.

**515 Veterinary Immunology** Fall, second year. 2 credits. Letter grades only. Prerequisite: Vet Med 519. S. G. Campbell.  
The objective of the lectures is to give the veterinary

student a general outline of the mammalian and avian immune response. Emphasis will be on basic principles, using examples from domestic animals, thereby stressing the applications of immunology to veterinary medicine. The laboratories illustrate and enlarge upon the concepts presented in the lectures and give the student firsthand experience of the simple immunological tests commonly used in veterinary practice. The more complex tests are presented as demonstrations. Discussion of the immunological aspects of immunology is incorporated whenever possible.

**516 Infectious Diseases I** Second year, fall. 2 credits. Prerequisites: Vet Med 519. Letter grades only. L. Winter, G. M. Dunny.

The lectures in veterinary bacteriology are intended to give the veterinary student an understanding of the circumstances and processes by which pathogenic bacteria enter and cause disease in the different organ systems of animals. Thus the student will be given the basis for an intelligent approach to the symptomatology, diagnosis, control, treatment, and prevention of bacterial diseases in domestic animals. Laboratory exercises will involve isolation, culture, and identification of the major groups of veterinary bacterial pathogens as they occur in clinical material. These exercises will be supplemented with discussion-demonstration sessions in which recognition of these organisms in clinical specimens will be emphasized.

**517 Infectious Diseases II** Second year, spring. (After 1986 offered in fall.) 2 credits. Letter grades only. F. W. Scott.

This course will cover viruses that produce important diseases in animals. Topics of interest to the clinician, leading to better understanding and control of these diseases, will be discussed, including the basic properties of the virus, how the virus produces disease, and how the host responds to the virus infection. Virological and serological procedures important for the diagnosis of various virus diseases will be discussed.

**519 Introductory Microbiology** First year, spring. 2 credits. D. Antczak, G. M. Dunny, L. Winter.

This course is intended as an introduction to the courses in microbiology and infectious diseases offered in the sophomore year. The mycology lectures and laboratories are intended to acquaint the veterinary student with fungal organisms that cause disease or intoxications in animals. The mycology epidemiology, signs of disease, laboratory diagnosis, and control aspects will be discussed in lecture. In the mycology laboratories the student will learn simple techniques for the culture and identification of pathogenic fungi, as well as their recognition in clinical specimens. Students will be introduced to the basic concepts of bacteriological culture and diagnostic techniques. The basic biological properties of microorganisms will be discussed, and the steps in the pathogenesis of microbial infections will be presented. The basic principles of the immune system will be covered in a series of six lectures. Topics covered will include the clonal selection theory; biochemistry, genetics, and function of immunoglobulins and molecules of the Major Histocompatibility Complex; cell interaction in the generation of immune responses; and immunological tolerance.

**605 Special Projects in Microbiology** Fall and spring. Credit to be arranged. Prerequisite: a good background in microbiology or immunology. S-U grades only. Microbiology staff.

The course is designed for undergraduates and as a

veterinary elective. Preferably, students should have some background in pathogenic microbiology and immunology. It normally provides an opportunity for the student to work in a research lab or carry out a special project under supervision.

**606 Small Animal Infectious Diseases** Spring. 2 credits. Prerequisite: three semesters of the veterinary college curriculum or permission of instructor. S-U grades. F 2. F. W. Scott and guest lecturers.

An elective course designed to give the future small animal practitioner a greater understanding of the infectious diseases of the dog and cat. Emphasis will be on etiology, pathogenesis, and prevention, including maternal immunity, vaccination, and hospital design as it relates to the spread of diseases. The course will be coordinated with small animal medicine and microbiology core courses in order to prevent excess repetition. The diseases covered will include the diseases of dogs and cats that are caused by viruses, bacteria, fungi, and protozoa.

**[607 Virus Diseases of Cattle** Fall, even-numbered years. 1 credit. Elective for junior and senior veterinary students and graduate students. S-U grades only. W 8. F. Fox, J. Gillespie, J. King, and guest lecturers. Not offered 1985-86.

Designed to give the future bovine practitioner an understanding of the viral diseases of cattle raised in the United States. Emphasis will be placed on clinical signs and diagnosis, etiology, pathogenesis, pathology, control and prevention (including maternal immunity), vaccination, and other therapy. A clinician, a pathologist, and a microbiologist will be in attendance at every lecture to cover each aspect of the disease as it relates to their discipline. This assures complete coverage of each topic through appropriate interaction and integration of the subject matter.]

**[609 A Health Program for Sheep** Spring, odd-numbered years. 2 credits. Lecture, W 7:30 p.m. Laboratory, F 2. Veterinary elective open to animal science majors. Course coordinator: S. G. Campbell. Not offered 1985-86.

The major objectives of the course are to provide the student with sufficient information about the nutrition, husbandry, and diseases of sheep to set up a health program for sheep in the northeastern United States; to present such an organized plan; and to ensure that the participants can prepare one for themselves or their clients. The course will provide necessary background information on sheep, their products, and their owners. It will stress elementary, practical, and current information applicable to their health and well-being.]

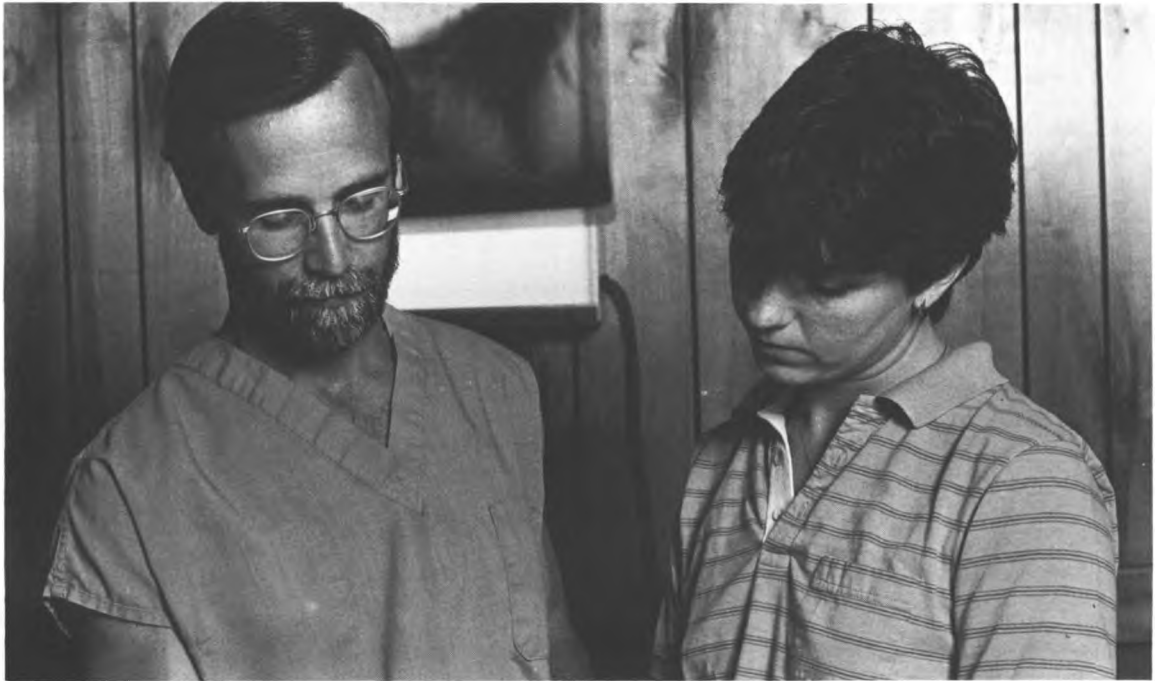
**615 Research Opportunities in Veterinary Medicine**

An independent study course. Students will work closely with individual faculty members in their research laboratories. May be taken for credit during the school term, during January, or in the summer.

**706 Immunology Seminar Series** Fall and spring. No credit. Attendance and participation required of all graduate students in the Field of Immunology. S-U grades only. First and third Fridays of each month, 12:15. V. Utermohlen.

