

# Veterinary Viewpoints

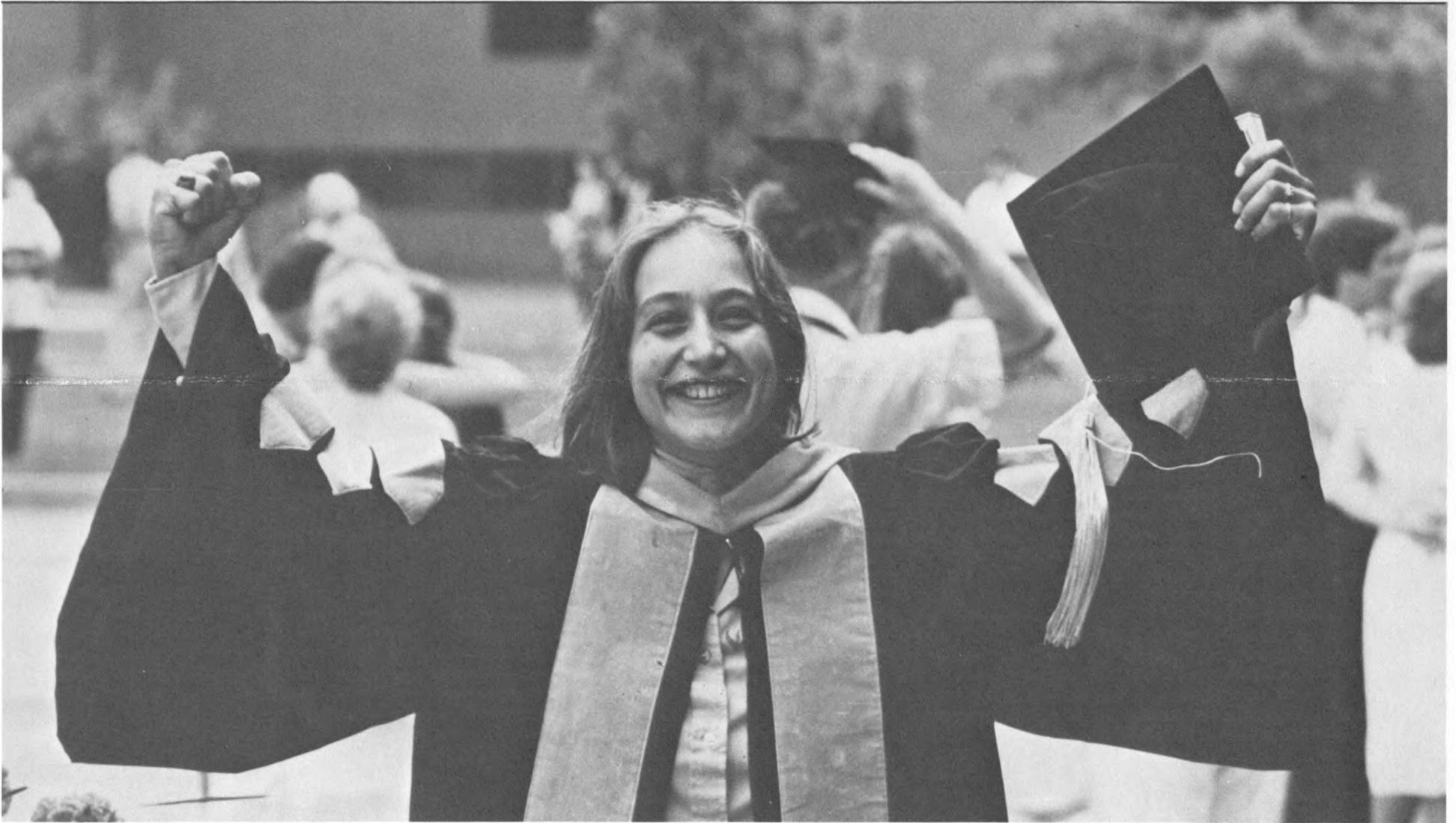
Summer 1982

Number Seventeen

**GROWING BONES** Page 5

**The New York State College of Veterinary Medicine**

**at Cornell University**



*Donna Tomkiewicz, DVM*

## Honors, Kudos & Prizes

"The only thing tougher than getting *into* veterinary college is making it *through* veterinary college." Or so claimed one graduating senior. With 45 required courses in the first three years and full-time clinical training throughout the fourth, the curriculum has deservedly been called rigorous. A favorite question is whether veterinary students intrinsically need less rest, food and leisure time, or whether veterinary college trains them to survive on three hours of sleep and baloney sandwiches. Duty has its rewards, however. Honor Day and graduation ceremonies publicly recognize the hard work

