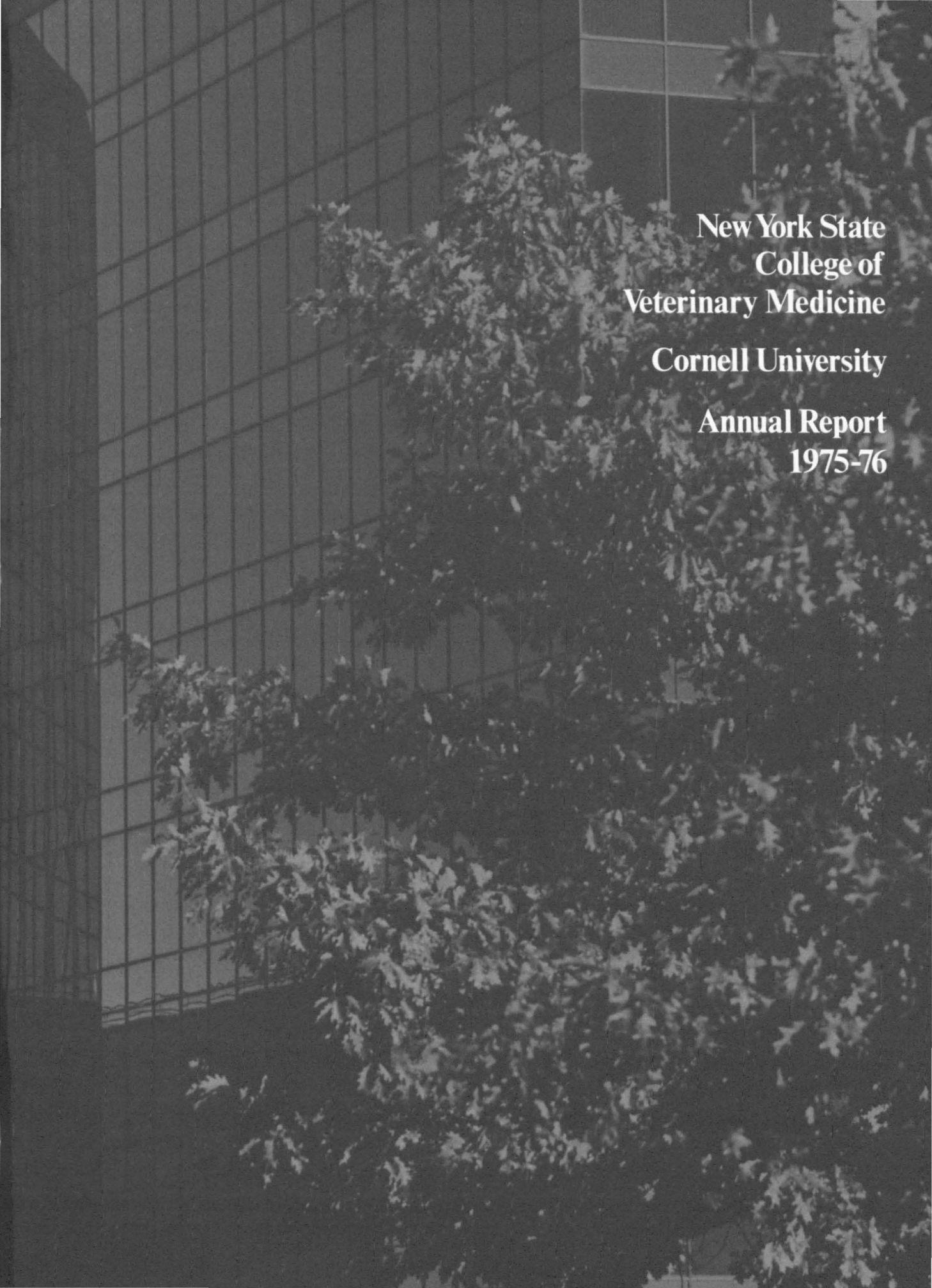


New York State College of Veterinary Medicine

Cornell University

Annual Report 1975-76

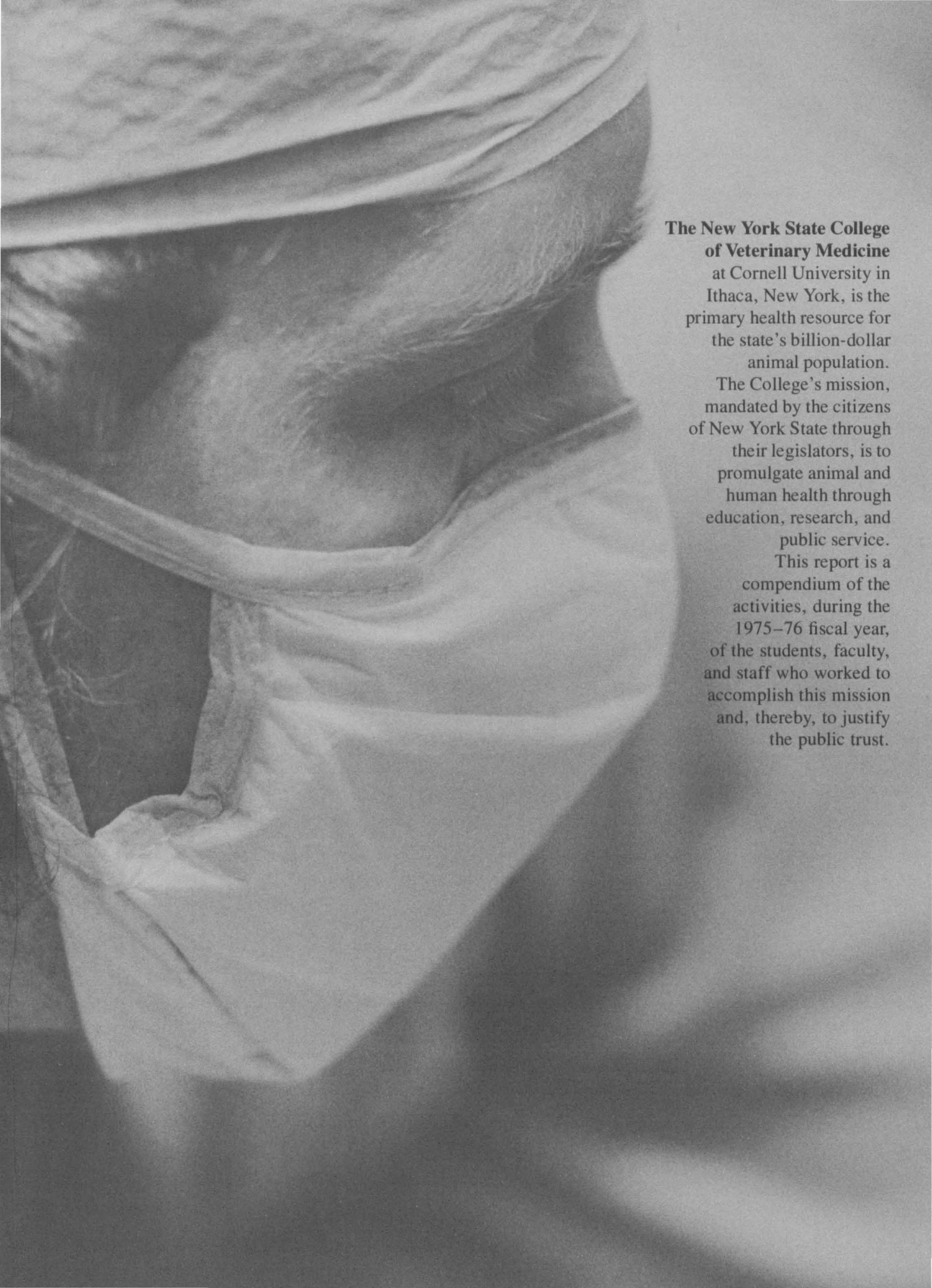
The New York State College of Veterinary Medicine
A Statutory College of the
State University of New York

A Component College of the
State University of New York
Health Sciences

Cornell University
Ithaca, New York

Seventy-ninth Annual Report

July 1, 1975–June 30, 1976
Legislative document
number 88



The New York State College of Veterinary Medicine at Cornell University in Ithaca, New York, is the primary health resource for the state's billion-dollar animal population. The College's mission, mandated by the citizens of New York State through their legislators, is to promulgate animal and human health through education, research, and public service. This report is a compendium of the activities, during the 1975–76 fiscal year, of the students, faculty, and staff who worked to accomplish this mission and, thereby, to justify the public trust.

Office of the Dean
New York State College of
Veterinary Medicine
A Statutory College of the State
University at Cornell University
Ithaca, New York

December 1, 1976

President Dale R. Corson
300 Day Hall
Cornell University

Dear President Corson:

Pursuant to the requirements of the laws of New York State, I present herewith a report of the activities and accomplishments of the faculty and staff of the New York State College of Veterinary Medicine for the year ending June 30, 1976, this being the seventy-ninth annual report of this College.

Respectfully submitted,

Edward C. Melby, Jr.
Dean

Office of the President
Cornell University
Ithaca, New York

December 14, 1976

The Board of Trustees of
Cornell University
The Chancellor and Board of Trustees
of the State University of New York
The Governor of the State of New York

Sirs:

I am pleased to submit, on behalf of Cornell University, the report of the New York State College of Veterinary Medicine for the year beginning July 1, 1975, and ending June 30, 1976. This report is submitted in accordance with requirements of Section 5711 of Article 115 of the State Education Law.

Sincerely,

Dale R. Corson
President

Office of the Chancellor
State University of New York
Albany, New York

January 3, 1977

To the Board of Regents, the
Governor, and the Legislature of the
State of New York

Sirs:

Pursuant to the law, the 1975–76 Annual Report of the New York State College of Veterinary Medicine at Cornell University is herewith submitted.

Very respectfully yours,

Ernest L. Boyer
Chancellor

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Commitment to Quality

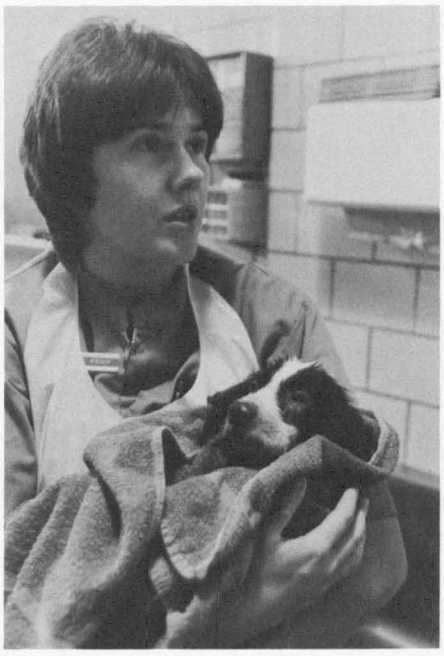
A goodly ration of outside recognition and inner satisfaction, along with some portentous challenges, earmarked the past year at the New York State College of Veterinary Medicine. As in other years, the accomplishments reflect the traditional threefold mission: instruction/research/public service.

Efficiency in administering the vast program of research was given a major boost when the more than two hundred projects were entered on the computer under the Current Research Information Service, a standardized method of recording and reporting.

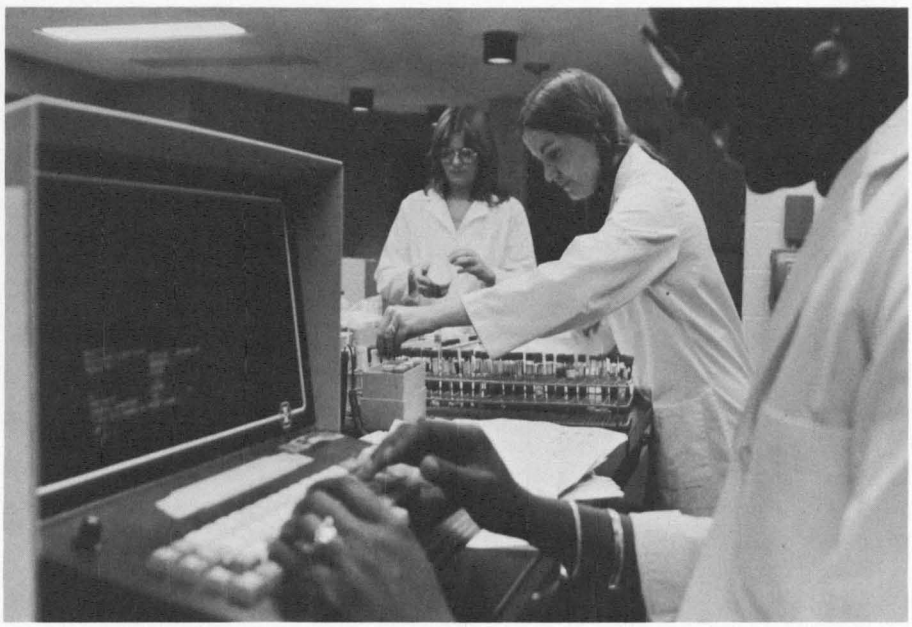
Service to the public continued to expand through direct clinical and diagnostic activity, continuing education programs, faculty participation in meetings and seminars, and technical publications, news stories, and other items directed to practitioners and lay people.

Many of the most exciting and promising developments of the year, however, relate to instructional matters. So, likewise, do some of the more troubling problems.

To remain in the forefront of the veterinary medical field requires the willingness to make changes. Over the years, the College has demonstrated its willingness and its capacity to respond to the changing needs of society and the science by revising procedures, programs, and policies.



Increasingly during the past few years, it has seemed worthwhile to conceive of the College as a regional resource. Mounting pressure in many parts of the nation for more veterinarians to practice and more graduates of

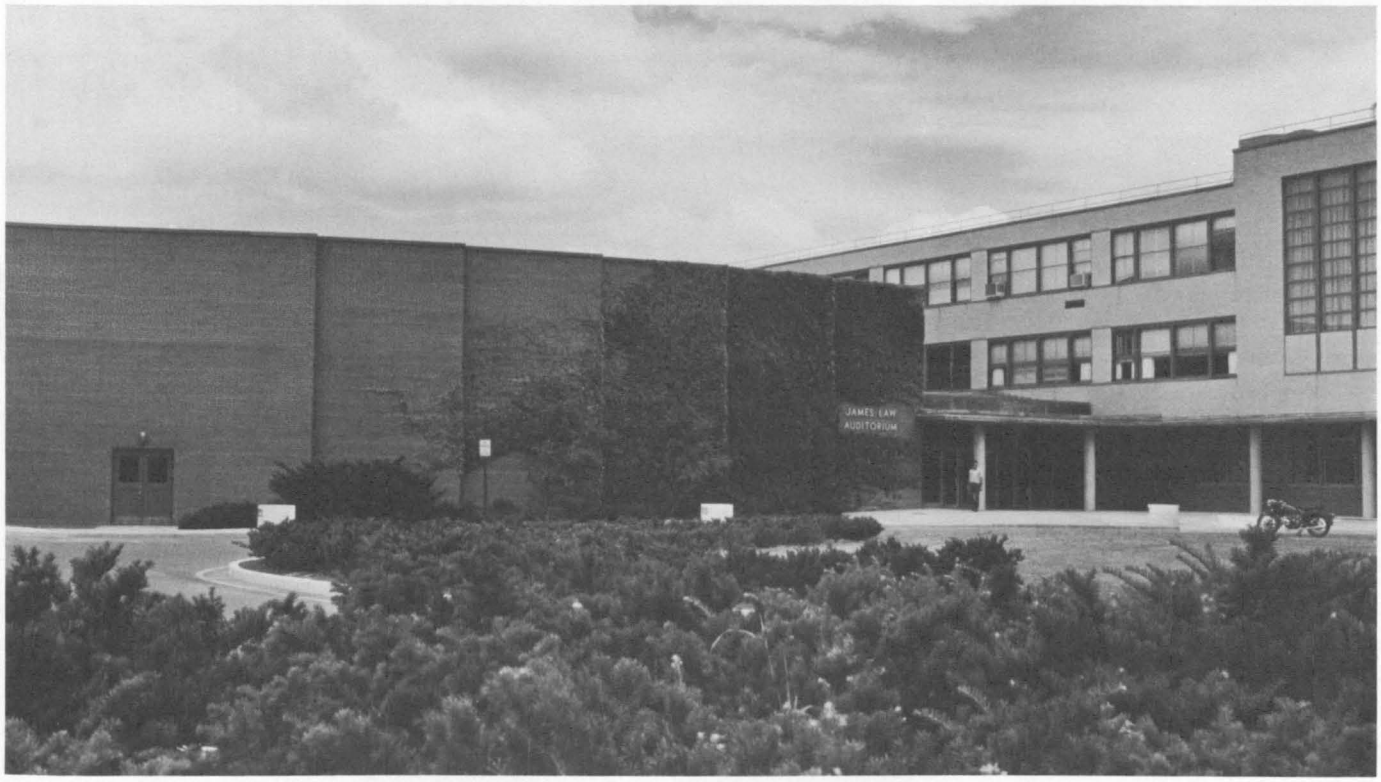


the professsional-degree program to fill other career posts in the field has served to point up the shortage of opportunities in the nine heavily populated states of the Northeast for young people interested in such careers.