Presentations of research investigations by Cornell faculty members, postdoctoral fellows, and graduate students in the Field of Immunology and by invited speakers from other institutions.

**707 Advanced Work in Bacteriology, Virology, and Immunology** Fall and spring. Credit to be arranged.



*Dr. H. Jay Harvey, associate professor of surgery, with Patricia A. Randall, animal health technician, Intensive Care Unit*

Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. Microbiology staff.

This course is designed primarily for graduate students with a good background in pathogenic microbiology and immunology. It may be elected by veterinary students who are properly prepared.

**[708 Animal Virology]** Spring, odd-numbered years. 3 credits. Prerequisite: Veterinary Medicine 317 or 517, or equivalent. General knowledge of biochemistry and animal pathology helpful. Priority given graduate students. S-U grades unless otherwise requested. Lectures, M W F 11:15. M. J. Appel, L. E. Carmichael, K. A. Schat, and staff. Not offered 1985–86.

Principles of animal virus biology, with focus on mechanisms in viral pathogenesis.]

**[709 Laboratory Methods of Diagnosis]** Fall and spring, 1–3 credits by arrangement. Prerequisite: permission of instructor. S-U grades optional. Microbiology staff. Instructions and practice in the application of microbiological and serological methods for the diagnosis of disease.

**[710 Microbiology Seminar]** Fall and spring. No credit. Required of all graduate students in microbiology. S-U grades only. M 12:15. Instructor to be announced.

**[713 Biology of the Murine Major Histocompatibility Complex]** Spring, odd-numbered years. 1 credit. Enrollment limited. Prerequisite: introductory immunology. S-U grades optional. Lectures, M W F 9. D. L. Wassom. Not offered 1985–86. This course will involve intensive student participation.]

**[714 Advanced Immunology: Immunohelminthology]** Spring, odd-numbered years. 1 credit. Enrollment limited. Prerequisite: introductory immunology. S-U grades optional. Lectures, M W F 9. R. Jacobson. Not offered

1985–86.

This course will involve intensive student participation.]

**[715 Advanced Immunology: Pathogenetic Mechanisms in Autoimmune Disease]** Spring, odd-numbered years. 1 credit. Enrollment limited. Prerequisite: introductory immunology. S-U grades optional. Lectures, M W F 9. F. Quimby, R. Lewis. Not offered 1985–86.]

**[716 Advanced Immunology: Monoclonal Antibody: Laboratory]** Spring, even-numbered years. 1 credit. Enrollment limited. Prerequisite: introductory immunology. S-U grades optional. Lectures, M W F 9. This course involves intensive student participation.

**[717 Advanced Immunology: Cell Surface Receptors in the Immune Response]** Spring, even-numbered years. 1 credit. Enrollment limited. Prerequisite: introductory immunology. Lectures, M W F 9. This course involves intensive student participation.

**[718 Advanced Immunology: Immunoparasitology]** Spring, even-numbered years. 1 credit. Enrollment limited. Prerequisite: introductory immunology. S-U grades optional. Lectures, M W F 9. R. Bell, D. Wassom. This course involves intensive student participation.

## Pathology

Professor R. M. Lewis, chairman  
E-205 Schurman Hall  
607/256-5454, ext. 2300

Professors: J. King, L. Krook; associate professors: D. H. Lein, R. R. Minor, D. D. Myers, F. W. Quimby, D. O. Slauson; assistant professors: J. Blue, W. L. Castleman, B. J. Cooper, T. French,

D. Schlafer, B. Summers; professors emeriti: J. Bentinck-Smith, C. I. Boyer, Jr., P. Olafson; adjunct professors: W. J. Dodds, C. A. Mebus, J. Nosanchuck, M. Posso; adjunct assistant professors: G. V. Lesser, H. T. Nguyen; visiting professors: F. Enright, C. S. Lee; instructors: B. Car, J. Rothwell, S. Shelly; interns and residents: W. Anderson, F. Dargent, V. Eng, G. Foley, M. McEntee, C. Miller, M. Musonda, H. Steinberg, B. Von Beust; postdoctoral fellows: P. Bochsler, D. Gamble (New York City), B. Hook, P. Luther, A. Nicholson (New York City), C. Ziegler; visiting fellow: R. Zwahlen; veterinary graduate research assistants: D. Abbott, A. Anttila, M. Boudreaux, M. Carlisle, W. Corapi, C. Meschter, F. Mohr, L. Munson, S. Neuenschwander, C. Picut, M. Suter, B. Valentine, D. Weinstock; graduate students: C. Clifford, L. Denholm, D. Gregg, B. Letwin, J. E. Wilkinson

The department's modern facilities provide ample opportunity for advanced work in necropsy and surgical pathology, immunopathology, nutritional pathology, laboratory animal pathology, laboratory diagnostic methods, and electron microscopy. The department maintains a necropsy service and tissue culture laboratories and two electron microscope laboratories. These facilities provide an abundance of pathological material for teaching and research purposes. Clinical cases that have been adequately examined by clinical methods are available for necropsy study.

The following courses are given particularly for veterinary students. Courses in the 500 series are required. When there is room for them, properly prepared students of other colleges will be admitted, but permission to register must be obtained.

**535 Veterinary Pathology I** Second year, fall. 4 credits. Prerequisites: Anatomy 502 and 503 or equivalent histology courses. Non-veterinary medical students also must have permission of instructor. Letter grades only. Hours to be arranged. D. O. Slauson.

A study of disease processes beginning at the cellular level and progressing to selected body systems. Cellular pathology, injury and death at the cellular and tissue level, derangements in body fluids and blood flow, inflammation and repair, the nature and causes of tissue injury, abnormalities of cell growth, neoplasia, and the relationship of genetics to disease are discussed as general processes at a mechanistic level. These basic pathogenic processes are subsequently applied to the diseases occurring in complex organ systems such as the skin and endocrine and reproductive systems. This serves as a bridge between Veterinary Pathology I and Veterinary Pathology II.

**536 Veterinary Pathology II** Second year, spring. 4 credits. Prerequisite: Veterinary Pathology I. Letter grades only. Hours to be arranged. R. M. Lewis and staff. A systematic study of the diseases in each major organ system with emphasis on differential diagnostic features and the correlation of disturbed function with morphologic change.

**539 Introduction to Laboratory Animal Medicine** Third year, spring. 1 credit. Prerequisites: Pathology 535 and 536. Letter grades only. Hours to be arranged. F. W. Quimby and staff.

An introduction to the biology and diseases of common laboratory animal species, including mice, rats, hamsters, guinea pigs, rabbits, and nonhuman primates. Exotic species, including amphibia and reptiles, are also discussed. The etiology and pathogenesis of the most prevalent diseases are emphasized. Practical means of diagnosis and treatment are discussed. The course also provides an overview of the many aspects of laboratory animal medicine as practiced in academic institutions, industry, and research.

**540 Pathology Service** Fourth year, fall or spring. Hours to be arranged. J. T. Blue, J. M. King, J. Fabricant. Experience will be obtained on the Necropsy Service, Clinical Pathology Service, and Avian Disease Service.

**571 Clinical Pathology** Second year, spring. 3 credits. Prerequisites or corequisites: Veterinary Pathology I and Veterinary Pathology II. Students from other colleges may be admitted by special permission. Letter grades only. Either three lectures or two lectures and one laboratory weekly. Hours to be arranged. J. Blue, T. French. The course teaches the application of hematology, urinalysis, cytology, and other laboratory procedures to the evaluation of clinical disorders.

**635 Special Problems in Pathology** Fall or spring. By permission of instructor only. Letter grades only. Hours to be arranged. R. M. Lewis and staff.

**636 Wildlife Pathology** Fall. 2 credits. Elective course for first-, second-, or third-year students. S-U grades optional. Lecture, W 2-4:20. J. M. King.