and achievement of the students. A quick glance through the Honor Day program turns up words like perseverance, excellence, special proficiency and dedication and they all apply to the students winning this year's prizes.

The most prestigious award given annually would have to be the Gentle Doctor Award. This year, Carol Carberry received the bronze statue of the Gentle Doctor for her enthusiasm, motivation and dedication to the delivery of excellent veterinary patient care. In addition, she won, with Mary O'Horo, the Merck Manual Awards in special recognition of outstanding advancement in scholastic performance.

Also at Honor Day, the memory of a friend and faculty member was honored in

the presentation of the Gary Bolton Memorial Cardiology Award. Dr. Bolton died in February of this year after a long struggle with cancer. He was known and respected both as a cardiologist and as a compassionate veterinarian who exhibited a special empathy for patients and their owners. Funds for the endowment of this award arose from donations made by friends and colleagues of Dr. Bolton, in memory of his outstanding contributions to the field of small animal cardiology. James Fingerth was the winner of this award, given for his expertise in cardiology and his response to patients, in keeping with Dr. Bolton's lifelong philosophy.

Although faculty are most often in the position of voting awards to students, the

students have the opportunity to reciprocate with the Norden Distinguished Teacher Award. This award is given to a full-time member of the veterinary medical faculty who is primarily engaged in teaching. Teaching ability, character and leadership are all criteria considered in voting and this year's winner was John F. Randolph DVM. Dr. Randolph has been a member of the faculty since 1980 when he was appointed an Assistant Professor of Medicine in the Department of Clinical Sciences.

Many more prizes for academic ability, special contributions and outstanding achievement were awarded and a listing of the student winners appears on Page 2.



Carol Carberry, DVM

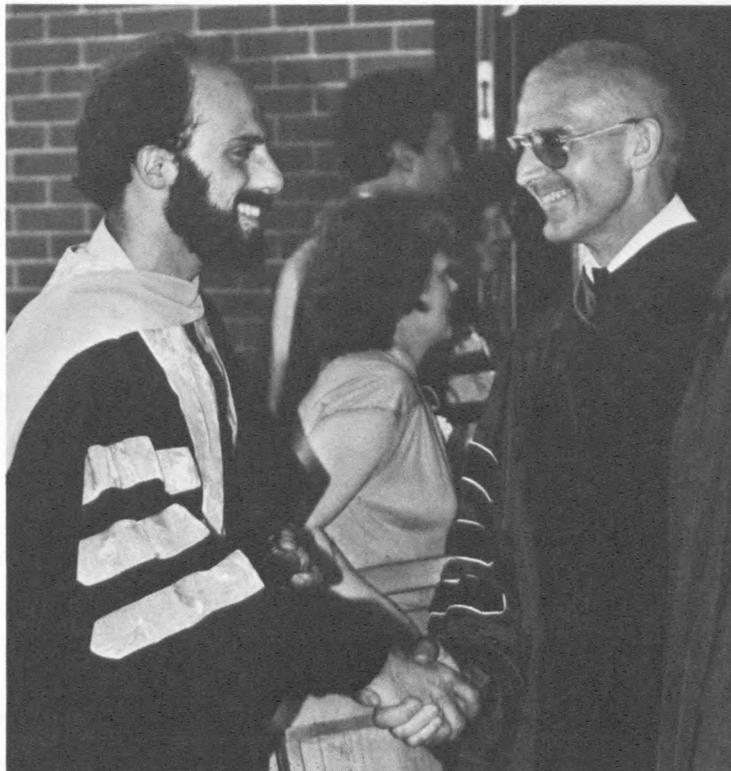
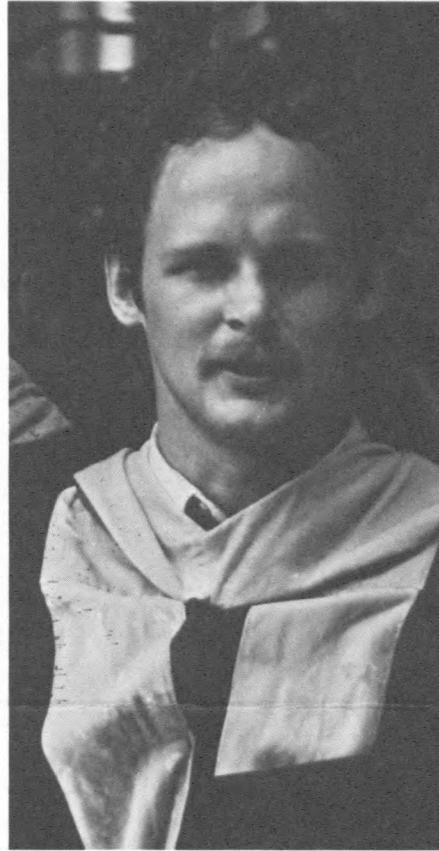
**HONOR DAY AWARDS**