Agreements reached this year among representatives of the College, the School of Veterinary Medicine at the University of Pennsylvania, several New England States, and New Jersey established the framework for a cooperative admissions and training program and constitute a major step toward realizing the regional-resource goal.

Already this has led to changes in the College's instructional program, and much of this Report reflects the ways in which the College is meeting the demands for greater efficiency that is required in order to take full advantage of the broader opportunities.

Change inevitably involves making choices, and, because choices often entail compromise, change must always be scrutinized in the light of its effect on quality, for the College's most treasured hallmark is its unwavering commitment to quality. There must be no compromise with excellence.

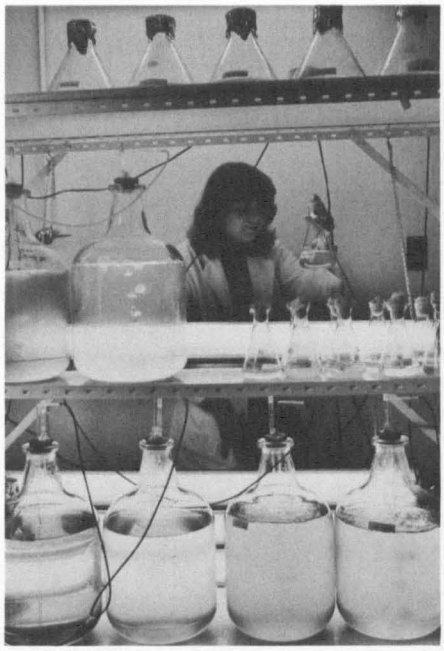


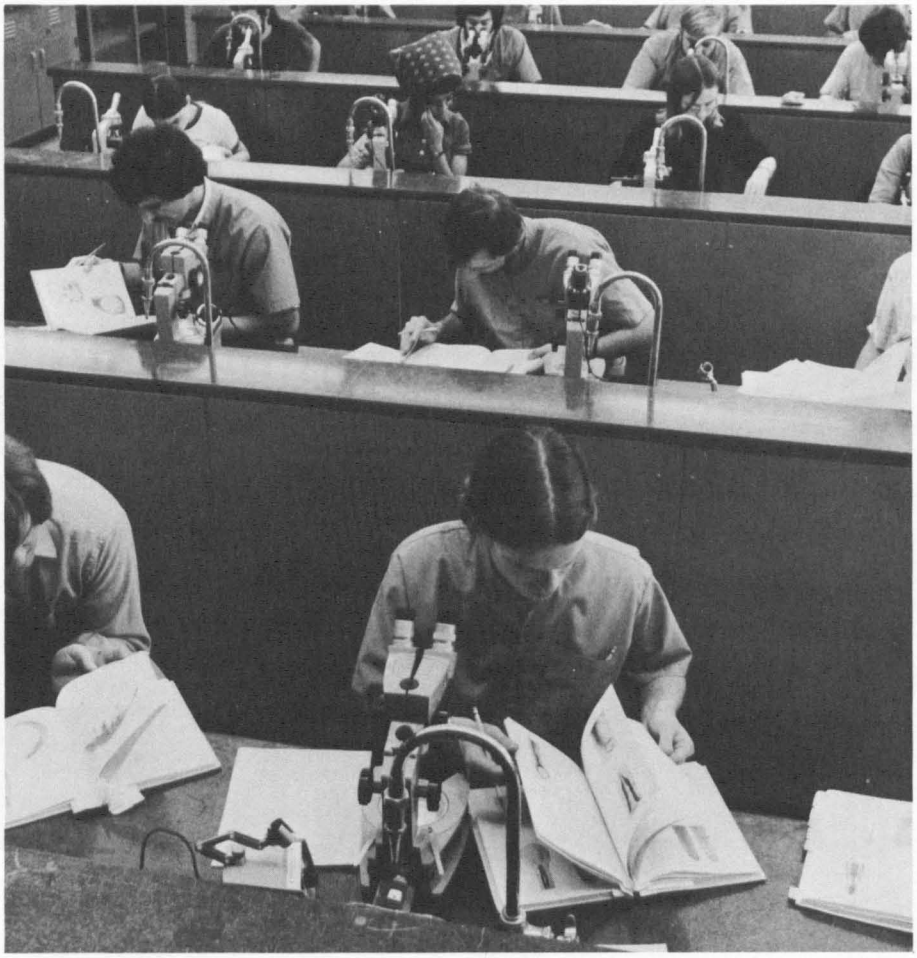
Responsible Growth

In order to continue accepting the same number of New York State applicants each year, while admitting more qualified applicants from the states cooperating in the regional plan, it is necessary to prepare for an overall increase in the number of students being trained at the New York State College of Veterinary Medicine. A timetable for this growth has been set up and a maximum tentatively established.

Along with the planned increase in enrollment, ways are being explored to increase the quality of the education offered by making maximum use of regional resources. Areas of strength in this College and the Pennsylvania School of Veterinary Medicine will be made available to staff and students of both. Opportunities for students at both colleges to enrich their training through specialized elective work done at other health-science institutions in the Northeast are also being developed.

Such additional opportunities, however, can be taken advantage of only if the main thrust of veterinary medical training — the sound preparation of individuals for responsible practice with a broad range of species — can be



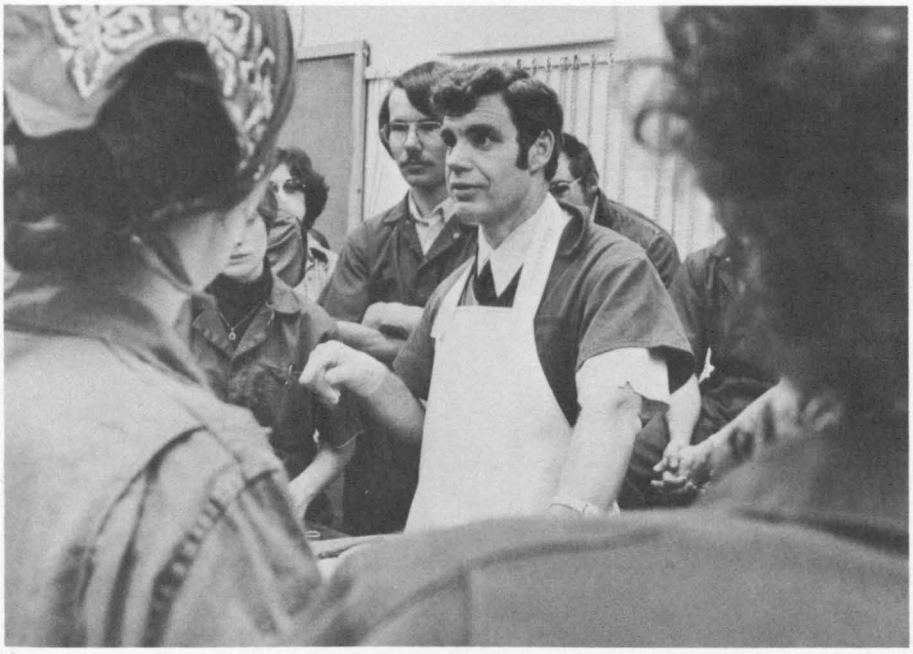


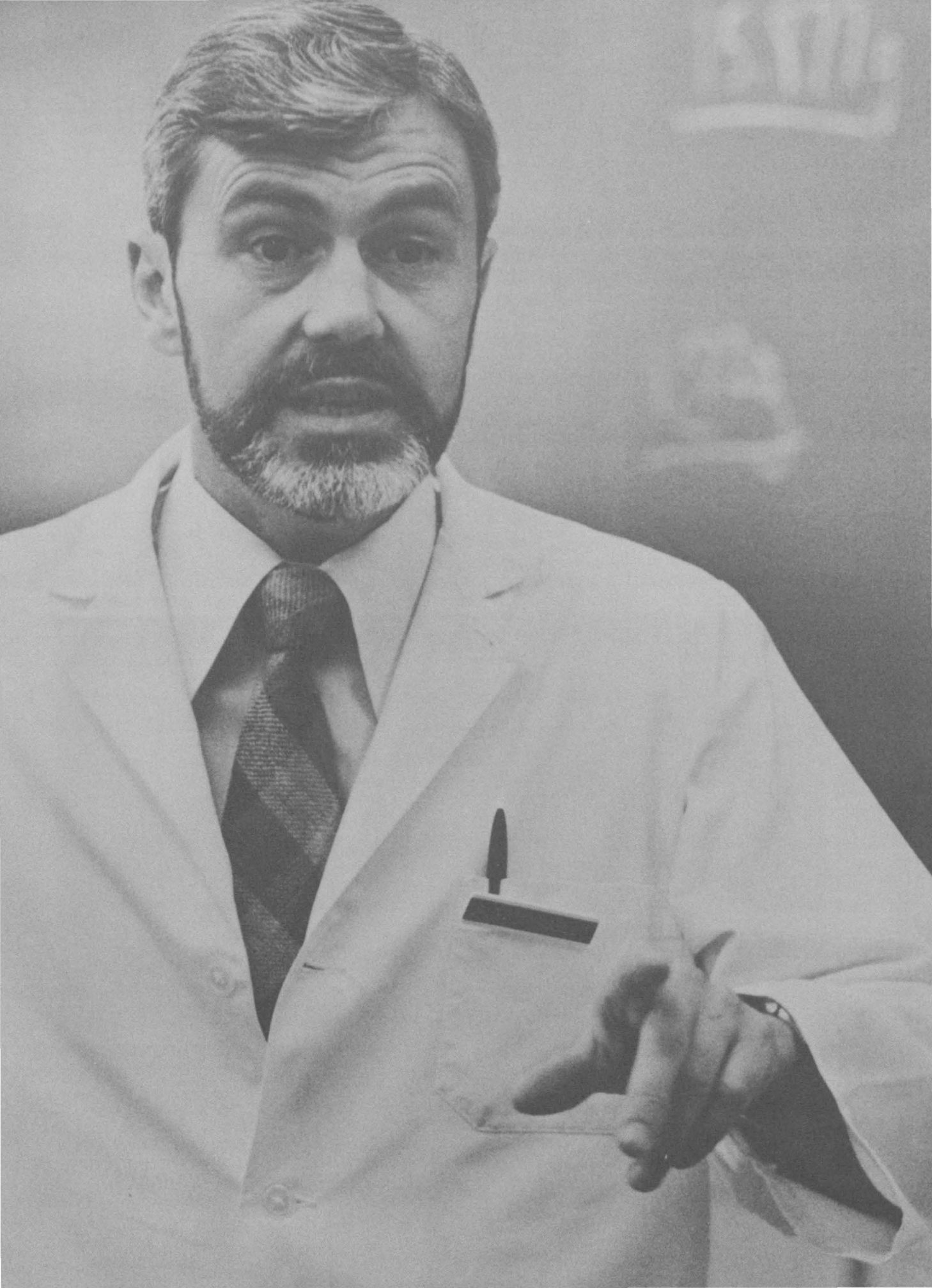
further streamlined. Efforts to do that have prompted changes in the curriculum, courses, laboratories, library, and clinics. Some aspects of the College clinical facilities already are falling short of needs; the press of additional students will make the situation more acute.

High quality training in the clinical stages can be effected only with sufficient faculty and other personnel; a plentiful supply of varied cases to be observed, diagnosed, and treated; and adequate space for both.

Some important gaps in the College's professional staff have recently been filled; the search for highly skilled personnel to complete the roster is being intensified.

Providing the needed environment for high-quality training in veterinary medicine is costly; not providing it could be more costly. The additional funds provided by the cooperating states to support their students' education will help ease the burden of taking the vital steps, to the ultimate benefit of all.





Reports

Administration

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Administration

Several changes designed to increase faculty involvement in administrative matters, improve efficiency, and promote activity in some areas not fully attended previously, characterized administrative activities during the year. Two new associate deans were named: Dr. Lennart P. Krook took on the task of coordinating and strengthening postdoctoral education at the College, and Dr. Alvin F. Sellers assumed the responsibility for enhancing and helping to integrate College research activities. Dr. Emmett N. Bergman was named Coordinator of Elective Programs, and Dr. N. Bruce Haynes was appointed Director of Continuing Education. All of these individuals assumed the new duties in addition to their regular tasks.

An office devoted to public relations and development was established under the direction of Edward J. Trethaway. Robert K. Radziwon, as assistant to the dean, was given greater responsibilities for central administrative operations. Twice-monthly meetings of the dean and the College Advisory Board, consisting of the associate deans, department chairmen, and the director of the Teaching Hospital, continued to serve as a valuable means of promoting communication among all those responsible for guiding and directing College activities.

Efforts were also made to enlist more actively the expert advice and assistance of those alumni and other friends who serve on the College Advisory Council. Plans are to hold two Council meetings a year on campus and to maintain regular mail and telephone communications with members to discuss matters of planning and policy.

Student Affairs

Although applications for admission to the professional-degree program were down somewhat from the previous year and two more students were accepted for entrance, the ratio was scarcely changed. The seventy-five students selected for admission in the fall of 1976 were selected from 901 applicants — more than twelve for each space. Some of the applicants, of course, failed to complete their applications or withdrew, but about 170 individuals were interviewed by the faculty Admissions Committee.

Many hours of human labor were saved and the possibility of errors diminished by making use of the computer to calculate grade-point averages, Graduate Record Examination scores and averages, and other statistical material relating to the hundreds of applicants. With the aid of the computer, many kinds of lists — rank of the applicants in various categories of qualifications, for example — were produced, saving time and assuring more equitable assessment of competing applicants' qualifications.

The ratio of women to men among those accepted dropped slightly — from 41 percent of the entering class last year to exactly 40 percent this year — but is now about on a level with the percentage of women applicants. The number of applicants from other minority groups is still far below the desired level, resulting in an imbalance in the entering class. Efforts continue to acquaint members of those groups with the profession in order to encourage their interest. Plans are to initiate more programs in that direction in the coming year.

Of those students who make up the entering class for the fall of 1976, fifty-eight are residents of New York State; of the other seventeen, twelve were accepted under contractual agreements with five New England States and New Jersey.