A presentation of the nature and causes of diseases of wild rabbits, opossums, squirrels, deer, certain waterfowl, and some other species. Emphasis on epizootiology, etiology, pathogenesis, diagnostic lesions, and effects on populations. Laboratory experience in specimen collection and necropsy techniques. Guest lectures on ecology and population dynamics by members of the Department of Natural Resources.

**637 Postmortem Pathology** Fall. 1 credit. Elective course for first-, second-, or third-year students. S-U grades optional. Lecture, F 2. J. M. King.

A presentation of gross and microscopic lesions of diagnostic significance, employing color projection slides as illustrations. Emphasis on pathological and differential diagnosis of a wide spectrum of viral, metabolic, bacterial, parasitic, and other diseases.

**639 Autotutorial Course in Laboratory Animal Medicine and Science** Fall or spring. 1 credit. This course is for individual review. Hours to be arranged. F. W. Quimby. The objectives of the course are to discuss, identify, describe, define, or list in regard to laboratory animals (1) the justification for their use, (2) legislation and guidelines pertaining to their use, (3) their role as animal models, (4) the significance of diseases as complications of biomedical teaching and research, (5) the primary uses of each species, (6) their significant biologic characteristics, (7) the principles of sound husbandry procedures, (8) their principal diseases, their significance, and satisfactory procedures for their diagnosis, treatment, control, and prevention, including the application of gnotobiotic and pathogen-free procedures. The course is intended to prepare the undergraduate veterinary student to handle



problems concerning the common laboratory animals, for example, rodents, lagomorphs, and nonhuman primates, as they are encountered in veterinary practice. Examinations and a subjective evaluation form are required for each minicourse.

**640 Principles of Toxicological Pathology** Fall, odd-numbered years. 3 credits. Elective for graduate students. Lectures, R 1:05–3:15. Laboratory, R 7–9 p.m. J. M. King. The primary objective of this elective graduate-level course is to make the student aware of the problems and their solutions encountered in pathology as it applies to the field of toxicology, with special emphasis on industrial toxicology and governmental regulations.

**641 Clinical Immunology** Spring. 1 credit. S-U grades optional. Lecture, F 2. R. M. Lewis.

This course emphasizes the clinical aspects of fifteen specific diseases that are mediated by immunologic processes. Case material from the teaching hospital will be used to illustrate the presenting clinical signs, laboratory diagnostic methods, clinical course, therapeutic approaches, and eventual outcome of each disease under discussion. Student participation in the informal case discussions will be encouraged as a means of introducing students to the practice of veterinary medicine through case discussion and analysis. Training will also be provided in the use of the college's computerized biomedical information system and the hospital records system to develop a critical case analysis, which serves as the basis for grading.

**736 Pathology of Nutritional Diseases** Spring. 3 credits. For graduate students in pathology or nutrition and as an elective course for veterinary students at the sophomore level or above. Prerequisite: Pathology 535. Lecture, W 8. Laboratory, W 2:05–4:25. L. P. Krook.

**739 Advanced Work in Pathology** Fall or spring. 1 to 3 credits by arrangement. R. M. Lewis and staff. Properly prepared students may undertake special problems or receive special assignments.

**749 Laboratory Animal Clinical Rotation** Fall or spring. 4 credits. Limited to graduate students in laboratory animal medicine. Hours to be arranged. F. W. Quimby. To gain clinical experience in the management and care of various laboratory animal species as well as in the professional operation of a large animal facility, students are rotated through various areas, including the experimental surgery laboratory, animal diagnostic laboratory, and the animal facility.

**788 Seminar in Surgical Pathology** Fall or spring. 1 credit. Elective for third- and fourth-year veterinary students, graduate students, interns, and residents. Lecture-seminar, R 8. B. J. Cooper and staff. The major objective of this course is to introduce the students to the gross and microscopic features of surgical pathology. Selected material from the Surgical Pathology Service is prepared in advance for independent review by the students. The material is presented in a slide seminar format by the students under the review of the faculty. Emphasis is placed on pathogenesis, etiology, and pathologic descriptions of the lesions. In addition, appropriate guest lecturers cover specific areas of interest and special topics not encountered in the departmental service programs.

**789 Seminar in Necropsy Pathology** Fall or spring. 1 credit. Veterinary elective for third- and fourth-year

veterinary students, graduate students, interns, and residents. Lecture-seminar, T 8. J. King. The major objective of this course is to introduce the student to the gross and microscopic features of necropsy pathology. Selected material from the Necropsy Service is prepared in advance for independent review by the students. This material is presented in a slide seminar format by the students under the review of the faculty. Emphasis is placed on pathogenesis, etiology, and pathologic description of the lesions. In addition, appropriate guest lecturers cover specific areas of interest and special topics not encountered in the departmental service programs.

**790 Special Topics in Pathology** Fall. 1 credit. Elective for third- and fourth-year veterinary students, graduate students, interns, and residents. Lecture-seminar, M 8. R. M. Lewis and staff.

The major objective of this course is to introduce the student to the gross and microscopic features of special topics in pathology, including neuropathology, ocular pathology, reproductive pathology, and the pathology of laboratory animals and avian and marine species. Selected material from the Surgical and Necropsy Services is prepared in advance for independent review by the students. This material is presented in a slide seminar format by the staff. Emphasis is placed on pathogenesis, etiology, and pathologic description of the lesions. In addition, appropriate guest lecturers cover specific areas of interest and special topics not encountered in the departmental service programs.

**792 Pathogenetic Mechanisms** Spring, even-numbered years. 3 credits. Prerequisites: Pathology 535 or 315, or permission of instructor. M W F. 11:15. Department of Pathology faculty.

A topics course in advanced pathology emphasizing pathogenetic mechanisms as illustrated by naturally occurring and experimentally induced disease processes in humans and animals. Subject areas include cell injury induced by physical, toxic, and viral agents; pathobiology of the central and peripheral nervous system; cellular and humoral mediators of inflammation; hypersensitivity and autoimmune phenomena; congenital and acquired immunodeficiencies; immunobiology of mononuclear cells; and the pathogenesis of neoplastic processes.

**793 Lectures in General Pathology** Fall. 2 credits. Graduate students. Prerequisite: permission of instructor. Hours to be arranged. D. O. Slauson. This course consists of only the lecture portion of Pathology 535 without the laboratory. It is designed to accommodate certain graduate students who desire exposure to general pathology but lack histology experience. The subject matter covered is described under 535.

**794 Lectures in Special Pathology** Spring. 3 credits. Graduate students. Prerequisite: permission of instructor. Hours to be arranged. R. M. Lewis. A systematic study of the diseases in each major organ system with emphasis on differential diagnostic features and the correlation of disturbed function with morphologic change.

**795 Pathology of Laboratory Animals** Fall. 1 credit. Prerequisites: Pathology 535 and 536 or equivalent. W 8. W. L. Castleman. Selected major infectious, neoplastic, genetic, and age-related diseases of rodents, lagomorphs, and nonhuman

primates are discussed. Emphasis is placed on pathogenesis and gross and microscopic features as well as other ancillary procedures for the diagnosis of diseases of laboratory animals. Research complications arising from the diseases and spontaneous diseases used as experimental models of human disease are also discussed.

## Pharmacology

Professor G. W. G. Sharp, chairman  
D-118 Schurman Hall  
607/256-5454, ext. 2650

Associate professor: W. S. Schwark; assistant professors: D. C. Ferguson, C. M. S. Fewtrell, R. E. Oswald, G. A. Weiland; others to be appointed

Specific information about faculty, staff, and courses may be obtained by contacting the department.

**528 Pharmacology I** Spring. 4 credits. Prerequisites: Anatomy 500, 501, 502, 503, and 504; Physiology 525, 526, and 527; and Pathology 535 or permission of instructors. Letter grades only. Hours to be arranged. Pharmacology faculty.

Topics will include physiological disposition of drugs and poisons, drug receptor interactions, cell and organ pharmacology, and actions of drugs affecting the nervous system. A number of clinical topics will be covered in the laboratory session.