THE HORACE K. WHITE PRIZES	Gregory Seblink Alicia Bertone Christopher Olsen
THE GRANT SHERMAN HOPKINS PRIZE	Paul Orsini
THE NEW YORK STATE VETERINARY MEDICAL SOCIETY PRIZE	Tracey McNamara
THE PRIZE OF THE AUXILIARY OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION	Peter Davis
THE ANNA OLAFSON SUSSEX PATHOLOGY AWARD	Michael Pollack
THE JAMES GORDON BENNETT PRIZE	Karen Ivin
THE MARY LOUISE MOORE PRIZE	Alicia Bertone
THE CHARLES GROSS BONDY PRIZE	Christopher Olsen
AMERICAN ANIMAL HOSPITAL ASSOCIATION STUDENT AWARD	Alan & Nancy Kay
THE PHI ZETA AWARD	Lysanne Cape
THE JACOB TRAUM AWARD	Christine Pinello
THE P.P. LEVINE PRIZE IN AVIAN MEDICINE	Kenneth Dodge Michael Pollack
THE FRANK BLOOM AWARD	Alicia Bertone
THE MALCOLM E. MILLER AWARD	Donna Tomkiewicz
THE DONALD D. DELAHANTY MEMORIAL PRIZE	Christina Ross
THE JANE MILLER PRIZE	Joshua Atz
THE ANNE BESSE PRIZES	Thomas Phillips Mary O'Horo Helen Sheldon
THE MERCK MANUAL AWARDS	Mary O'Horo Carol Carberry
PHILOTHERIAN PHOTOGRAPHIC PRIZES	Howard Gittelman Mark Chmielewicz
THE GENTLE DOCTOR AWARD	Carol Carberry
AMERICAN ASSOCIATION OF FELINE PRACTITIONERS	David Krick
THE A. GORDON DANKS LARGE ANIMAL SURGERY AWARD	Paul Orsini
HILL'S AWARD FOR EXCELLENCE IN CLINICAL NUTRITION	Howard Gittelman Lorraine Doyle
HARWAL PRIZE FOR PHARMACOLOGY	Gregory Seblink
THE MYRON G. FINCHER PRIZE	Jeffrey Jamison
THE GARY BOLTON MEMORIAL CARDIOLOGY AWARD	James Fingeroth
THE NORDEN DISTINGUISHED TEACHER AWARD	John F. Randolph, D.V.M.

**VETERINARY VIEWPOINTS**

Veterinary Viewpoints is published four times a year for friends and alumni of the New York State College of Veterinary Medicine, a Statutory College of the State University of New York. Correspondence may be addressed to Karen Redmond, Editor, Schurman Hall, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853. Telephone: 607/256-7699.