The number of graduate students being attracted to veterinary medicine is gradually but steadily increasing: during the year, a total of fifty-eight individuals pursued advanced degrees under the supervision of faculty members in the College. That represents an 11 percent increase over the year before. Of the fifty-eight, forty were in programs leading to the Ph.D., and eighteen worked toward the M.S. Most of these and more than one hundred others, majoring in related fields, minored in veterinary medical subjects. Several new students also enrolled in the combined-degree programs — eight are now embarked on the concentrated schedules leading to the D.V.M./M.S. or D.V.M./Ph.D. degrees.

In its role as part of the larger institution, Cornell University, the College makes some courses available to undergraduates enrolled in other academic units on campus. These include several offerings by the Department of Physical Biology, an activity that may increase now that the Department is jointly designated as the Section of Physiology of the University Division of Biological Sciences. More than seven hundred students from outside the College took veterinary medical courses during the two semesters of 1975–76. Nearly half of those took the introductory course in animal physiology.

Admission and enrollment summaries appear in tables 6, 7, and 8 on page 30.

Degrees Granted

Of the sixty-five D.V.M. degrees granted by the College of Veterinary Medicine in June 1976, five were with distinction. The Ph.D. degree was awarded to nine students in the graduate Field of Veterinary Medicine during the year, and six received the M.S.

Public Affairs

The Office of Public Affairs at the College was established in order to provide an integrated program of public relations, development, and alumni activities to increase awareness among all interested people of the College's functions, goals, and needs, and to solicit support for its programs. Information about the College is being disseminated through a newsletter to be mailed regularly to alumni, an exhibit presented during Reunion, and an increased number of news items reporting on college achievements sent out by the University Office of Public Information.

A fund-raising campaign is slated to begin in the fall as part of the University's capital campaign. Accomplishments to date include the defining of College needs and support requirements, the formation of a College Development Advisory Committee consisting of twenty-four alumni who will help organize the fund drive, and the preparation of printed materials to promote the effort.

A descriptive brochure, photographs, and a movie are being prepared to present the programs and needs of the Equine Research Park. The movie is being underwritten by members of the newly formed Equine Advisory Council.

Continuing Education

The Continuing Education program of the College is designed to help the two thousand practicing veterinarians in New York and New England maintain and improve their professional competence.

Every two months, *Veterinary Topics,* a newsletter containing pertinent and timely information on a wide range of animal-health topics, is published and mailed. In cooperation with Biomedical Communications (see page 20), autotutorial programs are being produced and purchased to form a library for lending to practitioners. Nine noncredit short courses, workshops, and seminars were given during the year to a total of 834 participants. The largest of these was the Annual Conference, held at the College over a three-day period and covering many subjects. It was attended by 456 practitioners. Others, held in Ithaca, included four short courses (on clinical pathology, feline diseases, radiology, and equine lameness) and two workshops (on small animal surgery and equine reproduction). A seminar on bovine nutrition, cosponsored with the American Association of Bovine Practitioners, and the Eastern International Veterinary Clinic, cosponsored with the state Veterinary Medical Society, were held in Syracuse.

Other ways in which the College contributed to the dissemination of animal-health information are reviewed in the section Public Service (see page 32).

Faculty and Staff

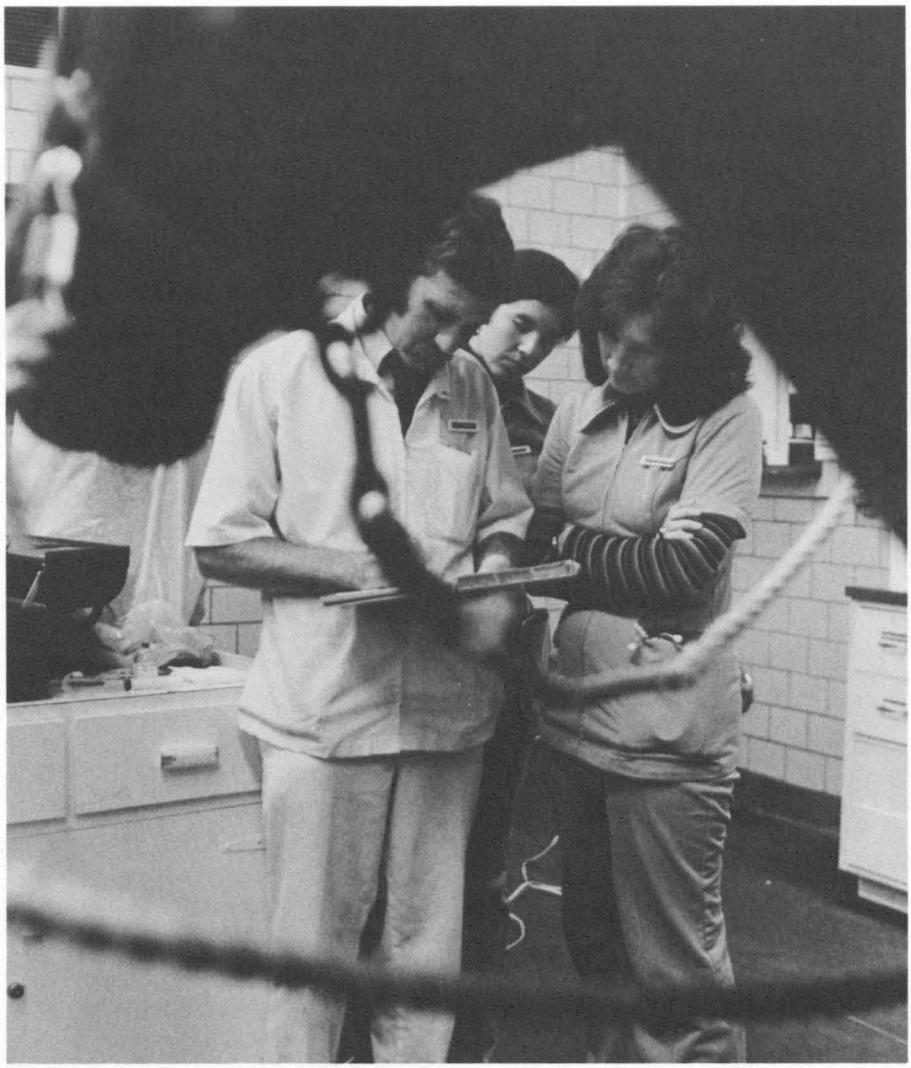
The press of enlarged responsibilities on the faculty has been felt from several directions. Increasing numbers of students may not add significantly to lecture chores but do add measurably and predictably to clinical training where instruction can be carried on with no more than two or three students at one time. On the graduate level, where so much of a student's activity is individually supervised, additional students mean many extra hours for the supervising faculty.

The demands for answers to problems of importance to producers and consumers across the state and nation make it imperative that public service and continuing education activities be maintained or stepped up and, at the same time, make it crucial that research not be allowed to lag.

Much has been done during the year to find ways to ease the burden and prepare for larger numbers of students in the coming years. Visiting professors have been called upon in several instances to assume more vital roles in the instructional program. Additional staff is being recruited; several important positions have recently been filled, and others are to follow soon.

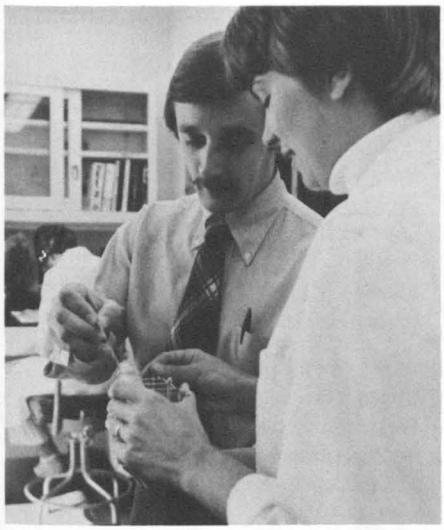
One difficulty arises from a shortage of qualified applicants. The number of highly trained veterinary medical personnel coming out of graduate schools is scarcely adequate to fill the current needs of existing veterinary colleges, let alone provide staffing for the new ones being developed. The budget restrictions, coming at the same time that the pool of candidates is depleted, makes it doubly hard to attract the kind of people that this College wants and needs to supplement the current ranks.

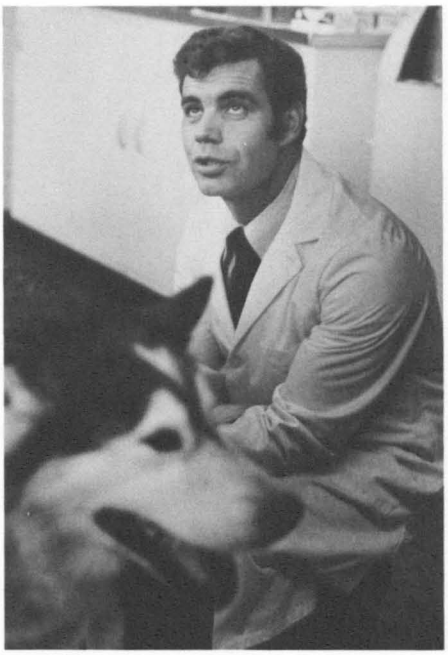
Pride in the achievements of the College faculty is, however, based primarily on the quality of work they are doing. Their contributions are a matter of public record as the long list of consultancies, participation in seminars and symposia at home and abroad, presentations of lectures or special courses elsewhere, service on national and international committees and boards, and their publications indicate.



Further testimony to their achievements was received by various individuals, and included the Gaines Award presented by the Gaines Dog Research Center and the American Veterinary Medical Association to a veterinarian selected by the association for outstanding contributions to small animal medicine and surgery; the Charles Louis Davis Foundation Journal Scholarship Award for an outstanding publication; and an award from the Sino-American Joint Commission on Rural Reconstruction and the Pig Research Institute of Taiwan for services in the field of pathology. One member of the faculty was named Veterinarian of the Year by the New York State Veterinary Medical Society, and a member of the Department of Pathology became a diplomate of the American College of Veterinary Pathologists.

Instructional Programs





The proliferation of areas of specialization within the field of veterinary medicine has had, perhaps, more impact on the instructional process than any other factor. The College administration and faculty subscribe to the philosophy that, whether a graduate goes into practice, enters an allied field, or elects to do graduate work, the D.V.M. training must include a firm foundation in basic scientific knowledge and a thorough grasp of the principles of good medicine. Specialization, either in terms of certain facets of medicine or certain species of animals, is reserved for graduate work after the completion of professional training.

To provide adequate clinical training for professional-degree candidates, however, the staff of a teaching hospital must include specialists — in radiology, in reproductive problems, in dermatology, ophthalmology, and so on. Yesterday's specialties have, in many instances, become today's standard. Modern practitioners are called upon to treat ailments that were not even recognized a few years ago.

In order to make room in the D.V.M. program for more and more material, the core curriculum has been condensed and the courses within the core concentrated. Audiovisual aids to supplement classroom, laboratory, and clinical hours are being acquired; plans are in the works to renovate laboratories so the same space can be used to teach more students more subjects; and courses are being revised to maximize the interrelationships among them while eliminating overlap or redundancy. More electives are being offered for the time thus freed, and students are encouraged to carry out special projects within the department and to participate in various noncredit learning activities.

The expansion of the program beyond the basic curriculum not only allows students to enrich their training along lines of particular interest to them, but it also helps attract outstanding faculty members who have developed specialties and want to pursue them. Residents, interns, and graduate students are also attracted by the opportunity to pursue special interests.

Clearly, there are too many species and too many areas of specialization for any one college to develop strengths in all of them. In selecting areas to be emphasized at the New York State College of Veterinary Medicine, several factors are considered: current strengths, available personnel, the potential to provide enrichment opportunities through working with other institutions in the region, and the needs of the animal and human population.

Becoming known for certain special capabilities also has a valuable impact on the kind and number of cases that are referred to the Teaching Hospital; without the animals to be treated, no amount of staff expertise can be effective.

The quality and efficiency of the clinical instructional program already has increased as a result of the reorganization of the Teaching Hospital (see page 17) and the provision of blocks of time in the fourth year for elective clinical work. Further upgrading of clinical activities, both in terms of instruction and public service, through expanding the faculty and enlarging and modernizing the facilities is a high priority item.

Possibilities for students to do elective blocks of clinical work outside the College — at zoos, race tracks, and other institutions — are being explored as well. Last year, three senior residents at the College spent three months at outside institutions to broaden their experience. Six graduate students are now participating in the collaborative program between the Department of Microbiology and the Plum Island Animal Disease Center.

Plans have been laid to offer professional-degree candidates special work in aquatic animal medicine at Woods Hole, Massachusetts, in the spring of 1977.

Facilities and Services

Fifteen students from Cornell and Pennsylvania will participate. Five institutions — the two veterinary colleges, the Woods Hole Oceanographic Institution, the Marine Biological Laboratory, and the National Marine Fisheries Service — will cooperate in offering the four-week course.

Two name changes within the College during the year serve to express the broadened roles of some of the traditional disciplines. The Department of Avian Diseases was renamed the Department of Avian and Aquatic Animal Medicine to reflect the expanded interests and activities of College faculty and students in marine animals and the needs of the related food industries. The College's Department of Physical Biology has assumed additional responsibilities as the newly formed Section of Physiology within the Cornell Division of Biological Sciences. Six members of the Department became joint appointees in the new Section.

Many of the changes in courses, curriculum, and procedures are essential responses to the growth of the science of veterinary medicine — the lengthening list of species being attended, the growing number of interfaces with other disciplines, and the expansion of knowledge within the traditional areas of concern. But, such innovations constitute positive steps toward several goals. In addition to enriching opportunities for faculty and students at the College, they serve to broaden the horizons of public service, provide a valuable means of exchanging information among related agencies and institutions, and make maximum use of resources to better serve the interests of all the people of the region.

Library

The demands for library services continue to accelerate, a reflection on the broadening scope of the disciplines, the increased numbers of students, and the proliferation of written resource material in all the biomedical sciences. The past decade has been one of unprecedented growth in use of the materials at the Flower Veterinary Library and from other cooperating libraries at Cornell and elsewhere. During that time, the use of reserve books has increased by 60 percent, and a similar percentage of increase was recorded in photocopy items that were made in lieu of loans. At the same time there was also an increase, by 20 percent, in books actually lent for home use. The number of photocopy items made for non-Cornell libraries and those obtained from other libraries increased by 50 percent during the past decade.

The ability to provide these expanded services in spite of severe space and budgetary pressures is becoming increasingly precarious. Efficiency has already been cut because of the lack of space. With the maximum capacity of 60,000 volumes already exceeded by nearly 1,300, in addition to unbound periodicals and nonaccessioned titles that must be shelved, mounting quantities of materials must be relegated to storage locations where they are relatively inaccessible. Some 3,000 volumes are now in such storage, and more will have to be removed from shelves in the upcoming months. The number of periodicals and annuals has been cut back by 12 percent in an effort to provide some relief to both space and budget stresses.