**529 Pharmacology II** Fall. 2 credits. Prerequisite: Pharmacology 528 or permission of instructors. Letter grades only. Hours to be arranged. D. C. Ferguson and other faculty.

Topics will include chemotherapy, the action of drugs affecting the heart, gastrointestinal tract, skin, and the respiratory, endocrine, and urinary systems.

**610 Research Opportunities in Veterinary Medicine** An independent study course. Students will work closely with individual faculty members in their research laboratories. May be taken for credit during the school term, during January, or in the summer.

**620 Advanced Clinical Pharmacology (Selective)** Spring. 1 credit. Hours to be arranged. D. C. Ferguson, W. S. Schwark.

An extension of the core veterinary pharmacology courses, Vet Med 528 and 529. Emphasis will be on selected topics in veterinary therapeutics with reference to clinical case material.

**[621 Toxicology]** Spring. 1 credit. S-U grades only. Offered alternate years. F2. W. S. Schwark. Not offered 1985-86.

Specific information about this course can be obtained from the department. Basic and clinical aspects of the more common poisonings that affect domestic animals will be considered. Emphasis will be given to heavy-metal poisoning; chelation phenomena; selected organic poisonings, including pesticides, herbicides, and rodenticides; and forensic considerations.]

**622 Special Projects in Pharmacology** Fall, spring, or summer. By permission of instructor only. Letter grades only. Hours to be arranged. Pharmacology faculty.

**700 Calcium and Other Second Messengers in Cell Activation** Spring. 2 credits. By permission of instructor.

Lecture-discussion, 2 hours each week to be arranged. C. M. S. Fewtrell.

Calcium as second messenger; regulation of intracellular calcium and techniques for studying calcium movements and distribution in cells. Phosphatidylinositol turnover; activation of protein kinase C by diacylglycerol and the release of calcium from intracellular stores by inositol trisphosphate. Adenylate cyclase, guanine nucleotide regulatory proteins and cyclic nucleotides as transducers and second messengers. The role of ion channels in cell activation. Each topic will be introduced with a lecture and followed by discussion of recent papers from the literature.

**701 Receptors and Ion Channels** Spring. 2 credits. By permission of instructor. Lecture and discussion, hours to be arranged. G. A. Weiland, R. E. Oswald. Biochemical and electrophysiological mechanisms of ligand- and voltage-modulated ion channels and the role of these channels in physiological function; disease states and drug actions on the level of the membrane, cell, and organ. Familiarizes students with concepts, methods, and recent progress in understanding mechanisms of neurotransmitter-drug receptors.

**702 Physiological Disposition of Drugs and Poisons** Spring. 1-3 credits. By permission of instructor only. Letter grades only.

**703 Receptor Binding Theory and Techniques (also Biological Sciences 720, Seminar in Advanced Topics in Neurobiology and Behavior)** Fall. 2 credits. By permission of instructors. S-U grades optional. Lecture, T 7-8:50 p.m. R. E. Oswald, G. A. Weiland.

Physical-chemical and quantitative aspects of ligand-receptor interactions will be emphasized.

## Special Projects and Research

**711 The Role of Calcium in Stimulus-Secretion Coupling** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. C. M. S. Fewtrell.

**712 The Receptor for Immunoglobulin E on Tumour Basophils** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. C. M. S. Fewtrell.

**713 Studies on Thyroid Hormone Metabolism and Action** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. D. C. Ferguson.

**714 Studies on Renal Iodine Transport and Excretion** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. D. C. Ferguson.

**715 Clinical Pharmacokinetics** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. W. S. Schwark, D. C. Ferguson.

**716 Neurobiology of Seizure Disorders** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. W. S. Schwark.

**717 Single-Channel Recording** Fall, spring, or summer. 1-3 credits. S-U grades optional. Hours to be arranged. R. E. Oswald.

**718 Structure-Function of the Nicotinic Acetylcholine Receptor** Fall, spring, or summer. 1-3 credits.

Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. R. E. Oswald.

**719 Computer Modeling of Drug-Receptor Interactions** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. R. E. Oswald.

**720 Modulation of Nicotinic Acetylcholine Receptor Functions by Substance P** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. G. A. Weiland.

**721 Molecular Mechanisms of Pharmacological Blockade of Voltage-Dependent Calcium Channels** 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. G. A. Weiland.

**722 Mechanism of Action of Thyrotropin-Releasing Hormone** Fall, spring, or summer. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. G. A. Weiland.

**723 The Role of Calcium in the Control of Electrolyte Transport** Fall or spring. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. G. W. G. Sharp.

**724 The Control of Hormone Secretion** Fall or spring. 1-3 credits. Prerequisite: permission of instructor. S-U grades optional. Hours to be arranged. G. W. G. Sharp.

**Special Topics in Pharmacology** Fall, spring, or summer. 1 credit each topic. S-U grades optional. Hours to be arranged. Prerequisite: permission of instructor. Pharmacology faculty. Reading and discussions.

**741 Neuromodulation** G. A. Weiland.

**742 Receptor Mechanisms** G. A. Weiland.

**743 Neuropeptides** G. A. Weiland.

**744 Voltage-dependent Calcium Channels** G. A. Weiland, R. E. Oswald.

**745 Neuropharmacology** G. A. Weiland, R. E. Oswald.

**746 Electrophysiological Techniques** R. E. Oswald.

**747 Central Nervous System Neurotransmitter Receptors** R. E. Oswald.

**748 Stimulus-Secretion Coupling** C. M. S. Fewtrell.

**749 Second Messengers in Cell Activation** C. M. S. Fewtrell.

**750 Cell Calcium** C. M. S. Fewtrell.

**751 Receptors in the Immune System** C. M. S. Fewtrell.

**752 Mediators of Inflammation** C. M. S. Fewtrell.

**753 Clinical Pharmacology** D. C. Ferguson, W. S. Schwark. Discussion on current issues in applied therapeutics in veterinary medicine.

**754 Clinical Endocrinology** D. C. Ferguson, M. Hoenig. Discussion on current issues in clinical endocrinology with emphasis on veterinary medicine.

**755 Calcium in the Control of Hormone Secretion** Fall or spring. G. W. G. Sharp.

**756 Mechanisms of Calcium Handling** Fall or spring. G. W. G. Sharp.

**757 Intestinal Electrolyte Transport** Fall or spring. G. W. G. Sharp.

**758 Thyroid Hormone Metabolism and Action** Fall or spring. G. W. G. Sharp.

**759 Receptor Binding Techniques** Fall, spring, or summer. G. A. Weiland, R. E. Oswald.

## Physiology

Professor R. H. Wasserman, chairman  
717 Veterinary Research Tower  
607/256-5454, ext. 2430

Professors: E. N. Bergman, A. Dobson, E. L. Gasteiger, W. Hansel, T. R. Houpt, F. Kallfelz, F. W. Lengemann, P. Nathanielsz, A. F. Sellers, D. N. Tapper, J. F. Wootton; associate professors: K. Beyenbach, R. A. Corradino, K. A. Houpt, E. Loew; assistant professors: J. Fortune, A. Quaroni; senior research associates: P. W. Concannon, C. S. Fullmer, R. A. Wentworth; postdoctoral associates: J. Chandler, D. Petzel; visiting fellow: C. Drost

Specific information about faculty, staff, and courses may be obtained by contacting the department.

The department is well equipped for advanced work in the applications of physical and biochemical methods to problems of animal and biological research. The following research areas are emphasized: (a) reproductive physiology, (b) endocrinology, (c) cellular physiology, (d) neurophysiology, (e) gastrointestinal physiology, (f) metabolism, (g) behavioral physiology, (h) renal physiology, and (i) vision.

The Department of Physiology is the nucleus of the Section of Physiology of the Division of Biological Sciences. The primary responsibility of this section is the teaching and training of undergraduate and graduate students of the University in the physiological disciplines, an activity in which the department has been involved for the past several years. The section includes joint appointees from other departments of the college and of the University, expands the role of the college in University-wide educational activities, and provides a means of additional interaction for other colleges of the University and the College of Veterinary Medicine.