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## The Class of 1982

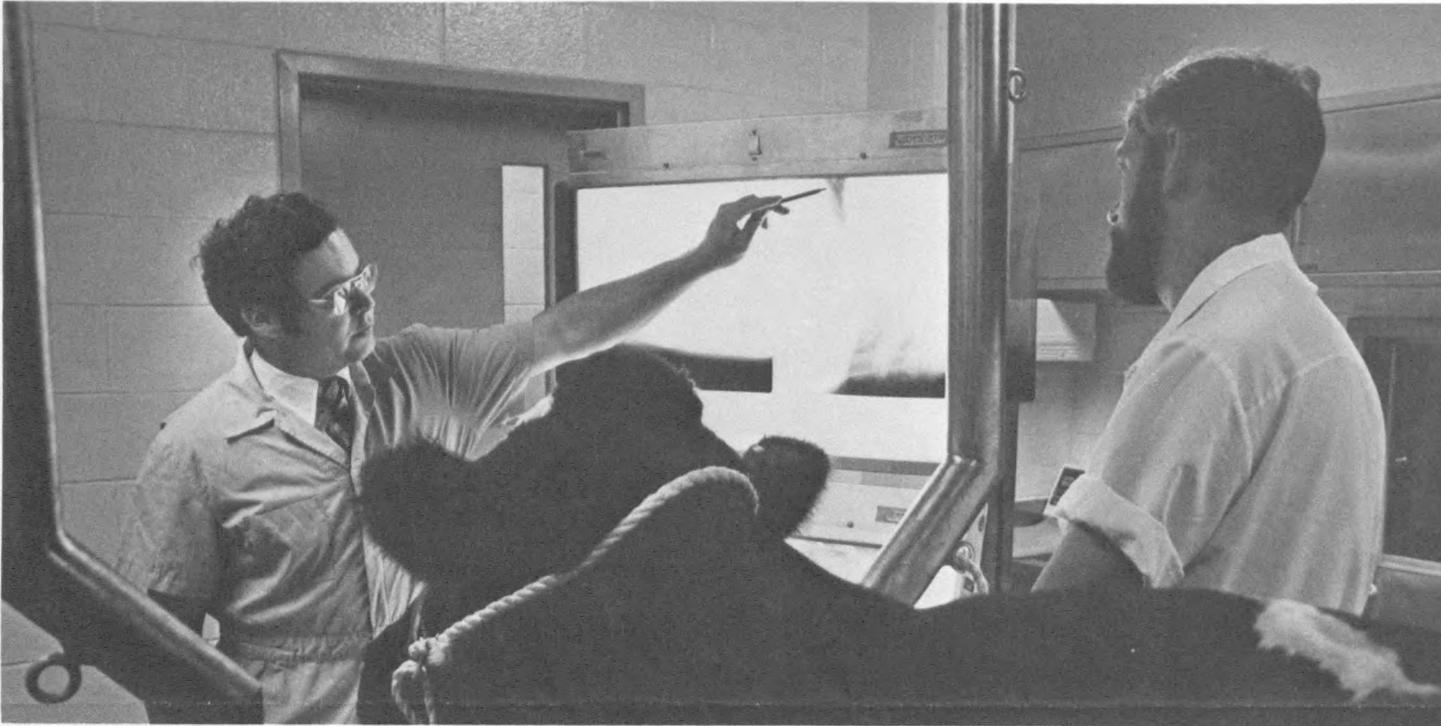
### A Look at the Class of 1986

The difficult task of selecting eighty students from an applicant pool of over five hundred is completed. During the lengthy and complex admissions process, students are evaluated on their academic performance, work with animals, extracurricular activities, personal qualities, verbal and written expression and dedication to the profession. The Class of 1986 is composed of sixty-one New Yorkers, fifteen students from contract states\* and four non-residents. Fifty-five percent of the class is female, exactly reflecting the proportion of females in the applicant pool. Five people are members of racial minority groups. The students, who will begin school this September, have an average undergraduate grade point of 3.5 (on a 4.0 = A scale) and an average Graduate Record Examination Aptitude Score of 1284. Although total numbers of applications have decreased over the last few years, competition for the positions at Cornell remains high. Three years of undergraduate education is necessary to gain admission to the school. The incoming class, however, averages 4.2 years of post-secondary education: 14% of the class have three years of school prior to acceptance; 66% of the class received undergraduate degrees and 20% of the class undertook graduate work. The average age of those who will enter as first year students is twenty-three years. Although 41% of the students attended undergraduate school at Cornell University, nearly forty other undergraduate institutions are represented in the class. Majors range from Psychology and Anthropology to Math and Biochemistry, but an overwhelming number of students concentrated in Animal Sciences or Biology.