The significance of the library as an instructional resource can hardly be overemphasized. Not only does it provide much of the core material for course work in the professional program, but the quality

Table 1
Library Use, 1975–76

On campus		33,106
Reserve books (in-library use)	11,416	
Lent books (home use)	15,322	
Photocopy items (in lieu of loans)	6,368	
Interlibrary exchanges		992
Books lent	86	
Photocopy items sent	629	
Books borrowed (from outside Cornell)	24	
Photocopy items (from outside Cornell)	253	

Table 2
Library Holdings, 1975–76

Books		59,281
At beginning of year	57,941	
Acquisitions	1,750	
Less withdrawals	410	
Periodicals and annuals		1,090

Table 3
Clinical and Diagnostic Accessions, 1975

	Horses	Cattle	Dogs	Cats	Sheep & Goats	Swine	Poultry	Others	Total
Medical and Surgical	1,597	624	7,402	2,941	97	63		196	12,920
Large Animal Outpatient	2,516	31,686			284	804			35,290
Clinical Pathology Laboratory	11,764	17,735	23,335	3,033				1,428	57,295
Parasitology Laboratory	43	67	83	27	39	24		126	409
Diagnostic Laboratory	39,909	10,514	5,759	585	172	168	14	471	57,592
Radiology Section	833	83	1,744	222				59	2,941
Necropsy Service	265	929	722	343	121	208		249	2,837
Mastitis Control Program		179,226							179,226
Poultry Disease Laboratories							11,990		11,990
Laboratory Animal Diagnostic Laboratory				46				247	293
Aquatic Animal Diagnostic Laboratory								264	264
Totals	**56,927**	**240,864**	**39,045**	**7,197**	**713**	**1,267**	**12,004**	**3,040**	**361,057**

of the library has a profound influence on attracting and keeping outstanding faculty and graduate students. Additional space for housing materials and providing library services is absolutely essential if the level of excellence that has made the Flower Veterinary Library the top resource in the field outside of the National Library of Agriculture is to be maintained.

Teaching Hospital

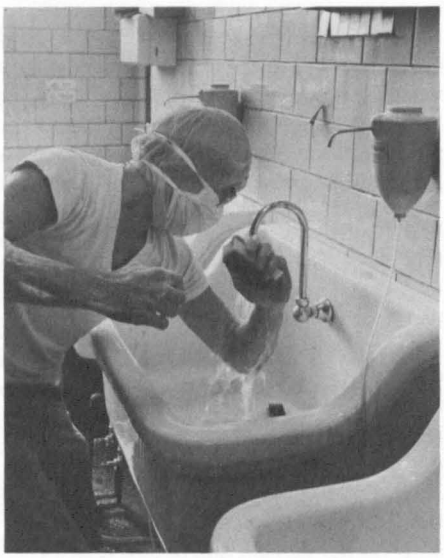
The reorganization of clinical activities at the College, begun last year, has essentially been completed. Effective July 1, 1975, the Veterinary Medical Teaching Hospital was established as a unit of the College to be administered separately from the academic departments. Particularly close ties exist, of course, between the hospital and the academic departments involved in small and large animal medicine and surgery, but activities in all departments relate in one way or another to the hospital program, and faculty members from all of them contribute to its success.

Communication and cooperation among the participants is facilitated through regular meetings of the hospital board: it is made up of the director of the hospital, the directors of each of the three hospital clinics (ambulatory, large animal, and small animal), and the dean.

One of the most salient features of the change is the organization of hospital activity into six sections — Medicine, Surgery, Radiological and Physical Diagnostics, Theriogenology, Clinical Pathology, and Pathology — reflecting an emphasis on the areas of health service rather than on species. Plans are to add a seventh section — Anesthesiology — when staff is available. Each Section is headed by a faculty member who serves as chief. The Medicine Section is, in turn, organized into the following services: medical, large animal; medical, small animal (2); ophthalmology; and dermatology. The Surgery Section comprises two services: large animal and small animal.

Although staffing is not complete at this time, each Section (and each service of the Medicine and Surgery Sections) is to be under the supervision of at least one faculty member who works with a support team consisting of at least one resident, one intern, and two or three fourth-year students. Fourth-year students spend blocks of time in each of the services and sections in all three clinics in order to gain experience in various areas of health care, with various species, and in different settings (in-hospital and outpatient).

The New York State College of Veterinary Medicine remains firmly dedicated to the concept that practitioners of veterinary



medicine are members of a single field and that each student's professional training must be broadly based and thoroughly integrated. The strengthening of this concept is one of the many benefits to be derived from the current hospital organization.

The potential to develop strong programs in specialty areas is another major gain to be realized from the new organization. To develop a specialty service in ophthalmology, for example, requires a minimum of two clinicians in that area (plus the residents and interns needed for support) in order to provide coverage for patients and the opportunity for professional interchange, so vital to the growth of skill and acumen. To develop such a specialty service for large animals and another for small animals would necessitate doubling the number throughout. Such duplication would rarely be possible and unlikely to be justified in terms of time and money invested. Under the current plan, those clinicians who have particular expertise in one area, such as ophthalmology, participate in handling relevant cases in both the small and large animal clinics and, when warranted, may also go out on calls for the ambulatory clinic. This allows staff members with particular interests to pursue them when the patient load might otherwise not be sufficient, and further encourages the students to view veterinary medicine as a single science. Still another gain is the overall upgrading of patient care that results.

Additional efficiency and improvements in patient care are achieved through the sharing among the three clinics of specialized equipment such as that needed for radiology and clinical pathology. The centralization of various support services such as the pharmacy, computerized medical records, telephone coverage, purchasing, and so on, also promotes efficiency and maximum use of resources.

Diagnostic Laboratory

Space and personnel restrictions continued to plague the staff of the Diagnostic Laboratory although that situation is expected to change considerably by the time the fall session begins. An easing of space problems is imminent as the new building nears completion, and the appointment of a director is expected by the fall of 1976. Additional staff to meet needs will be appointed as funds and available qualified applicants permit.

In addition to performing tests on the vast number of samples (more than 57,000) sent in from all over the state and elsewhere, the staff presented a portion of the ancillary pathology course to senior professional-degree students and served as guest lecturers for courses offered by the Department of Microbiology. More than one hundred trips to various parts of New York State were made during the year for diagnostic, epidemiological, and extension purposes as well.

Laboratory Animals

Support for teaching programs and research requiring laboratory animals throughout all the academic units of Cornell University and other institutions in the SUNY system is a key feature of the contributions made by the Division of Laboratory Animal Medicine and Services of the College of Veterinary Medicine. The professional staff of the Division provides diagnostic and consultation services where needed to deal with laboratory animal problems, and assumes responsibility for the proper housing and care of the many thousands of laboratory animals kept in the central facility of the Veterinary Research Tower.

Maintaining the strict standards required by the many federal and state agencies that regulate the use and care of such animals is an exacting occupation but is only one aspect of the Division's goals. The staff is equally dedicated to upgrading the quality of animals for which they are responsible. To this end, a good deal of specialized equipment was purchased during the year, much of it with money provided by a National Institutes of Health grant. The largest expenditure, about $130,000, was for the purchase and installation of a steam-gas combination bulk sterilizer to handle large cages including the isolation units used primarily for studies of infectious diseases.

Other items added include several cabinets to hold racks of mouse or rat cages and serve as barriers, fifty-five Horsfall isolation cages (for rodents, cats, and small dogs), and six special cages for medium-sized primates (now housing Rhesus monkeys). Repairs and alterations to the ventilation system, the floors, and the watering devices in the dog clinical conditioning facility have improved conditions for the animals and the caretakers there.

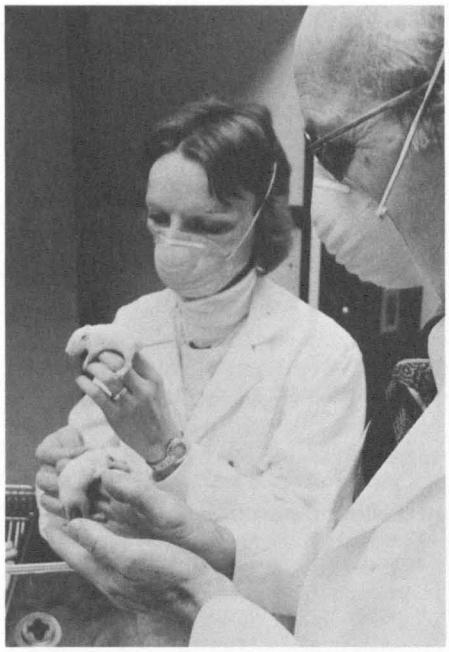
Unfortunately, even though it is relatively new, certain deficiencies in the central animal-care unit in the Research Tower have come to light. These are primarily related to air-flow patterns that affect isolation/contamination conditions and to the control of temperature. Steps are being taken to develop the means for correcting these problems in order to maintain the appropriate standards.

The reproduction level of the specific-pathogen-free cat colony has been improved, partly as a result of dietary changes and partly because some of the close inbreeding procedures required for certain kinds of research are no longer necessary. Cats and kittens from this colony are being supplied not only for leukemia research but for many of the studies done by the Feline Research Laboratory.

Table 4 lists the various species and numbers of each that were housed and cared for by the Division during the year.

Table 4
Laboratory Animals Housed and Cared for During 1975–76 by the Division of Laboratory Animal Medicine and Services

Calves	3
Cats	181
Chicks	3,900
Dogs	348
Frogs	780
Goats	4
Guinea pigs	83
Hamsters	6
Mice	1,539
Primates	12
Rabbits	265
Rats	827
Salamanders	220
Salmon (Atlantic)	110
Sheep	20
Turtles	24
Total	**8,322**



Computers

Some expansion in services provided by the computing facility of the College has been effected even though space and budget restrictions have prevented an increase in staff. The emphasis currently is on further developments in the hospital information system. Three new terminals were added during the year in the Clinical Pathology Section of the Teaching Hospital.

The newest addition to the facility is a graphics work station in the central computer room. Based on a GT-40 minicomputer, the station makes it possible to store and retrieve information in the form of graphs, charts, and other pictorial images. Various uses of the new equipment are being explored. Using information fed into it, this station could, for example, produce a map of New York State with numbers or symbols representing animal disease cases arranged according to their geographical incidence. Such a graphical display could be of considerable help in determining the epidemiology of various illnesses.

The new equipment is also expected to make data collected on clinic patients more accessible and more readily usable by analyzing and condensing vast amounts of material into chart or graph form. With dozens of items of information on each of some 15,000 clinic visits annually being stored in the computer, the retrieval of "packages" of sorted information becomes increasingly pertinent both for research and also to observe patterns and trends for administrative purposes. Material in graphic form such as polygraph recordings and electron micrographs, can be fed into the computer by means of a digitizer for analysis or storage in the data bank.

Biomedical Communications

The staff of Biomedical Communications plays a significant role in the instructional programs of the College. Visual and audio materials to enhance and supplement lecture and laboratory presentations by the faculty are prepared, as are other teaching and autotutorial aids for students and for practitioners in the field. Color videotape recording equipment for producing motion sequences of clinical procedures has been acquired, and nearly a dozen cassettes, averaging about twenty minutes in length, were made during the year. These allow students to see and study procedures in this form as a preliminary and follow-up to observations in actual clinic situations. A motion-picture-to-videotape service is also provided.

Some combination slide-audiotape packages have also been produced by the staff; others were purchased. The total holdings of the autotutorial library now number forty-one videotapes and twenty-eight slide-tape programs. Five carrels have been provided for students to use these aids.

A full production of slides, prints, and illustrations to support research as well as teaching has also been maintained by the six-person staff, and they provide consulting services to all departments on visual and audio needs, so that each item produced is planned to fill a specific and predetermined niche in the total program. Plans are to expand the elective course in microscopy, offered by the staff for the first time last year, in response to expressed interest.

Production for the year is summarized in Table 5.

Table 5
Biomedical Communications Production
1975–76

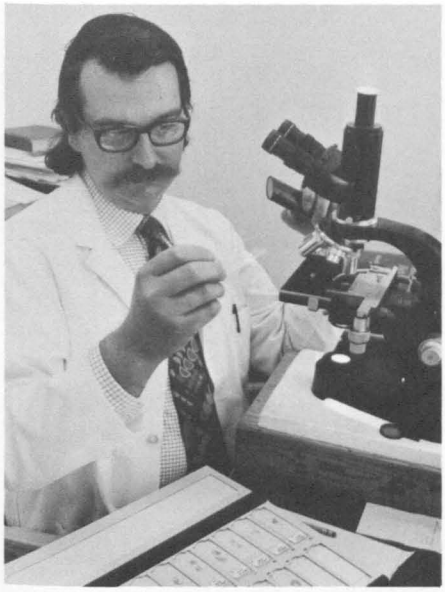
Slides	20,000
Photomicrographs	2,000
X rays, reproduced	3,000
Videotapes	11

Biomedical Electronics

Biomedical Electronics, a service developed from the shop in the Department of Physical Biology, has proved enormously effective in its first year of operation. Besides repairing all kinds of electronic instruments and laboratory apparatus, from intercoms to autoanalyzers, the staff also services radio and video communications equipment, computer terminals, microscopes, and numerous other items that are necessary to the smooth functioning of clinical, teaching, and research activities throughout the College.

In addition, the technicians have designed and fabricated original apparatus to serve special needs — these include a portable ECG recording system, an automatic fish feeder, a variety of probes, and cooling systems for electrophoresis systems. Assistance is also provided to department personnel in planning their technological needs, often resulting in considerable savings. Other significant economies have been effected by finding new uses for idle equipment and by the steady reduction in expensive outside service calls and contracts.

Special Programs



Aquatic Animals

The Aquatic Animal Program of the College is a collaborative effort involving faculty members from the Departments of Pathology, Microbiology, and Avian and Aquatic Animal Medicine of the College who also work closely with the Cornell Aquaculture Committee, the dean of the College of Agriculture and Life Sciences, and faculty members of that College's Department of Natural Resources. Outside support for the Program is also diverse, the major source being the New York State Sea Grant with additional funds provided by the United States Department of Commerce and Department of the Interior.

The Program has been enlarged during the year but special emphasis continues to be placed on the most important fisheries industry of New York State — the harvesting of Long Island shellfish. Research undertaken by the Program's staff reflects the needs of the industry for veterinarian service both in terms of the animals' health and human health considerations.

Plans are under way to provide an experimental area on the campus for aquatic animal research; however, it will supplement rather than replace the ocean conditions that are necessary for much of the work. Monthly trips are made to Long Island to consult with and advise industry personnel, and it is hoped that field facilities may be developed there to expedite research and service.

Diagnostic service is provided on campus for specimens that come in from all over the state and the nation. About four thousand of the nearly five thousand specimens received and examined last year were commercial mollusks such as clams and oysters.

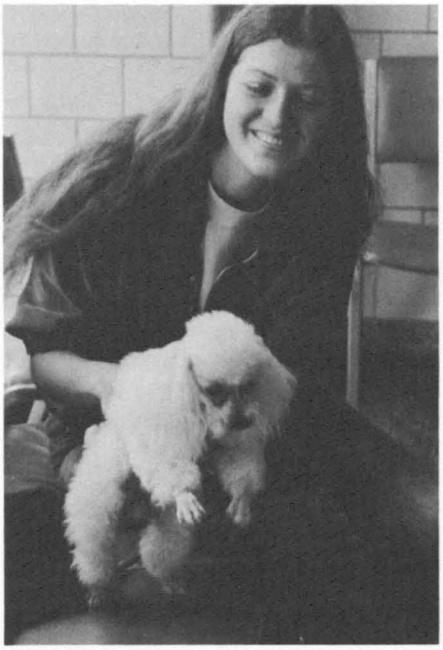
Supervision of graduate students figures importantly in activities of the Program staff — the major interests of four candidates for advanced degrees and a secondary interest of another are in matters relating to aquatic animals. An undergraduate elective course, Diseases of Aquatic Animals, offered for the first time last year, was taken by students from other academic units as well as by professional-degree candidates in the College of Veterinary Medicine.