**Bio S 214 Biological Basis of Sex Differences (also Women's Studies 214)** Spring. 3 credits. Prerequisite: one year of introductory biology. S-U grades optional. Lectures, T R 8:30-9:55. Occasional discussions to be arranged. J. E. Fortune.

The structural and functional differences between the sexes are examined. Emphasis is placed on mechanisms of mammalian reproduction; where possible, special attention is given to studies of humans. Current evidence of the effects of gender on nonreproductive aspects of life (behavior, mental and physical capabilities) is discussed. The course is intended to provide students with a basic knowledge of reproductive endocrinology and with a basis

for objective evaluation of sex differences in relation to contemporary life.

**Bio S 274 The Vertebrates** Spring. 5 credits. Primarily for sophomores; this course is a prerequisite for many advanced courses in vertebrate biology, anatomy, and physiology. Each lab limited to 21 students. Prerequisite: one year of introductory biology for majors. Fee, \$10. Lectures, T R 10:10. Laboratories, M W 1:25–5, M W 7–10 p.m., or T R 1:25–5. A. R. McCune.

An introduction to the evolution, classification, comparative anatomy, life history, and behavior of vertebrate animals. Laboratory dissection and demonstration are concerned with structure, classification, systematics, biology of species, and studies of selected aspects of vertebrate life.

**Bio S 313 Histology: The Biology of the Tissues** 4 credits. Prerequisite: one year of introductory biology; a background in vertebrate anatomy and organic chemistry or biochemistry strongly recommended. Lectures, T R 11:15. Laboratories, T R 2–4:25.

Provides the student with a basis for understanding the microscopic, fine structural, and functional organization of vertebrates, as well as the methods of analytic morphology at the cell and tissue levels. The dynamic interrelations of structure, composition, and function in cells and tissues are stressed.

**Bio S 315 Ecological Animal Physiology, Lectures** Fall, odd-numbered years. 3 credits. Prerequisite: one year of introductory biology for majors. M W F 10:10. W. N. McFarland.

An introductory course for students interested in ecology and physiology. The characteristics of the physical environment that are important to organisms are discussed, and the physiological, behavioral, and morphological adaptations of vertebrate and invertebrate animals to environment are analyzed.

**Bio S 316 Cellular Physiology** Spring. 4 credits. Limited to 56 students, with preference given to students concentrating in animal physiology and anatomy. Each lab limited to 28 students. Prerequisite: concurrent or previous enrollment in Biological Sciences 330 or 331. Lectures, M W F 9:05. Laboratories, M or T 1:25–5. A. Quaroni, R. A. Corradino, and staff.

Lectures introduce students to the most current information on the ways cells function and regulate themselves and neighboring cells and on what molecules are involved in these regulatory processes. Laboratories provide an introduction to cell and organ culture and to immunological techniques used to study cell structure and function *in vivo* and *in vitro*. Experiments performed in the laboratory are closely related to, and provide practical experience with, subjects covered in the lecture.

Note that different options are currently under consideration to increase the number of students who can be admitted to this course to 100. This will almost certainly result in a change in the schedule of the laboratories. Consult the Course Supplement for any changes in course organization.

**Bio S 317 Ecological Animal Physiology, Laboratory** Fall. 1 credit. Limited to 12 students. Prerequisite: concurrent enrollment in Biological Sciences 315. Offered alternate years. Laboratory, W or R 1:25–4:25. W. N. McFarland. Exercises involve measurements of important environmental factors in local habitats, laboratory experiments to familiarize students with the use of



Dr. Charles E. Short, professor of anesthesiology and chief of the Section of Anesthesiology

physiological methods, and an individual student research project dealing with specific adaptations of organisms to environment.

**346 Introductory Animal Physiology, Lectures (also Biological Sciences 311)** Fall. 3 credits. Prerequisites: one year of college biology, chemistry, and mathematics. Lectures, M W F 11:15. Evening preliminary examinations to be arranged. K. Houpt.

A general course in vertebrate physiology emphasizing the basic characteristics of the circulatory, nervous, pulmonary, renal, and gastrointestinal systems; energy metabolism; endocrinology; and reproductive physiology. Neural and hormonal control of function is emphasized.

**348 Introductory Animal Physiology, Laboratory (also Biological Sciences 319)** Fall. 2 credits. Limited to 80 students, with preference given to students concentrating in animal physiology and anatomy. Each limited to 20 students. Prerequisite: concurrent or previous enrollment in Veterinary Medicine 346 (also Biological Sciences 311) or permission of instructor based on meritorious performance in another introductory physiology course. Laboratories, M T W or R 1:25–5. R. A. Corradino, P. W. Concannon. A series of exercises designed to illustrate basic physiologic processes in animals, including mammals. Students learn scientific methodology and analyses of results by actual performance of the exercises. Reports of laboratory activities are required. Grading is based on evaluation of the reports and laboratory performance.

**Bio S 351 Biological Rhythms with a Period of One Day to One Year** Fall. 1 credit. Prerequisites: one year of introductory biology and either Mathematics 106, 111, or 113. Lecture, R 12:20. A. van Tienhoven. Theoretical and practical aspects of circadian and circennial rhythms will be considered. Selected topics, such as the biological clock of plants, insects, and vertebrates, will be



Dr. Francis A. Kallfelz, professor of veterinary medicine and chief of Radiological and Physical Diagnostics

presented. Light will be considered as a stimulus and as an entraining agent. The role of rhythms of migration and reproduction will be emphasized.

**Bio S 410 Seminar in Anatomy and Physiology** Fall and spring. 1 credit. May be repeated for credit only once. Limited to upperclass students. S-U grades only. Seminar to be arranged. Organizational meeting first W of each semester at 7:30 p.m. in Stimson G 25. Staff (coordinator: R. H. Wasserman).

Topics: fall 1985, dependability of the nervous system, E. L. Gasteiger; spring 1986, gamete physiology and fertilization, R. H. Foote.

**Bio S 411 Comparative Neuroendocrinology** Fall. 3 credits. Prerequisite: Biological Sciences 311 or Entomology 483. Lectures, M W F 11:15. H. H. Hagedorn, A. van Tienhoven.

A comparison of the interactions of the nervous and endocrine systems in invertebrates and vertebrates, from *Hydra* to humans. Areas covered will include morphology, development, evolution, physiology, and molecular biology of neuroendocrine glands and their hormones.

**Bio S 412 Special Histology: The Biology of the Organs** Spring, even-numbered years. 4 credits. Limited to 12 students. Prerequisite: Biological Sciences 313 or written permission of instructor. Lectures, W F 9:05. Laboratories, W F 2-4:25.

A continuation of Biological Sciences 313. The microscopic and ultrastructural organization of the principal vertebrate organ systems are studied in relation to their development, functional interaction, and special physiological roles. Courses 313 and 412 together present the fundamental aspects of the microscopic and submicroscopic organization of the vertebrate. The organization of the course involves student participation in lecture-seminars and the prosecution of independent project work

supplementary to the regular work of the laboratory. The latter enables students to gain practical experience with histological and histochemical preparatory techniques.

**Bio S 452 Comparative Physiology of Reproduction of Vertebrates, Lectures (also Animal Sciences 452)** Spring. 3 credits. Prerequisite: Animal Sciences 427 or permission of instructor. Lectures, M W F 1:25. A. van Tienhoven. Sex and its manifestations. Neuroendocrinology, endocrinology of reproduction, sexual behavior, gametogenesis, fertilization, embryonic development, care of the zygote, environment and reproduction, and immunological aspects of reproduction.

**Bio S 454 Comparative Physiology of Reproduction of Vertebrates, Laboratory (also Animal Sciences 454)** Spring. 2 credits. Prerequisite: concurrent or previous enrollment in Biological Sciences 452 or permission of instructor. Laboratory hours to be arranged; organizational meeting first F of semester at 2:30. A. van Tienhoven. The laboratory provides students with an opportunity to design and execute independently experiments with limited objectives.