The backgrounds of the eighty individuals who form the Class of 1986 are diverse. These students have grown up on farms, in small towns, suburbia and the heart of New York City. They come from twelve states, including Arkansas and South Dakota. Many of the students display talents in music, art and athletics and have interests in traveling, community work and, of course, all sorts of animals. A few of the students had well-established careers before deciding to enter veterinary medicine and many have done work in research and teaching. They have gained animal experience on farms, in zoos, on the racetrack, in wildlife sanctuaries, and with small, mixed and large animal practices. The College welcomes the members of the Class of 1986 and wishes them every success in their academic and professional careers.

\*NYSCVM contracts with nine states (NJ, NH, VT, CT, PR, RI, ME, MD, DE) who are without veterinary schools to provide opportunities to students from these states by having spaces allocated to them. The number of positions is negotiated each year and depends upon the state's allocation to the program and the size and quality of the applicant pool from each state.

By Marcia James Sawyer  
Director of Student Affairs & Admissions



*Dr. Donald Smith and clinic assistant, Kevin Bleck*

## The College & the Cow

Dairy farmers own approximately 10.8 million cows nationwide, and while the New York State College of Veterinary Medicine provides direct clinical care to a relatively small number, as an educational institution and clinic it strongly influences the veterinary care extended to the entire bovine industry. The College's central location in one of the major dairy and meat producing areas of the world has an immediate impact. Until quite recently, it was the sole veterinary facility of its kind accessible to the Northeast livestock owners. Over an even wider geographical area, the graduates of the College's DVM and graduate degree programs reach many more livestock owners as they provide services in practices around the world.

Developing services that will benefit the livestock industry has been a continuing process. At the grassroots level, students begin the process with their professional training in the Ambulatory Clinic and the Large Animal Clinic of the Veterinary Medical Teaching Hospital. Here, they have the opportunity to observe and treat livestock patients under the supervision of the staff and faculty of the Large Animal Clinic and to gain from the clinicians' special expertise in bovine diseases. Dr. Bud Tennant, Chief of Medicine, is a well-known gastroenterologist conducting research into the mechanisms of calf diarrhea, one of the diseases of newborn calves that costs the industry an estimated \$150 to \$200 million each year. Dr. Donald Smith is

a board-certified surgeon with special interest in bovine abdominal surgery. Dr. William Rebhun is board-certified in both ophthalmology and internal medicine and has published several papers on bovine foot problems, ophthalmic and abdominal disorders in cattle. Other diseases being investigated by the faculty and staff include indigestion, listeriosis, stomach displacement, ulcers and diseases of the respiratory tract in cows. In the College's laboratories, experimental vaccines to control or prevent mastitis and bovine herpesmammillitis are being developed. Salmonellosis, a highly infectious disease that also affects humans, is being scrutinized to discover a means of treatment and prevention. In laboratory and clinical work, the Section of Reproductive Studies is helping to genetically improve stock through ova transfer in cows, and the department is frequently called on for the medical and surgical correction of reproductive problems. Bovine reproductive diseases, including vibriosis and brucellosis, receive special research attention too.

Students, faculty and particularly patients benefit from the facilities available for research, treatment and diagnosis at the Large Animal Clinic. A new sterile surgery suite provides the latest in medical and surgical facilities. The nearby Large Animal Isolation Building provides optimum conditions for the safe treatment of infectious diseases in large animals. The diagnostic testing and consulting needs of animal industries in New York State and surrounding regions are met by the New York State Diagnostic Laboratory, located on the College's campus. Services go beyond clinical testing to