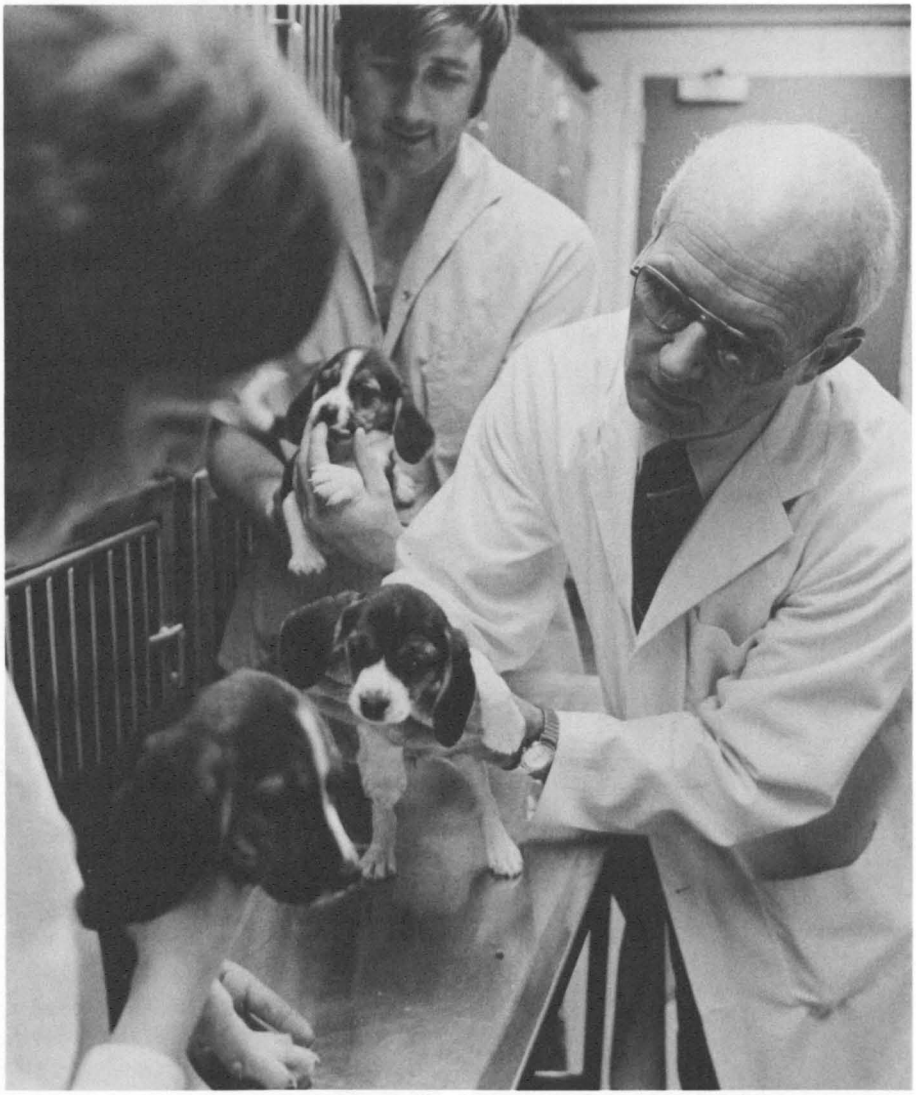
Avian Programs

The completion in February of the new facility at the Duck Disease Research Laboratory in Eastport, New York, for producing biologics that can meet the licensure requirements for interstate shipping was a major development of the year. The production and testing of initial serials to be further tested by the United States Department of Agriculture for licensing purposes was nearly complete for three products by the end of June.

More than 3 million doses of biologics including live-virus vaccines, antibody preparations, and bacterins, were dispensed again last year from the Eastport Laboratory. Faculty members are increasingly concerned, however, about the emergence of salmonellosis as a duck disease of serious proportions and the recognition that avian influenza is associated with sinusitis in ducks.

Starting in September, live attenuated *Mycoplasma gallisepticum* was made available to New York State poultrymen, and some 180,000 doses were distributed. Grants were received to allow studies of Marek's disease of chickens to continue.





The growing popularity of pet birds and increased interest in wild birds makes this an area about which veterinarians need increased knowledge and expertise. This situation has prompted the decision to develop a new specialty program at the College to conduct research and provide training relating to birds other than domestic poultry. During the coming year, progress toward realizing these plans is expected.

Baker Institute

The former Veterinary Virus Research Institute was renamed in September the James A. Baker Institute of Animal Health to commemorate the man who was its founder, and was director for twenty-five years, and to acknowledge his many contributions to the prevention and cure of animal disease. The renaming coincided with the twenty-fifth anniversary celebration and was an occasion for reviewing the Institute's past accomplishments and reaffirming its goals. The Commemorative Address was given by Dr. Alan O. Betts, principal of the Royal Veterinary College in London, who was a long-time colleague and friend of Dr. Baker.

Dr. Betts is also one of a distinguished list of persons who have been associated with the Institute as visiting investigators or graduate students through the years. Six members of the current faculty of the College of Veterinary Medicine are among that group. Others on the list now hold positions in ten states and as many foreign countries including New Zealand, Argentina, Egypt, Turkey, West Africa, Switzerland, and others.

The annual report of the Institute, published in December 1975, contained a summary of research highlights during the past twenty-five years in canine, bovine, and swine diseases. Research continues at the Institute on a broad range of canine diseases

such as distemper and respiratory ailments, hip dysplasia, brucellosis, and herpesvirus as well as gastrointestinal functions and dietary needs. Current bovine research is focused on infectious bovine rhinotracheitis and leukemia.

Private donations to help support the Institute's programs was received from a diverse group of veterinarians, (nearly six hundred), other individuals (more than two hundred), and one hundred foundations, trusts, companies, clubs, and associations. An additional ninety-seven persons are Research Partners by virtue of making contributions in excess of $250 a year each. Some forty of the organizations that contributed made donations of more than $100, some exceeding $1,000.

Bovine Research

Steps were taken to coordinate and strengthen the various current activities of College faculty in bovine disease research.

Long a leader in matters relating to bovine health, the College, with its extensive resources and situation in the midst of a major dairy and beef-producing area, is a particularly suitable site for work on bovine ailments. Plans are to bring all the related programs now in effect into a coordinated entity and also develop new projects where needed to maximize the effort.

To this end, faculty members whose interests are in bovine research are now organized into six groups, each concerned with one kind of bovine ailments: reproductive, metabolic, digestive, respiratory, neoplastic, and mastitis. By the end of the upcoming year, it is hoped that a broad organizational plan will have been developed that will make it possible to gain additional support and further these efforts to reduce the significant economic losses and food waste resulting from bovine illnesses.

Clinical Nutrition

Instruction in veterinary clinical nutrition is presented to all professional-degree candidates during their third year by the Mark L. Morris Professor of Clinical Nutrition. He also serves as director of the Clinical Nutrition Program. In that capacity, he directs the work of the two graduate students currently studying in the field and also provides consultation service to the several clinics of the Teaching Hospital on matters of nutritional significance.

Papers were delivered at four seminars at Cornell and other institutions in the United States, on research conducted by the staff of the Program. Additional public service is performed through advice and assistance given on specific nutritional problems referred by practitioners; during 1975–76, some fifty such referrals were handled.

Comparative Gastroenterology

A series of lecture and laboratory courses on the structure, function, and diseases of the digestive system in a wide range of species was presented by the staff of the multidisciplinary postdoctoral training program in comparative gastroenterology. Trainees work under a faculty including members of clinical as well as basic-science departments of the College of Veterinary Medicine and faculty members from other units of the University.

In addition to completing the course work of the program, each trainee must carry out a research project on some facet of comparative gastroenterology and submit a paper based on it for publication. During the past year, five trainees have completed the course work — one of them has fulfilled all the requirements. Twelve papers by the trainees were published during that period.

Comparative Medicine

The Program in Comparative Medicine — a collaborative effort involving the College of Veterinary Medicine and the Cornell University Medical College — has, for several years, held fall and spring seminars. They are hosted alternately by the Departments of Microbiology at the two colleges. In the spring of 1976, an additional meeting of the executive faculty was held at the Medical College in order to further collaborative studies on diseases of common interest, such as atherosclerosis and polyradiculoneuritis. Other possible areas for cooperative work have been explored and include endocrinological problems, surgical procedures, tissue neogenesis, and immune complex diseases. The possibility of graduate-student interaction between the two colleges and the presentation of special combined course offerings was also discussed.

Service on national committees and in consulting capacities to foreign as well as domestic agencies have also been functions of the Program at the College of Veterinary Medicine.

Equine Programs

Surfacing of the one-half-mile track was completed during the year at the Equine Research Park, an installation shared by four programs involving equine investigations. Facilities to house horses and ponies at the Park did not, however, expand rapidly enough to accommodate additional animals acquired, particularly for use in equine reproductive teaching and research; some of those are being kept on the main campus awaiting funds to continue expansion at the Park.

Work by the Laboratory for Equine Infectious Diseases was focused primarily

on equine infectious anemia and equine respiratory viruses. The objective of using one or more of the various proteins constituting the equine infectious anemia virus as a vaccine or treatment for the diseases was the motivation for splitting the virus and characterizing its components. Preliminary trials at a race track with an influenza vaccine suggest that the disease could be prevented through immunological procedures.

Work was also done to elucidate the process of developing immunity against equine herpesvirus (type 1), and serological studies with equine rhinovirus revealed that it is a widespread infection in young horses. Studies of the use by horses of dietary fat were initiated by members of the Equine Research Program.

During the year, the Equine Drug Testing and Research Program doubled the quantity of work done at the race tracks of the state. The total — some 134,000 samples — handled at the various field laboratories included 82,000 prerace blood samples, tested at the seven harness raceways, and another 52,000 postrace blood and urine samples tested at those raceways and at four thoroughbred tracks, the quarterhorse track, the American Horse Show Association, and horse and pony pulls throughout New York State. In addition to serving the racing industry on an at-cost basis, the testing program supports a broad range of research in equine pharmacology through providing valuable resource material and stimulating contributions by the industry.

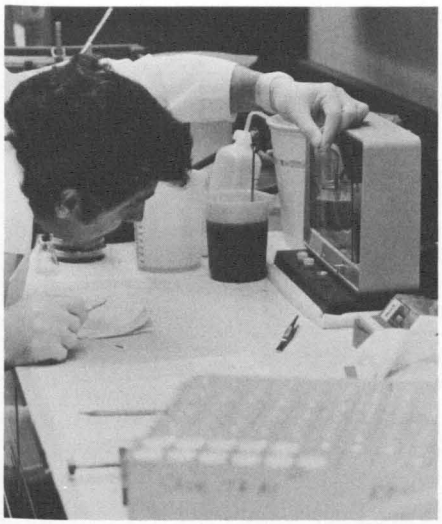
A report on work relating to equine reproduction is included in Theriogenology on page 25.

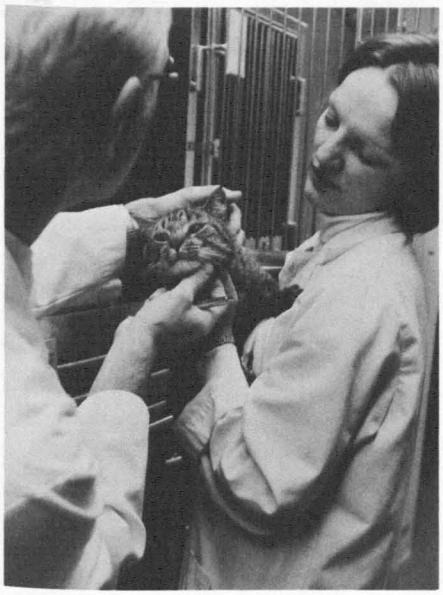
Feline Laboratory

Interest in the activities of the Cornell Feline Research Laboratory appears to be growing in all quarters — among practicing veterinarians, cat owners and breeders, and various cat organizations and groups throughout the United States. That interest is expressed frequently through grants and donations to the Laboratory.

Efforts to communicate with interested people in order to tell the story of the Laboratory and its work and in order to keep veterinarians, owners, and breeders informed of research activities and results were expanded. The *Feline Information Bulletin,* containing reports on current research, was one vehicle. The first issue was sent out in April, another is scheduled for the fall, and it is hoped that soon they may be published on a regular basis three or four times a year. The second annual report on the Laboratory was also prepared and distributed in the fall of 1975.

In June, the Laboratory sponsored a one-day symposium on feline health. Eight members of the College faculty participated; presentations covered such subjects as feline





nutrition, skin diseases, urolithiasis, reproductive diseases, leukemia virus infections, and respiratory diseases. Those attending were given a tour of facilities at the conclusion of the program. Proceedings of the symposium were made available for purchase by practitioners, cat clubs, and other interested persons.

During the year, studies were completed on the classification of fourteen strains of caliciviruses and evaluations of vaccines against feline viral rhinotracheitis and feline calicivirus. Investigations continued into three neurological diseases of cats, the interrelationships between intestinal bacterial and panleukopenia virus, and the various manifestations of feline leukemia virus infection.

Two aspects of the cause of urinary obstruction (urolithiasis) — viruses and diets high in phosphorus and magnesium — are under study. A new program to study feline reproductive physiology and reproductive diseases has been started.

Case histories on all cat patients seen in the Teaching Hospital at the College, numbering around 3,500 last year, were stored in the data computer bank to provide resource material for research in feline diseases.

Mastitis Control

Fears that the field laboratories of the Mastitis Control Program might be closed as a result of budget cuts to the College caused concern throughout the state to dairymen, practitioners, and others who were aware of the importance to the state of the dairy industry and the threat posed to producers and consumers alike from mastitis. Fortunately, funds to supplement the income from the Program itself were supplied by the Department of Agriculture and Markets to keep the Program operative. In addition, plans are under way to reestablish a field laboratory in Springville to replace one that was closed in 1971 as a result of budget cuts at that time. The new laboratory should be opened by fall and will fill an important gap by providing service to the nearly one-quarter of the state's dairy cattle that are in western New York.

Complete revisions were made in the reporting system for laboratory results, in order to make maximum use of the new computer facilities made available to the Program last year. The four categories of causative agents have been expanded to nineteen so that much more specific data on cases can be stored and analyzed by the computer in relation to the other information on antibiotic sensitivity tests and detailed reports concerning management practices. The material being stored on the computer and the many kinds of data analyses that are possible provide valuable material for Program staff members and others who are involved in research on mastitis and who direct the activities of the Program.

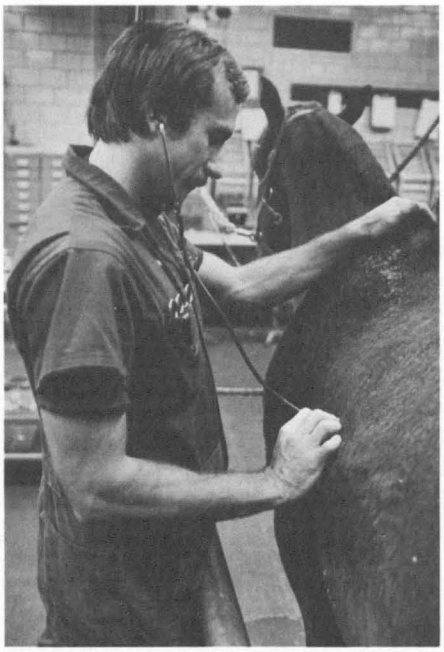
Several issues of *Mastitis Quarterly,* a publication prepared by the staff of the Mastitis Control Program that contains up-to-date information and suggestions for dealing with mastitis at the dairy level, were sent out to more than 350 large animal practitioners and extension agents.

Theriogenology

The Theriogenology Section serves to integrate and coordinate all College activities relating to reproduction and obstetrics — clinical, teaching, and research — for all species. Major efforts, however, are directed to the problems of cattle and horses, a reflection of the importance of both the dairy and racing industry to the economy of the state and the resulting need for practitioners to deal with their patients' theriogenological problems.