**Bio S 458 Mammalian Physiology** Spring. 6 credits. Enrollment limited. Graduate student auditors allowed in lectures. Prerequisite: Veterinary Medicine 346 or equivalent with written permission of instructor. Lectures, M W F 8. Laboratory, M or W 1:25-4:25; 4 additional hours to be arranged. K. W. Beyenbach and staff. Selected topics in mammalian physiology are discussed in the lecture and concurrently studied in the laboratory. Topics are selected from the following: physiology of excitable epithelial membranes, the autonomic nervous system, cardiovascular physiology, gastrointestinal physiology, renal physiology, respiration physiology, and acid-base balance.

**Bio S 499 Undergraduate Research in Biology** Fall and spring. Variable credit. Prerequisite: written permission from the staff member who will supervise the work and assign the grade. S-U grades optional. Any faculty member in the Division of Biological Sciences may act as a supervisor. Faculty supervisors outside the division are acceptable only if a faculty member of the division agrees to take full responsibility for the quality of the work. *This course is divided into multiple sections as printed in the Course and Time Roster and its supplement.* Students must register under supervisor's assigned section number, or section 1 if supervisor was not assigned a section number. Hours to be arranged. Staff.

Practice in planning, conducting, and reporting independent laboratory and library research programs. Research credits may *not* be used in completion of the following concentration areas: animal physiology and anatomy; biochemistry; botany; cell biology; and ecology, systematics, and evolution. No more than 4 credits of research may be used in completion of the following concentration areas: genetics and development, neurobiology and behavior.

**524 Veterinary Physiology III** Second year, fall. 4 credits. Prerequisites: Veterinary Medicine 525, 526, and 527. Letter grades only. Hours to be arranged. T. R. Houpt and others. A continuation of organ and systems physiology of domestic animals that includes simple-stomach and ruminant digestive systems, hepatic function, liver and metabolic physiology, endocrinology, and reproduction, with emphasis on medically relevant aspects.

**525 Cell Physiology** First year, fall. 3 credits.

Prerequisite: Biological Sciences 330 or 331, or an equivalent 4-credit course in general biochemistry. Letter grades only. Discussion sections to be arranged.

R. A. Corradino, R. H. Wasserman, R. R. Minor, and F. A. Kallfelz.

An introduction to the fundamental structure-function relationships of the major components of normal animal cells. The cellular and molecular bases of disease processes will be discussed in conjunction with assigned readings in the recent research literature.

**526 Systems Physiology I** First year, fall. 4 credits.

Prerequisites: Veterinary Medicine 525, Anatomy 500 and 501, or Anatomy 700 and Biological Sciences 330–331. Letter grades only. Hours to be arranged. D. N. Tapper and staff.

This course, together with Veterinary Physiology 527, is a study of systemic physiology of the common domestic animals. Lectures and laboratory exercises on living animals emphasize bodily function as a foundation for pathology, surgery, veterinary clinical medicine, and diagnosis of disease. The emphasis is at the system level with reference to the whole animal. Topics to be covered are the physiology of locomotion and motor control, and the neural basis of pain sensation and its modulation. Fundamental processes of nerves, muscles, and synapses are also introduced. Reflex activity associated with somatic and autonomic function is considered from the perspective of clinical evaluation and therapeutic intervention. Other topics to be covered include circulatory, renal, and respiratory physiology.

**527 Systems Physiology II** First year, spring. 4 credits.

Prerequisites: Veterinary Medicine 525 and 526. Letter grades only. Hours to be arranged. T. R. Houpt, E. N. Bergman, and staff.

A continuation of organ and systems physiology of domestic animals that includes acid-base relations and environmental physiology, simple-stomach and ruminant digestive systems, hepatic function, liver and metabolic physiology, endocrinology, and reproduction, with emphasis on medically relevant aspects.

**612 Research Opportunities in Veterinary Medicine** An independent study course. Students will work closely with individual faculty members in their research laboratories. May be taken for credit during the school term, during January, or in the summer.

**Bio S 619 Lipids (also Nutritional Sciences 602)** Fall.

2 credits. Lectures, T R 11:15. A. Bensadoun.

Advanced course on biochemical, metabolic, and nutritional aspects of lipids. Emphasis is placed on critical analysis of current topics in lipid methodology; lipid absorption; lipoprotein secretion, structure, and catabolism; mechanism of hormonal regulation of lipolysis and fatty acid synthesis; and cholesterol metabolism and atherosclerosis.

**625 Problems in Dog and Cat Behavior** First year, spring. 1 credit. K. Houpt.

**626 Problems in Equine Behavior** First year, spring. ½ credit. K. Houpt.

**627 Acid-Base Relations** Fall or spring. 1 credit.

Prerequisite: Physiology 526 or permission of instructor. Elective course for all veterinary students. A. Dobson.

The course uses a self-instruction program to promote an

understanding of the basis, interpretation, and technique of measuring acid-base status.

**628 Graduate Research in Animal Physiology (also Biological Sciences 719)** Fall and spring. Variable credit.

Prerequisite: written permission of section chairperson and staff member who will supervise the work and assign the grade. S-U grades optional. Hours to be arranged. Similar to Biological Sciences 499 but intended for graduate students who are working with faculty members on an individual basis.

**Bio S 711–718 Special Topics in Physiology** Fall or spring. 1 or 2 credits each topic. May have limited enrollments.

Lecture, laboratories, discussions, or seminars on specialized topics as indicated. Contact the professor in charge for information concerning format, organizational meeting, meeting times, and place.

Fall 1985: two topics are offered.

**711 Dependability of the Nervous System** 1 credit.

Seminar, 1 hour each week. Schedule to be arranged. E. L. Gasteiger.

**717 Structure and Function of Joints with Emphasis on Arthritis** 1 credit.

Lecture, 1 hour each week. Schedule to be arranged. G. Lust.

Spring 1986: five topics are offered.

**712 Development and Differentiation of Intestinal Epithelium** 1 credit.

Lecture, seminar, 1 hour each week to be arranged. A. Quaroni.

**714 Physiology of Pregnancy** 2 credits. Seminar.

Schedule to be arranged. P. W. Nathanielsz.

**715 New Concepts for Improving Growth, Reproduction, and Lactation in Domestic Animals** 2 credits.

Lecture, discussion, 2 hours each week to be arranged. W. Hansel, R. A. Milvae.

**716 Seminar on Insect Physiology (also Entomology 685)** 1 credit.

Prerequisite: permission of instructor. Seminar, 1 hour each week to be arranged. H. H. Hagedorn.

**718 Gamete Physiology and Fertilization** 2 credits.

Lecture, discussion, 2 hours each week. Hours to be arranged. R. H. Foote.

**720 Special Problems in Physiology** Fall or spring.

Registration by permission. Hours to be arranged. Laboratory work, conferences, collateral readings, and reports; adapted to the needs of students.

**722 Basics of Radiation Safety** Fall or spring. 1 credit.

S-U grades optional. Lectures, T R 11:15.

F. W. Lengemann.

The major objective of this course is to provide a lecture series that will provide background in radioisotope procedures, handling, and safety to all who may be involved in the use of radioisotopes or instrumentation.

**726 Physiology** Fall. 3 credits. For graduate students.

Prerequisites: Veterinary Medicine 525, Anatomy 500 and 501, or Anatomy 700. D. N. Tapper and others.

An introduction to the fundamental structure-function relationships of the major components of normal animal cells. The cellular molecular bases of disease processes will be discussed in conjunction with assigned readings in the recent research literature.

**727 Physiology** Spring. 3 credits. Prerequisite:

Veterinary Medicine 726. T. R. Houpt and others.

A continuation of organ and systems physiology of domestic animals that includes acid-base relations and environmental physiology, simple-stomach and ruminant digestive systems, hepatic function, liver and metabolic physiology, endocrinology, and reproduction, with emphasis on medically relevant aspects.

**[750 Radioisotopes in Biological Research (also Biological Sciences 616)]** Fall, even-numbered years. 4 credits. Prerequisites: courses in animal or plant physiology or permission of instructor. Letter grades only. Lectures, T R 11:15. Laboratory, T 1:30. F. W. Lengemann. Not offered 1985-86.