In addition to presenting the required and elective courses in obstetrics and reproduction for veterinary students, members of the staff participated in animal science courses for students in the College of Agriculture and Life Sciences and gave several noncredit lectures and laboratories to veterinary students.

Physical Plant



The band of broodmares, stallions, and their offspring that constitute the prime teaching and research resource for equine reproductive studies was doubled in number during the year. There are now thirty mares, two thoroughbred stallions, and one standardbred stallion; ten of the thoroughbred broodmares and one stallion were the gift of an interested horseman. Nineteen of the mares foaled in the spring. All of the animals figure importantly in the instructional program, providing opportunities for professional-degree candidates to gain experience in breeding, care of the stallion, pregnancy diagnosis, management of foaling, and the diagnosis and treatment of breeding disorders.

Research during the year, using the same group of animals, dealt with such topics as induced foaling, the correlation of uterine bacteriological cultures and uterine biopsies (to improve diagnosis and treatment of infected mares), the use of placental data in diagnosing gestation disorders, the analysis of semen (to aid in diagnosis and possible treatment of reproductive dysfunction in stallions), the effect of rectal examinations on conception, the role of maternal diets on the development of the foals, and the composition of mares' milk and its role in the foals' resistance to disease. Other studies on equine reproductive physiology and endocrinology are being conducted in cooperation with members of the Department of Animal Science in the New York State College of Agriculture and Life Sciences.

Bovine research during the year dealt with some twenty topics including testicular degeneration, detection of estrus, use of hormones to induce early cycling and breeding, vaccination as a cure for vibriosis, the evaluation of procedures for treating seminal vesiculitis, the use of an ultrasonic device to detect pregnancy (in other animals as well as cows), pathologic assessments of bulls no longer used for artificial insemination, and the role of genetic makeup in reproductive performance, among others. Some of the projects involve sheep, swine, and horses as well as cattle. Some investigations into the effects of hormones on bitches and on the reproductive organs of male mice were also conducted.

Visitors to the campus of the College of Veterinary Medicine during the past year, would not be struck by any dramatic alteration in the visual environment, in spite of the fact that a sizable new building was nearing completion. The new structure — to house the Diagnostic Laboratory — has been tucked into the main courtyard of the Schurman complex with such deftness and with so little disturbance of the nearby structures and landscaping that it appears almost to have grown there naturally. Great care was exercised to preserve the ecology of the site, including the moving of notable plant specimens to prevent their being damaged by the processes of construction.

Scheduled for completion in June, the building itself was essentially finished at that time, but equipment was delayed as a result of budget alterations. Staff is expected to move into the structure during the fall, and, by spring (1977), the building and its occupants should be ready for a formal dedication.

Some additional space, released by the impending move of Diagnostic Laboratory staff to its new quarters, has made it possible to renovate Department of Pathology quarters on the second floor of Schurman Hall. The increase in the number of students at the professional-degree level and the expansion of the graduate program in veterinary and comparative pathology coupled with a greater demand for necropsy service from practitioners and their clients, made redistribution and reorganization of the available space a necessity. The changes, involving 2,200 gross square feet, resulted in centralization of the department administration, improved office space for faculty and graduate students, the creation of a conference area, and an enlarged histology laboratory. Total cost of the

project was $53,471 and has yielded noticeable benefits in terms of increased efficiency and improved communication among students and faculty.

Another renovation was required in the cage-washing room of the animal-care section of the Research Tower in order to accommodate a walk-in gas-steam autoclave. Funded by a grant from the federal government that project — including the cost of the equipment and the necessary remodeling of space — was accomplished at a cost of $130,000.

The most crucial need at the moment is for updated clinical facilities to meet the accreditation requirements and to make it possible to train the additional students coming into the professional-degree program. Some funds have been allocated by the state legislature to begin planning ways to meet these needs; more funds will be required to see the plans through.

The group of structures, often referred to as the Schurman complex that makes up the main body of the College of Veterinary Medicine, consists of some nineteen low-level buildings, interconnected by common walls, breezeways, and courtyards. A few years ago, the Research Tower was placed to the side of this group, and this year, the new Diagnostic Laboratory building was constructed. The original complex, however, was completed in 1957, nearly twenty years ago — a fact that comes as somewhat of a shock to the Cornellians who tend still to think of it as "new." The soundness of the original structures and the high level of care they have received only adds to the overall impression of relative newness. To those most intimately concerned with the structures, however — faculty, students, and maintenance personnel — their shortcomings are all too apparent at times.

Through the years, altered curricula, improved teaching methods, upgraded standards for the health and safety of human and animal occupants, and increases in the number of students conspire to outmode existing structures unless alterations and maintenance are carefully thought out, planned for, and scheduled. Keeping abreast of needed repairs is not only sensible but an absolute prerogative of good economy — clearly it is less costly to replace a faulty roof *before* additional structural damage from leaks occurs than to wait and have to do both.

The high cost of construction and the precarious condition of the New York State budget makes it doubly imperative that the soundness and usability of all existing buildings be preserved. The thrust of planning for the physical plant during the next few years will, therefore, be a concerted effort to maximize the space and facilities that are at hand.

Records

Admissions and Enrollment

New and Revised Courses

Faculty and Staff Changes

Public Service

Funded Research

Publications

Financial Statements

Administrators and Advisers

Statistical Supplements

Admissions and Enrollment

The community of students who pursue their studies entirely or in part on the campus of the New York State College of Veterinary Medicine is large in terms of numbers, but perhaps more significant is the range of levels at which they are working. Hundreds of undergraduates from the College of Agriculture and Life Sciences, the College of Arts and Sciences, and others, mingle with students in the professional-degree program, who in turn, work closely with graduate students as well as with interns and residents. Yet, each group maintains to some extent an identity, based largely on the varying kinds of goals they are working toward.

The following tables provide summaries of a few of the features of the total.

Table 6
Enrollment Summary, 1975–76

Candidates for the D.V.M. degree	273
Class of 1976	65
Class of 1977	65
Class of 1978	71
Class of 1979	72
(Accepted for Class of 1980: 75)	
Candidates for graduate degrees (majoring in veterinary medical subjects)	66
Ph.D. program	40
M.S. program	18
Combined-degree programs	8
Cornell undergraduates taking courses in the College (full-time equivalency)	76

New and Revised Courses

Brief descriptions appear below of the new courses given by faculty members of the College of Veterinary Medicine in 1975–76 and of another that underwent extensive revisions.

Anatomy and Physiology of the Mouth

This elective course, given by a visiting professor of oral medicine in the College of Veterinary Medicine's Department of Anatomy, was offered by the Cornell Division of Biological Sciences. It was taken by twenty-nine students, both undergraduate and graduate, from several colleges and schools of the University, including the College of Veterinary Medicine. Faculty members from various academic units also attended. The subject matter covered included jaws, teeth, mastication, swallowing, salivation, speech, facial expression, and taste. Class members were given a reading list of some forty articles, and each student selected an area of interest. Each meeting of the class began with a presentation — the first few by faculty members and the later ones by students — and was then opened up to discussion. Enthusiasm was high, with participation in the course encouraging one graduate student in anatomy to initiate research on the dog's tongue.

Graduate Seminar in Diseases of Aquatic Animals

The increase in graduate-student interest in diseases of aquatic animals prompted the establishment of a seminar in which cases from the fish diagnostic laboratory are presented and reviewed along with evaluations of the individual students' projects.

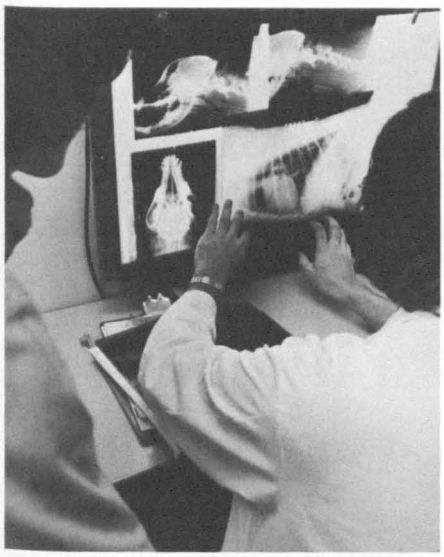
Table 7
Geographical Distribution, According to Legal Residence, of Applicants Accepted for the Class of 1980

New York	58
Colorado	1
Connecticut	1
Maine	1
Massachusetts	3
New Jersey	4
Ohio	2
Pennsylvania	1
Rhode Island	1
Tennessee	1
Vermont	2

Table 8
Summary of Preparatory Work of Applicants Accepted for Entering Class, 1976

	Number	Percentage
Amount of preveterinary college preparation		
Four years	67	89
Three years	8	11
Institution previously attended		
Cornell University	30	40
Other	45	60
Kind of preparatory animal practice		
Large animal	18	24
Small animal	14	19
Both	43	57

Faculty and Staff Changes



Molecular Mechanisms of Hormone Action

Current literature on endocrine mechanisms forms the basis of a new course in the molecular mechanisms of hormone action. Presented by the Department of Physical Biology, it is offered both as a veterinary medical course and a biological sciences course.

Nutrition and Physiology of Mineral Elements

This course, a dual offering in veterinary medicine and the biological sciences, is given by the Department of Physical Biology. The emphasis in lectures is on recent developments in the nutritional aspects and the physiological, biochemical, and hormonal relationships of the prominent macro- and microelements. Information is also given on the methodologies of mineral research and the chemistry of ions and complexes among other topics.

Parasitic Helminthology

Research methodology as it applies to the study of platyhelminthes and nemathelminthes constituted the thrust of a new course offered by the Department of Pathology. Open to both graduate students and undergraduates, it proved most popular with those pursuing graduate work.

Seminar in Necropsy Pathology

Relevant material acquired by students during their training in the necropsy service is prepared and presented for the rest of the group and a professor of the Department of Pathology, assisted by a pathologist from the Necropsy Section. The seminar is open to professional-degree candidates and to graduate students in pathology.

Seminar in Surgical Pathology

A slide format is used for the seminar in surgical pathology conducted by a professor in the Department of Pathology with the assistance of a pathologist in the Surgery Section of the Teaching Hospital. Presentations are by students — graduate students in pathology or veterinary students who take the seminar as an elective — and are based on material acquired by them during time spent in a surgical service of the hospital.

Special Topics in Pathology

Faculty members with particular expertise in areas of pathology not routinely encountered by students in the hospital and departmental services present the course Special Topics in Pathology offered by the Department of Pathology. Topics covered include reproductive pathology, ocular pathology, dermal pathology, neuropathology, pathology of laboratory animals, pathology of avian species, and pathology of marine animals. The course is open to both graduates and undergraduates.

Special Pathology

Eleven faculty members and one guest lecturer participated in the revised course in special pathology, presented by the Department of Pathology. Further modifications are planned as a result of a careful evaluation of the course material, in itself and as it relates to others in the sequence of pathology courses required of professional-degree candidates.

New Appointments

David Axelrod, *Adjunct Professor*
Raymond B. Baggs, *Senior Research Associate*
Deborah C. Bernreuter, *Visiting Fellow*
Vernon J. F. Brightman, *Visiting Professor*
Malcolm H. Crump, *Postdoctoral Fellow*
Henri P. deBoom, *Visiting Professor*
Marion E. Georgi, *Research Associate*
Eva I. E. Gustavsson, *Visiting Fellow*
Nabil A. Hemeida, *Visiting Fellow*
John D. Henion, *Assistant Professor*
Omer Fadi Idris, *Visiting Professor*
Sung Il Koo, *Research Associate*
Robert M. Lewis, *Professor and Chairman of the Department of Pathology*
Ulf Lindblom, *Visiting Professor*
Thomas A. McGeady, *Visiting Associate Professor*
George J. Milanowski, *Research Associate*
Tsuneyuki Oku, *Visiting Lecturer*
Hristo J. Stanchev, *Visiting Fellow*
Michael E. Villereale, *Research Associate*
Jose M. Vizcaino, *Visiting Fellow*
Joram Weisman, *Visiting Research Associate*

Promotions and Title Changes

Max J. Appel, *Professor* (from Associate Professor)
Harvey J. Armbrecht, *Postdoctoral Fellow* (from Research Associate)
David A. Bemis, *Postdoctoral Associate* (from Research Assistant)
Howard E. Evans, *Professor and Chairman of the Department of Anatomy* (from Professor)
Helen (Wiltberger) Greisen, *Research Associate* (from Research Technician)
N. Bruce Haynes, *Associate Professor, Extension Veterinarian, and Director of Continuing Education* (from Associate Professor and Extension Veterinarian)

Katherine A. Houpt, *Assistant Professor* (from Postdoctoral Associate)
Robert F. Kahrs, *Professor* (from Associate Professor and Associate Dean for Predoctoral Programs)
Lennart P. Krook, *Professor and Associate Dean for Postdoctoral Education* (from Professor)
Alvin F. Sellers, *Professor and Associate Dean for Research* (from Professor)
Jeffrey S. Smith, *Visiting Instructor* (from Resident)
Mary C. Smith, *Assistant Professor* (from Instructor)
John I. Taylor, *Visiting Assistant Professor* (from Instructor)

Resignations

Deborah C. Bernreuter, *Visiting Fellow*
Stephen I. Bistner, *Associate Professor*
Alfred L. Britt, *Senior Research Associate*
Malcolm H. Crump, *Postdoctoral Fellow*
Russell J. DuFrain, *Research Associate*
J. Robert Duncan, *Assistant Professor*
Ronald L. Hullinger, *Visiting Associate Professor*
Marius Ianconescu, *Visiting Research Associate*
William H. Johndrew, *Director of Student Administration*
Lawrence L. Kramer, *Professor*
Elena C. McCoy, *Research Associate*
Thomas A. McGeady, *Visiting Associate Professor*
Theodore A. Nobel, *Visiting Professor*
Eric L. Reinertson, *Assistant Professor*
William J. Roenigk, *Professor*
Alan N. Taylor, *Senior Research Associate*
Fausto E. Waterman, *Senior Research Associate*

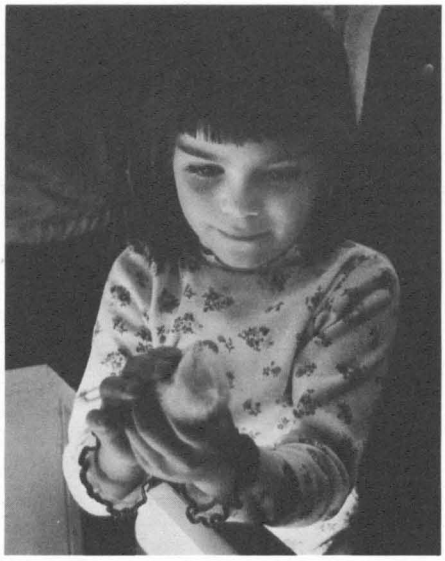
Retirements

Karina Burda, *Research Associate*

Deaths

Donald D. Delahanty, Professor

Public Service

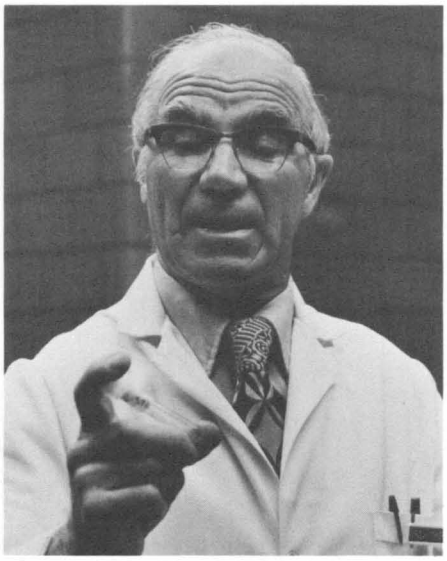


In addition to health care for animals provided through the Teaching Hospital, the services of the Diagnostic Laboratory on campus, the Mastitis Control Program, and the regional laboratories for avian and aquatic species, service to the public was rendered directly by the faculty and staff of the College through several thousand telephone and personal-visit consultations and the presentation of talks and programs to more than ninety lay groups throughout the state.

Public service of another sort was provided through faculty consultancies with governmental agencies, industrial firms, other academic institutions, and scientific journals as well as through participation in hundreds of professional meetings, seminars, and symposia. Several individuals presented all or parts of various courses taught elsewhere, including one on the anatomy of the gull, given at the Cornell Marine Laboratory at the Isles of Shoals off the Maine coast, by a faculty member during his vacation.

In keeping with the American Bicentennial celebration, the theme of the annual Open House at the College in April was "Veterinary Medicine: Past and Present." Exhibits tracing the history of the profession from the early 1600s to today were viewed by some 7,500 visitors, who also saw films and toured the facilities.

Funded Research



The processes by which research projects are begun, continued, and completed are varied, but depend, largely and inevitably, on the funds that are available. Some projects are begun, and, indeed, some are completed, with funds from departmental budgets. In order to finance many of the more ambitious and far-reaching programs, however, grants must be sought from agencies outside the College. Grants nearly always are earmarked for a defined project to be carried out within a specified time period, and renewal of the grant within that time period is, of course, dependent upon the progress made. If a grant terminates before the project is completed, funds must be sought to continue the work. Obtaining a new grant, therefore, does not necessarily mean that a new project is begun; the new funds may allow additional or expanded work to be undertaken or may provide the needed money to follow through on a promising study.

New Grants

Following are brief descriptions of the major research activities that received new financial support from sources outside the College during the year 1975–76.

Amoxicillin Dosage for Mastitis

Source of funds: Beecham Laboratories
Amount of grant: $4,209/three months
Principal investigator: Leslie A. Wager, Field Veterinarian, Mastitis Control Program
Purpose and goals: To develop clinical data to establish the efficacy of amoxicillin in treating mastitis in lactating cows, and determine the appropriate dosage.

Anatomical Dictionary

Source of funds: National Institutes of Health
Amount of grant: $17,830/one year
Principal Investigator: Robert E. Habel, Professor of Veterinary Anatomy, Department of Anatomy
Purpose and goals: To investigate the meaning of the terms, write authoritative definitions, and sketch the desired illustrations for the chapter on *viscera* for an illustrated veterinary anatomical dictionary to be published as a nonprofit enterprise by the World Association of Veterinary Anatomists.

Avian Disease Control

Source of funds: New York State Department of Agriculture and Markets
Amount of grant: $136,795/one year
Principal investigator: Bruce W. Calnek, Professor of Avian Diseases, Department of Avian and Aquatic Animal Medicine
Purpose and goals: To operate poultry disease diagnostic laboratories throughout New York State.

Avian Leukosis

Source of funds: National Institutes of Health
Amount of grant: $448,286/five years
Principal investigator: Bruce W. Calnek, Professor of Avian Diseases, Department of Avian and Aquatic Animal Medicine
Purpose and goals: To understand the pathogenesis of Marek's Disease and determine the means by which various factors affect pathogenesis; specific objectives include improved understanding of avirulence in certain strains of the virus, the character of infection and host response, and interaction between oncogenetic DNA and RNA virus infections in birds with both.

Biologic Materials

Source of funds: Pfizer, Incorporated
Amount of grant: $4,000/one year
Principal investigator: Robert H. Wasserman, Professor of Radiation Biology, Department of Physical Biology
Purpose and goals: To provide general support for the research activities of the Department of Physical Biology.

Bovine Reproduction

Source of funds: USDA, Hatch Act
Amount of grant: $15,300/one year
Principal investigator: Kenneth McEntee, Professor of Veterinary Patholology, Department of Large Animal Medicine, Obstetrics, and Surgery
Purpose and goals: To develop improved methods for diagnosing and treating *Vibrio fetus* carrier bulls in order to establish workable programs for eradicating vibriosis from artificial insemination cooperatives.

Bovine Winter Dysentery

Source of funds: USDA, Hatch Act
Amount of grant: $8,000/one year
Principal investigator: Fredric W. Scott, Associate Professor of Veterinary Microbiology, Department of Microbiology, and Director, Cornell Feline Research Laboratory
Purpose and goals: To gain the information necessary to develop an effective vaccine against winter dysentery, one of the major diseases of dairy cattle in New York State in terms of resultant economic losses.

Calcium Absorption

Source of funds: National Dairy Council
Amount of grant: $21,400/one year
Principal investigator: Robert H. Wasserman, Professor of Radiation Biology, Department of Physical Biology
Purpose and goals: To understand how lactose (milk sugar) and other constituents of milk enhance the absorption of calcium and other metal ions.

Cancer Virology

Source of funds: Duke University
Amount of grant: $96,220/one year
Principal investigator: Fernando de Noronha, Professor of Veterinary Virology, Department of Pathology
Purpose and goals: To study the prevention and treatment of virus-induced leukemias and sarcomas by immunological methods.

Canine Hip Dysplasia

Source of funds: Richard King Mellon Foundation
Amount of grant: $150,000/three years
Principal investigator: Leland E. Carmichael, the John M. Olin Professor of Virology, Department of Microbiology
Purpose and goals: To gain information about the basic mechanisms that underlie canine joint diseases, particularly hip dysplasia.

Doppler Blood Flow Monitoring

Source of funds: National Institutes of Health
Amount of grant: $141,226/three years
Principal investigator: Cornelis J. Drost, Research Associate, Department of

Physiology, Biochemistry, and Pharmacology
Purpose and goals: To develop an accurate user-oriented, transcutaneous, ultrasonic system for measuring Doppler blood flow and to test the practical value of the system through diagnostic use in the Teaching Hospital.

Environmental Pollutants

Source of funds: Energy Research and Development Administration
Amount of grant: $50,000/one year
Principal investigators: Frederick W. Lengemann, Professor of Radiation Biology, and Richard A. Wentworth, Senior Research Associate, Department of Physical Biology
Purpose and goals: To provide information that is needed in order to make valid estimates of the potential hazards of nuclear and fossil fuel energy plants and to provide an insight into the physiological mechanisms that are involved.

Equine Behavior

Source of funds: Morris Animal Foundation
Amount of grant: $5,000/one year
Principal investigator: Katherine A. Houpt, Assistant Professor of Veterinary Physiology, Department of Physiology, Biochemistry, and Pharmacology
Purpose and goals: To better understand social interactions of horses especially in the development of a dominance hierarchy in groups and to learn more about the factors involved in mare-foal relationships and the correlation, if any, between maternal dominance and the later dominant/submission behavior of the offspring.

Equine Colic Model

Source of funds: Morris Animal Foundation
Amount of grant: $60,000/four years
Principal investigator: Alvin F. Sellers, Professor of Veterinary Physiology, Department of Physiology, Biochemistry, and Pharmacology, and Associate Dean for Research
Purpose and goals: To develop a model (in the pony) in which the basic physiological processes of the equine large intestine may be studied and upon which can be superimposed dietary effects, larval challenge, and drugs commonly used in treating ileus and colic.

Equine Drug Testing and Research: Thoroughbreds

Source of funds: Finger Lakes Racing Association, Incorporated
Amount of grant: $34,575/three years
Principal investigator: George A. Maylin, Associate Professor of Toxicology, Diagnostic Laboratory, and Director, Equine Drug Testing and Research Program
Purpose and goals: To investigate new methods for the detection of drugs in race horses.

Equine Drug Testing: Thoroughbreds

Source of funds: Finger Lakes Racing Association, Incorporated
Amount of grant: $43,031/one year
Principal investigator: George A. Maylin, Associate Professor of Toxicology, Diagnostic Laboratory, and Director, Equine Drug Testing and Research Program
Purpose and goals: To provide the equipment necessary for new chemical procedures to be used in drug research.

Equine Infectious Diseases

Sources of funds: New York State Department of Agriculture and Markets and New York State Racing Association
Amount of grants: $10,000 and $5,000 (respectively)/one year
Principal investigator: Leroy Coggins, Professor of Veterinary Virology, Department of Pathology, and Director, Research Laboratory for Equine Infectious Diseases
Purpose and goals: To develop methods for the diagnosis and control of equine infectious anemia and the viral diseases of the respiratory tract of horses.

Feline Urolithiasis

Source of funds: Ralston Purina Company
Amount of grant: $50,000/one year
Principal investigator: Catherine G. Fabricant, Senior Research Associate, Department of Microbiology
Purpose and goals: To test the hypothesis that an interaction occurs between a calicivirus and a herpesvirus in feline urinary obstruction and determine whether a third agent — a syncytium-forming virus — is also involved.

Mastitis Control

Source of funds: New York State Department of Agriculture and Markets
Amount of grant: $245,690/14 months
Principal investigator: Francis H. Fox, Professor of Veterinary Medicine and Obstetrics, and Chairman, Department of Large Animal Medicine, Obstetrics, and Surgery, and Director, Ambulatory Clinic
Purpose and goals: To operate the regional laboratories in New York State that provide bovine mastitis diagnostic service and to supplement the funds necessary to maintain the central mastitis control laboratory.

Poultry Diseases

Source of funds: USDA, Hatch Act
Amount of grant: $9,000/one year
Principal investigator: Stephen B. Hitchner, Professor of Avian Diseases, and Chairman, Department of Avian and Aquatic Animal Medicine
Purpose and goals: To continue the development and evaluation of techniques for the eradication of infectious diseases of poultry.

Resistance of Staphylococcus aureus *to Heavy Metals and Antibiotics*

Source of funds: National Oceanic and Atmospheric Administration
Amount of grant: $20,387/one year

Principal investigator: John F. Timoney, Assistant Professor of Veterinary Bacteriology, Department of Microbiology
Purpose and goals: To determine the frequency of strains of *Staphylococcus aureus* that are resistant to cadmium, mercury, zinc, and lead in the sludge disposal sites of the New York Bight and to determine the correlations between that resistance and their resistance to antibiotics.

Toxicologic Pathology: Residency

Source of funds: Bristol Laboratories
Amount of grant: $30,900/three years
Principal investigator: Robert M. Lewis, Professor of Veterinary Pathology, and Chairman, Department of Pathology
Purpose and goals: To prepare an individual for certification as a veterinary pathologist by the American College of Veterinary Pathologists.

Veterinary Drug Reporting Program

Source of funds: Food and Drug Administration
Amount of grant: $7,405/one year
Principal investigators: Arthur L. Aronson, Professor of Veterinary Pharmacology, and Wayne S. Schwark, Assistant Professor of Veterinary Pharmacology, Department of Physiology, Biochemistry, and Pharmacology
Purpose and goals: To obtain data on the safety, reliability, and efficacy of veterinary drugs with particular emphasis on the rapid reporting of possible adverse effects in order that regulatory agencies and practitioners may be alerted to the possible dangers of using specific drugs.

Viral Role in Arteriosclerosis

Source of funds: National Institutes of Health
Amount of grant: $115,452/two years
Principal investigator: Catherine G. Fabricant, Senior Research Associate, Department of Microbiology
Purpose and goals: To determine the role of the herpesvirus that causes Marek's Disease (of chickens) in the pathogenesis of arteriosclerosis in chickens, information that may be particularly significant in understanding arteriosclerosis in humans.

Viral Flora in Shellfish

Source of funds: New York Sea Grant Institute
Amount of grant: $33,010/one year
Principal investigator: James H. Gillespie, Professor of Veterinary Microbiology, and Chairman, Department of Microbiology
Purpose and goals: To determine the viral flora of shellfish used as human food, with principal emphasis on shellfish diseases of possible viral etiology with a view to their control and prevention.

Continuations

Grants to continue a research project that is already under way are sometimes sought from the same agency that has been supporting the work, sometimes from another source. Table 9 is a summary of the continuation grants received by the College during 1975–76.

Table 9
Summary of Continuation Grants and Contracts

Project	Principal Investigator	Amount	Source
Blood Flow and Absorption in the Ruminant Stomach	Alvin F. Sellers Physiology, Biochemistry, and Pharmacology	$ 47,531	National Institutes of Health
Carbohydrate and Ketone Body Metabolism	Emmett N. Bergman Physiology, Biochemistry, and Pharmacology	65,211	National Institutes of Health
Large Intestinal Function: Comparative Studies	Charles E. Stevens Physiology, Biochemistry, and Pharmacology	34,015	National Institutes of Health
Control of Food Intake: Glucostatic and GI Factors	T. Richard Houpt Physiology, Biochemistry, and Pharmacology	22,160	National Institutes of Health
Equine Drug Research	George A. Maylin Diagnostic Laboratory	178,500	Harness Tracks and New York Racing Association
Equine Drug Field Testing	George A. Maylin Diagnostic Laboratory	449,140	New York State Tracks and Racing Associations
Feline Herpesvirus Vaccines	Fredric W. Scott Microbiology	32,378	National Institutes of Health

(Continued on next page)

Publications

Following is a list of the scientific and technical articles, books, and parts of books published in 1975–76 by members of the College faculty and staff. The publications generally constitute reports on research projects under way and are grouped into the six categories used at the College to reflect major areas of veterinary medical research. Brief descriptions of the categories precede the lists of relevant publications. A person interested in obtaining a reprint should communicate with the senior author (the first name listed) of the publication in question. Letters may be addressed to the individual at the New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.

Structural and Functional Systems

Basic to understanding or treating disease is an understanding of the structure and function of cells, organs, and entire animals and the processes by which they develop and grow. Specifically, studies are focused on the various physiologic systems, such as gastrointestinal, nervous, urogenital, circulatory, and immune. There is also a need to determine the structure, function, and biochemistry of a variety of bacteria, viruses, and other organisms that parasitize animals and humans. The physiologic, immunologic, and behavioral responses of animals to infections, various drugs, and other stimuli are also of concern to researchers in this general area.

Argenzio, R. A.; Lowe, J. E.; and Stevens, C. E. 1976. Interrelationship of Na, HCO_3, and volatile fatty acid transport across equine large intestinal mucosa. *Gastroenterology* 70: A–2/860. [Abstract]

Table 9
Summary of Continuation Grants and Contracts (Cont'd)

Project	Principal Investigator	Amount	Source
Feline Respiratory Diseases	Fredric W. Scott Microbiology	96,303	National Institutes of Health
Intestinal Absorption of Mineral Ions	Robert H. Wasserman Physical Biology	105,035	National Institutes of Health
Laboratory Animal Diagnostic Resource	Edwin J. Andrews Administration	60,979	National Institutes of Health
Neural Correlates of Skin Sensibility	Daniel N. Tapper Physical Biology	28,396	National Institutes of Health
Neurochemical Correlates of Experimental Cretinism	Wayne S. Schwark Physiology, Biochemistry, and Pharmacology	23,718	National Institutes of Health
Nuclear Energy for Artificial Heart Devices	Francis A. Kallfelz Physical Biology	120,000	Energy Research and Development Administration
Organ-Cultured Duodenum: CH Absorptive Mechanism	Robert A. Corradino Physical Biology	22,000	National Institutes of Health
Physical Principles In Biological Research	Robert H. Wasserman Physical Biology	28,622	National Institutes of Health
Regeneration, Oncogenesis, and Immunity	Edwin J. Andrews Pathology	25,000	National Institutes of Health
Synthesis and Function of Calcium-Binding Protein	Robert A. Corradino Physical Biology	11,159	National Institutes of Health
Training in Comparative Gastroenterology	Charles E. Stevens Physiology, Biochemistry, and Pharmacology	69,116	National Institutes of Health
Venereal Disease in Animal Models	Alexander J. Winter Large Animal Medicine, Obstetrics, and Surgery	42,234	National Institutes of Health

Argenzio, R. A.; Miller, N.; and von Engelhardt, W. 1975. Effect of volatile fatty acids on water and ion absorption from the goat colon. *Am. J. Physiol.* 229:997–1002.