Lectures and laboratories deal with the radioisotope as a tool in biological research. Among the topics considered are the use and detection of beta-emitting isotopes, gamma spectrometry, Cerenkov counting, neutron activation, autoradiography, and isotope dilution. Emphasis is placed on liquid scintillation counting, double-label experiments, and  $^{14}\text{C}$  and  $^3\text{H}$  as metabolic tracers. Experiments are designed to present basic principles using plants and animals as subject material.]

**752 Biological Membranes and Nutrient Transfer (also Biological Sciences 618)** Spring. 2 credits. Prerequisites: courses in animal or plant physiology, quantitative and organic chemistry, and physics, and permission of instructor. Recommended: a course in cellular physiology. Lectures, T R 11:15. R. H. Wasserman.

An introduction to elementary biophysical properties of biological membranes; theoretical aspects of permeability and transport; and mechanism of transfer of inorganic and organic substances primarily across epithelial membranes.

**753 Mammalian Neurophysiology (also Biological Sciences 450)** Spring. 3 credits. Prerequisites: two years of college biology. Recommended: courses in biochemistry and physics. Lecture-discussion, T 10:10. Laboratories, R 1:25-4:25. Additional hours to be arranged. E. L. Gasteiger.

The anatomy and physiology of the mammalian nervous system are examined through classical and modern laboratory studies. Sensory, central integrative, and motor functions are explored primarily by electrophysiologically recording spontaneous and evoked unit and field potentials. Behavioral, pharmacological, and histological methods are used where appropriate.

**758 Molecular Mechanisms of Hormone Action (also Biological Sciences 658)** Spring, even-numbered years. 2 credits. Prerequisite: permission of instructor. Lectures, T R 10:10. R. A. Corradino. An advanced course developed from the current literature on endocrine mechanisms.

**[759 Nutrition and Physiology of Mineral Elements (also Biological Sciences 615 and 659)]** Fall. 2 credits. Prerequisites: courses in basic physiology, intermediate biochemistry, and general nutrition. Lectures, T R 10:10. R. H. Wasserman, R. Schwartz, D. R. VanCampen. Not offered 1985-86.

Lectures on nutritional aspects and physiological, biochemical, and hormonal relationships of the prominent macroelements and microelements, with emphasis on recent developments. Information is included on methodologies of mineral research and the essentiality, requirements, transport, function, homeostasis, interrelationships, and toxicity of various mineral elements.]

**Animal Reproduction and Development (Animal Sciences 220)** Spring. 4 credits. Each lab limited to 36 students.

Prerequisite: one year of college biology or equivalent. Lectures, T R 9:05. Laboratory and demonstration, M T W R 2-4:25, T 10:10-12:35, or F 12:20-2:45. R. H. Foote. An introduction to the comparative anatomy and physiology of reproduction of farm animals. The life cycle from fertilization through development and growth to sexual maturity will be studied, with emphasis on physiological mechanisms involved, relevant genetic control, and the application to fertility regulation of animal and human populations. An autotutorial laboratory is available for independent study to prepare for laboratory experiments.

**Fundamentals of Endocrinology (Animal Sciences 427)** Fall. 3 credits. Prerequisite: human or veterinary physiology or permission of instructor. Laboratories, M W F 9:05. W. R. Butler.

The physiology of the endocrine glands and the roles played by each hormone in the regulation of normal body processes. Endocrine regulation of growth, metabolism, and reproduction is emphasized. Examples are selected from domestic species and humans.

**Fundamentals of Endocrinology, Laboratory (Animal Sciences 428)** Fall. 2 credits. Each lab limited to 30 students. Prerequisite: concurrent registration in Animal Sciences 427 or permission of instructor. Laboratory, T or R 1:25-4:25. W. R. Butler.

Laboratory exercises are designed to demonstrate hormonal mechanisms for each of the major endocrine glands. Laboratory techniques include animal surgery, blood collection, and hormone radioimmunoassay.

**Comparative Physiology of Reproduction of Vertebrates, Lectures (Animal Sciences 452)** Spring. 2 credits.

Prerequisite: Animal Sciences 427 or permission of instructor. Lectures, W F 1:25. A. van Tienhoven. Sex and its manifestations. Neuroendocrinology, endocrinology of reproduction, sexual behavior, gametogenesis, fertilization, embryonic development, oviparity, viviparity, environment and reproduction, and nutrition and reproduction.

**Comparative Physiology of Reproduction of Vertebrates, Laboratory (Animal Sciences 454)** Spring. 2 credits.

Prerequisite: concurrent or previous enrollment in Animal Sciences 428 or permission of instructor. Laboratory, hours to be arranged; organizational meeting F 2:30 first week of semester. A. van Tienhoven.

The laboratory provides students with an opportunity to design and execute independently experiments with limited objectives.

## Preventive Medicine

Professor D. Lein, acting chairman  
209 Diagnostic Laboratory  
607/256-5454, ext. 2640

Professors: J. R. Georgi, J. H. Whitlock (emeritus); associate professors: J. G. Babish, J. C. Thompson; assistant professors: M. Brunner, L. Clark, H. N. Erb, J. M. Scarlett Kranz, D. Wassom; joint appointees: E. W. Cupp, M. E. Georgi, R. H. Jacobson, D. Lein, G. Maylin, G. C. Poppensiek, T. J. Reimers, R. D. Smith



This department was organized in 1977 to emphasize three areas of study: (a) epidemiology, biostatistics, and public health; (b) animal health management; and (c) environmental health. In 1978 master's and Ph.D. concentrations in epidemiology were approved. The Section of Parasitology and International Health, added to the department in 1979 as part of the college's reorganization plan, is responsible for both instruction in veterinary parasitology and training of professional parasitologists. Specialized areas of research include diagnostic parasitology, immunoparasitology, parasite biochemistry and chemotherapy, bionomics, and systematics. The section offers both master's and Ph.D. degrees in parasitology.

**331 Medical Parasitology** Fall. 2 credits. Prerequisite: biology and zoology. Letter grades only. Offered alternate years. Lectures, M F 9:05. E. W. Cupp, R. H. Cypess. A systematic study of arthropod protozoan and helminth parasites of public health importance, with emphasis on epidemiological, clinical, and zoonotic aspects of these parasitisms.

**335 Wildlife Parasitology** Spring. 3 or 4 credits. Letter grades only. Lectures, W F 10:10–11:05. Laboratories, M 10:10. J. R. Georgi and staff. A systematic introduction to the protozoan and metazoan parasites and related diseases of vertebrate animals except domestic animals and man. Lectures concentrate on functional anatomy, parasitic adaptation, life history, and pathogenesis. Laboratories are devoted to parasitologic techniques, identification of higher taxa, access to taxonomic literature, and diagnosis of parasitism.

**510 Veterinary Parasitology** Second year, fall. 4 credits. Prerequisite: zoology and biology. Letter grades only. Hours to be arranged. J. R. Georgi and staff. A systematic study of arthropod, protozoan, and helminth parasites of vertebrate animals, with particular emphasis on the bionomics, epidemiology, and control of parasitisms of veterinary and public health importance. Laboratories consist of practical exercises in the antemortem and postmortem diagnosis of arthropod, protozoan, and helminth parasitism of domestic animals and interpretation of their pathogenetic significance.

**520 Preventive Medicine in Animal Health Management** Third year, spring. 2 credits. Letter grades only. Hours to be arranged. H. N. Erb, M. E. White, J. M. Scarlett Kranz.

Topics will include critical evaluation of the literature, economics, record keeping, monitoring production and disease, and preventive herd health, including quarantine, vaccination, animal management, and physical environment, on both general and species-specific bases.

**[545 Clinical Epidemiology** First year, fall. 2 credits. Letter grades only. Hours to be arranged. J. M. Scarlett Kranz, H. E. Erb.

This course includes a review of the basic concepts of acute and chronic disease epidemiology utilizing descriptive, analytical, and experimental techniques. The application of epidemiologic methods to the investigation of disease outbreaks and to the recognition, prevention, and control of diseases will be discussed.]

**611 Mastitis** January minisemester. 3 credits. Selective course open to second-, third-, and fourth-year veterinary

students. 6–8 hours a day for three weeks. D. Lein and staff.

An elective course for veterinary students. Covers the causes, diagnosis, treatment, and prevention of bovine mastitis. The role of management practices is stressed. The course includes lectures, readings, discussions, laboratory exercises, and farm visits as part of the Mastitis Control Program.

#### **617 Research Opportunities in Veterinary Medicine**

An independent study course. Students will work closely with individual faculty members in their research laboratories. May be taken for credit during the school term, during January, or in the summer.

#### **660 Safety Evaluation in Public Health (also Toxicology**

**660)** Spring. 2 credits. Elective for veterinary students (even years) and graduate course. Prerequisites: an introductory-to-intermediate-level course in biology, biochemistry, or physiology. A concurrent or prior course in toxicology would be helpful. S-U grades optional. Lecture, F 2:05–4:25. J. G. Babish.

Applying toxicologic methods for assessing chemical hazards to populations has become a major role of toxicologists in industry and government today. In this course current methodologies in risk assessment will be presented with emphasis on the interpretation of data in terms of public health effects. Topics covered will include (1) the concept of a safe level, (2) standards for acceptable testing, (3) good laboratory practices and government regulations, (4) testing procedures used in safety evaluation, and (5) monitoring human populations. Students will be evaluated on their ability to interpret data from animal studies and to estimate risks of human exposure.

**663 Veterinary Medicine in Developing Nations** Spring, even-numbered years, 2 credits. Elective for all veterinary students. S-U grades only. Lectures and discussions, F 2–4. K. A. Schat.

Veterinary and nonveterinary aspects concerning the problems of developing nations will be discussed. Final selection of topics will depend on availability of lectures (faculty).

#### **664 Introduction to Epidemiology** Fall. 3 credits.

Prerequisite or corequisite: a course in statistics. Recommended for seniors and graduate students. S-U grades optional. Epidemiology faculty.

Lectures and discussions will deal with the fundamentals of epidemiology, including study design methodologies, analysis, and interpretation of results. Current topics in epidemiology from the fields of nutrition, cancer, infectious and chronic diseases, occupational medicine, and the environment will be reviewed to illustrate the principles and practice of epidemiology.

**665 Advanced Epidemiology** Fall. 2 credits. Elective for third- and fourth-year veterinary students and also a graduate course. Prerequisites: Veterinary Medicine 545 and Statistics and Biometry 601 (College of Agriculture and Life Sciences). Lecture, hours to be arranged.

Epidemiology faculty.

Concepts introduced in Veterinary Medicine 545, Principles of Epidemiology, are further developed. Topics will include design and analysis of case-control and cohort studies, adjustment for confounding variables, sample-size determinations, clinical trials, and medical geography. Recent articles in environmental health, cancer, nutrition, and infectious diseases will be used as illustrations. Students will be expected to prepare term papers for





delivery in class.

**737 Advanced Work in Animal Parasitology** Fall or spring. 1 to 3 credits by arrangement. For advanced undergraduate and graduate students. Prerequisite: Pathology 335 or 510. Letter grades only. J. R. Georgi and other preventive medicine faculty. Special problems in parasitology and symbiology.

**766 Graduate Research** Fall, spring, or summer. Credit and hours to be arranged. Open to graduate students and others, by permission of the graduate faculty member concerned. S-U grades only. Graduate faculty of the Department of Preventive Medicine.

**767 Immunoparasitology** Spring. 2 credits. Offered alternate years. Lecture, hours to be arranged. Staff. This course studies the immune response to representative helminth and protozoan parasites of vertebrate hosts. Emphasis will be placed on the physiological and immunological relationships that play a role in regulation of parasitic infections. In vitro correlates of immunity to parasites, immunodiagnosis, and parasite-induced immunopotential and suppression will be discussed.

**768 Master's-Level Thesis Research** Fall or spring. 1-6 credits. S-U grades only. Hours to be arranged. Graduate faculty, Preventive Medicine and Diagnostic Laboratory. This course will enable graduate students in the Department of Preventive Medicine to receive graduate research credits for master's-level thesis research.

**769 Doctoral-Level Thesis Research** Fall or spring. 1-6 credits. S-U grades only. Hours to be arranged. Graduate faculty, Preventive Medicine and Diagnostic Laboratory. This course will enable students in the Department of Preventive Medicine to receive graduate research credits for doctoral-level thesis research.

**783 Seminars in Parasitology** Fall or spring. 1 credit. Open to veterinary students, graduate students minoring

in the field of parasitology, and others by permission of the instructor. S-U grades only. Lectures, R 4. D. L. Wassom. A seminar series designed to acquaint students with current research in the field of parasitology. The range of topics will include the ecology of parasitism, parasite systematics, immunoparasitology, and parasitic diseases of plants and animals, including man.

**786 Graduate Seminar** Fall and spring. 1 credit. S-U grades only. Hours to be arranged. Graduate faculty, Preventive Medicine and Diagnostic Laboratory. This course, which is suggested for all graduate students in the Department of Preventive Medicine and the Diagnostic Laboratory, is designed to allow students to prepare and present seminars. It will be handled by a different member of the graduate faculty each semester.

**787 The Biology of Parasitism (also Biological Sciences 459)** Spring. 2 credits. All students welcome to enroll. S-U grades optional. M W 2:30-3:20. D. L. Wassom. The biology of parasitism will be explored with emphasis placed on the ecological and evolutionary aspects of host-parasite interactions. Topics to be covered include the evolution of host-parasite systems, the ecology of parasitism, structural and physiological adaptations for parasitism, and the ecology of parasitic disease. The course is open to graduate students and upper-division undergraduates with interest in parasitology, ecology, and human or veterinary medicine.

**799 Independent Studies in Epidemiology** Fall or spring. 1 to 3 credits. S-U grades optional. Times to be arranged with the instructor. J. G. Babish, L. C. Clark, R. H. Cypess, H. N. Erb, J. M. Scarlett Kranz. The purpose of this course is to investigate an epidemiologic topic to research a problem with one of the instructors. It will provide experience in problem definition, research design, and the analysis of epidemiologic data.

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# Tentative Cornell Academic Calendar 1986-87

## Fall Semester

Registration begins	Tuesday, August 26
Registration ends	Wednesday, August 27
Instruction begins	Thursday, August 28
Fall recess begins	Saturday, October 11, 1:10 p.m.
Instruction resumes	Wednesday, October 15, 7:30 a.m.
Thanksgiving recess begins	Wednesday, November 26, 1:10 p.m.
Instruction resumes	Monday, December 1, 7:30 a.m.
Instruction ends	Saturday, December 6
Study period begins	Monday, December 8
Study period ends	Wednesday, December 10
Final examinations begin	Thursday, December 11
Final examinations end	Saturday, December 20

## Spring Semester

Registration begins	Thursday, January 22
Registration ends	Friday, January 23
Instruction begins	Monday, January 26
Spring recess begins	Saturday, March 21, 1:10 p.m.
Instruction resumes	Monday, March 30, 7:30 a.m.
Instruction ends	Saturday, May 9
Study period begins	Sunday, May 10
Study period ends	Wednesday, May 13
Final examinations begin	Thursday, May 14
Final examinations end	Saturday, May 23
Commencement	Sunday, May 31

This calendar is subject to modification  
and is not legally binding.

In enacting this calendar, the University has scheduled  
classes on religious holidays. It is the intent of the  
University that students missing classes due to the  
observance of religious holidays be given ample  
opportunity to make up work.

Cornell University Announcements

ISSN 0744-4605

New York State College of Veterinary Medicine

Cornell University

C-117 Schurman Hall

Ithaca, New York 14853-6401

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paid at Ithaca, New York