Arion, W. J.; Ballas, L. M.; and Lange, A. J. 1976. Microsomal membrane permeability and the hepatic glucose 6-phosphatase system: Interactions of the system with D-mannose 6-phosphate and D-mannose. *J. Biol. Chem.* 251:4901–7.

Arion, W. J., and Lange, A. J. 1976. The intracellular location of hepatic fructose 1, 6-biophosphate aldolase. *Biochem. and Biophys. Res. Commun.* 68:770.

Arion, W. J.; Lange, A. J.; and Ballas, L. M. 1976. Quantitative aspects of the relationship between glucose 6-phosphate transport and hydrolysis for the liver microsomal glucose 6-phosphatase system. *J. Biol. Chem.* 251:6784–90.

Armbrecht, H. J., and Wasserman, R. H. 1976. The enhancement of calcium uptake by lactose in the rat small intestine. *Fed. Proc.* 35(3). [Abstract]

Atinmo, T.; Walker, E. F., Jr.; Houpt, K. A.; Kallfelz, F. A.; Pond, W. G.; and Barnes, R. H. 1975. Plasma hormone levels in young pigs during and after protein deprivation. *J. Animal Sci.* 41:309. [Abstract]

Bodnar, J. D.; Poulos, D. A.; and Tapper, D. N. 1975. A survey of the peripheral trigeminal system in the common boa constrictor. *Soc. Neurosci.*, p. 561.

Brightman, V. J. 1976. Disordered oral sensation and appetite. In *Proc. Second Int. Conf. on Chemical Senses and Nutrition,* (Monell Center, Philadelphia).

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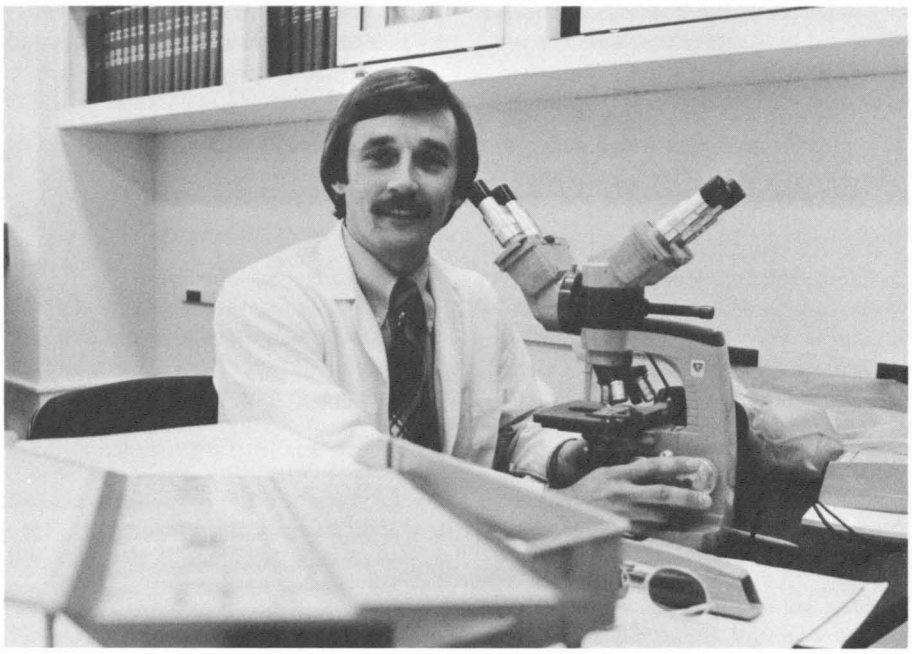

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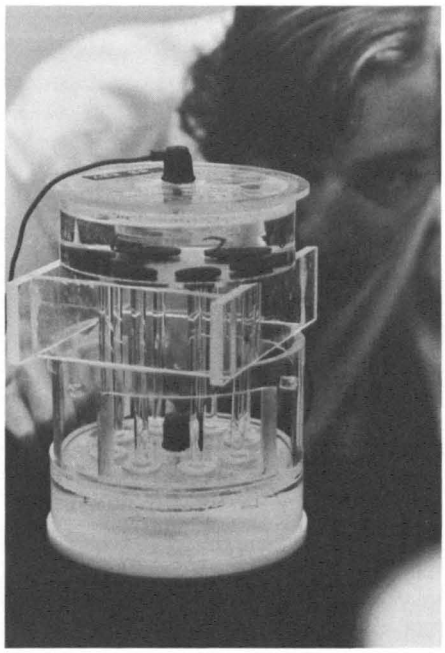

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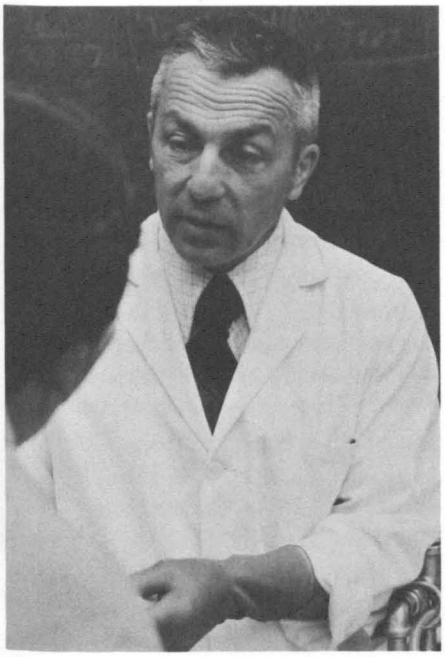

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Causes and Manifestations of Disease

Among research projects aimed at determining the causes and effects of animal and human diseases are studies on allergic, immunologic, parasitic, and infectious diseases and on the effects

various agents have on developing fetuses. Other investigations are focused on the causes of chronic and degenerative diseases, cancer, nutritional diseases, and the causes of reproductive failure.

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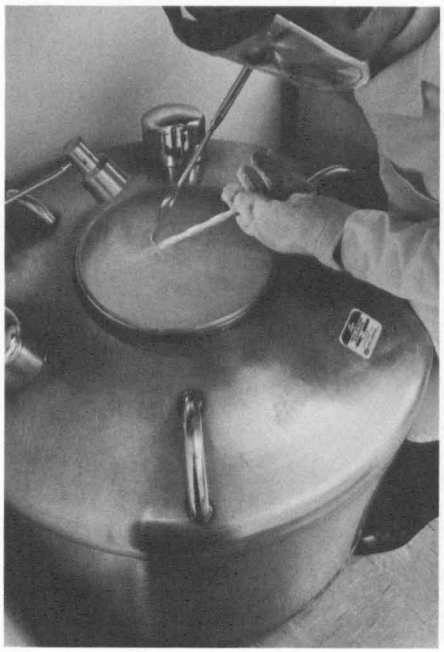

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Research programs require such resources as computer facilities, scientific equipment, laboratory renovation, and administrative support. Some of these activities are basic

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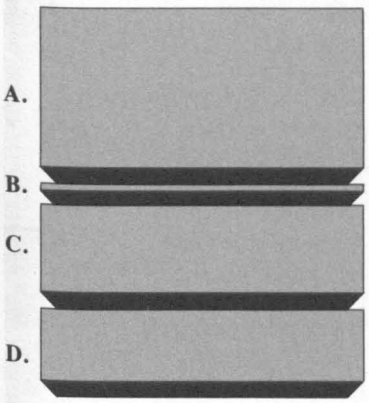
Financial Statements

The College Dollar

Where it came from

A. State appropriation (49.7%)
B. Federal appropriation (0.5%)
C. Grants and contracts (27.4%)
D. College income (22.4%)



Where it went

A. Instruction and departmental research (22.3%)
B. Organized educational activities–Teaching Hospital (14.9%)
C. Organized research (37.3%)
D. Extension and public service (15.5%)
E. Library (1.4%)
F. Student services (0.4%)
G. Plant operation and maintenance (0.9%)
H. General administration (4.0%)
I. General institutional expense (2.8%)
J. Student aid (0.5%)

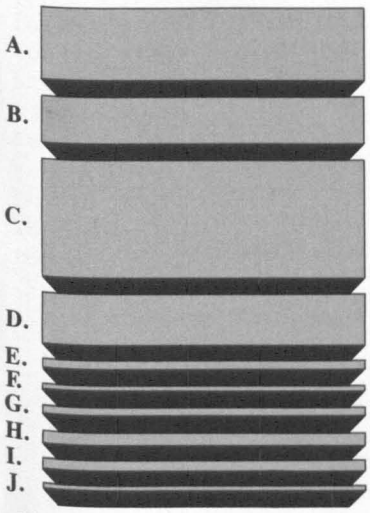


Table 10
Source of Funds

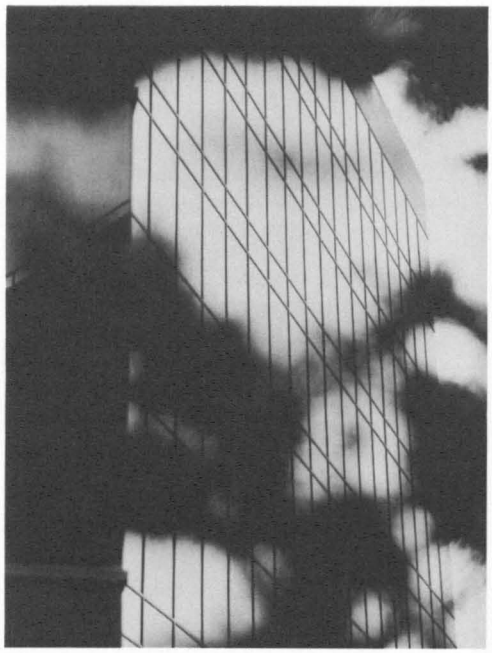
	1975–76	1974–75
State appropriation	$4,748,903	$4,767,515
Federal appropriation	46,142	40,193
Grants and contracts	2,620,812	2,137,997
College income	2,136,602	2,067,929
Total	**$9,552,459**	**$9,013,634**

Table 11
Use of Funds

	1975–76	1974–75
Instruction and departmental research	$2,128,946	$1,976,202
Organized educational activities—Teaching Hospital	1,427,397	1,291,410
Organized research	3,560,349	3,422,334
Extension and public service	1,482,688	1,268,830
Library	132,984	130,581
Student services	35,530	32,271
Plant operation and maintenance	87,910	83,881
General administration	381,884	364,457
Staff benefits	24	33,585
General institutional expense	270,709	380,115
Student aid	44,038	29,968
Total	**$9,552,459**	**$9,013,634**

Tables 10 and 11 are summaries of the income and expenditures of the New York State College of Veterinary Medicine for the fiscal years from July 1, 1974, through June 30, 1975, and from July 1, 1975, through June 30, 1976.

Administrators and Advisers



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†On sabbatical leave, 1975–76;
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‡Acting as secretary of the Advisory Board

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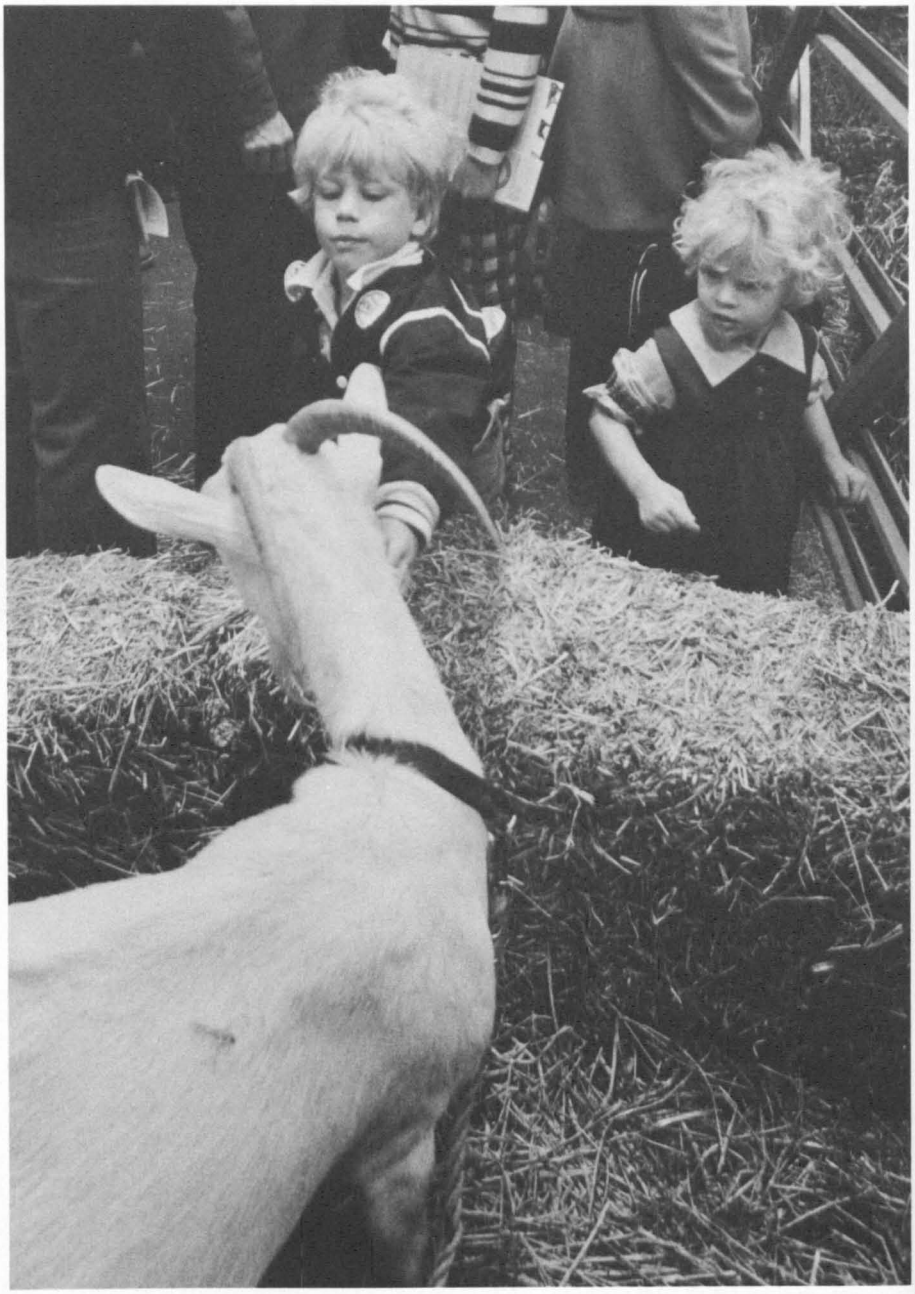
Detailed statistical material relating to various College programs is available and will be sent upon request. A person wishing to receive any of the following should specify the document(s) desired and be sure to include a complete return address with zip code. Such requests should be sent to

Annual Report Statistical Supplements
C-114 College of Veterinary Medicine
Cornell University
Ithaca, New York 14853.

The following reports, compiled on the basis of the calendar year, are available for 1975:

Report of the Surgical and Consulting Clinic (large animal)
Report of the Ambulatory Clinic (large animal)
Report of the Small Animal Clinic
Report of the Clinical Pathology Laboratory
Report of the Radiology Section
Report of Necropsies
Report of Parasitological Examinations
Report of Laboratory Animal Diagnoses
Report of the Diagnostic Laboratory
New York State Mastitis Control Program
Poultry Disease Diagnostic Laboratories



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