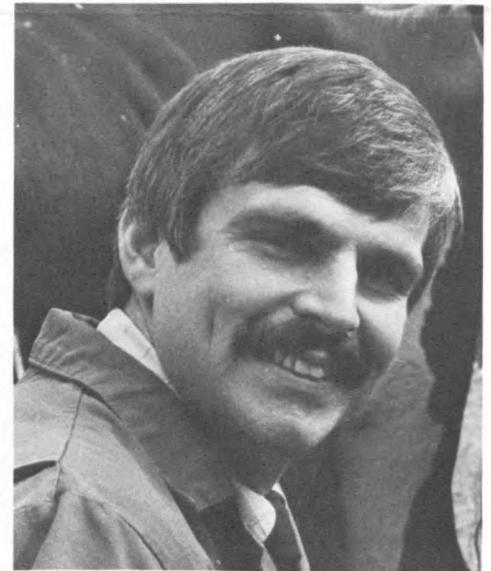
include disease prevention and control, consultation and investigation, test development and animal health management. Milk progesterone tests by the Department of Preventive Medicine's Endocrinology Laboratory assist in swift and accurate pregnancy determination and in the assessment of endocrine disorders in cows.

To continue to develop new approaches to veterinary services and to address the needs and problems of the bovine industry, the New York State College of Veterinary Medicine created the Bovine Health Research Center in 1978. Six areas have been targeted for research by the Center: reproductive disorders, mastitis, digestive-system diseases, metabolic disorders, respiratory disorders and leukosis. Three of these programs, respiratory, metabolic and digestive system diseases, require animals known to be free from previous exposure to certain pathogenic bacteria, viruses and other microbes. Funds to build a facility to house such specific-pathogen free (SPF) calves were donated last fall, and the new Bovine SPF Facility is nearly ready for use. This facility is one of a few found throughout the world and the only one in the Northeast. Additional funds to maintain present studies, build new facilities and expand bovine programs are continually being sought. This investment in the Bovine Health Research Center and the New York State College of Veterinary Medicine will be returned in the control of bovine diseases and the subsequent reduction in economic losses by the cattle industry.

## BHRC Director Appointed

Donald H. Schlafer, D.V.M., M.S., Ph.D., has accepted administrative direction of the Bovine Health Research Center at the New York State College of Veterinary Medicine. As of June 1, 1982, Dr. Schlafer succeeded Dr. George C. Poppensiek as Director of the Center and began an appointment as Assistant Professor within the Department of Pathology.

One of Dr. Schlafer's first duties as Director will be to open the new Bovine Specific Pathogen Free Facility on Snyder Hill. The unit has been funded through private donations and is the first of three proposed buildings in the Bovine Health Research Center. Fund raising efforts have been initiated for a Bovine Multipurpose Research Facility and a Bovine Isolation Facility. The objective is to develop those research projects at the Center which have economic merit for the livestock industry. The Center provides the framework to coordinate the



*D.H. Schlafer, DVM*

activities of programs involving bovine health, to promote the expansion of efforts in those areas, to enlist support for the programs and to disseminate relevant information for the benefit of all.

Dr. Schlafer was formerly an experimental pathologist at the USDA's Plum Island Animal Disease Center while working on his Ph.D. degree. He received his B.S., D.V.M. and M.S. degrees from Cornell and the Ph.D. in Pathology from the University of Georgia. A member of the New York State Veterinary Medical Society, the AVMA, and the U.S. Animal Health Association, he has published several papers on bovine diseases. Dr. Schlafer is also a diplomate of the ACVP and a member of the Wildlife Disease Association and Bovine Practitioners.



*Dr. Collier implants an electro-stimulation device.*

## Growing Bones

In man's experience, broken bones are the bad luck connected with skateboarding, tree-climbing and brushes with ski slopes and other unyielding objects. In the horse, bone fractures are commonly the result of stress, concussion accompanied by speed as in racing, poor footing, improper shoeing, improper care of the foot, and possibly, disease of the bone. Some fractures heal slowly. Occasionally after 6 to 12 months, or longer, no bone growth is evident and signs of lameness recur if the horse is worked. This condition that exists in these

slow healing fractured bones is called delayed union or non-union.

The failure to heal has many causes including a large gap between bones, inadequate immobilization, poor blood supply to the fracture site, or the interference of surrounding tissue. Non-healing fractures have been treated in human medicine through a process known as electro-stimulation. This technique uses the bone's own chemical and electrical properties to stimulate bone growth through the application of an electrical current at the fracture site.

Dr. Michael A. Collier at the Large Animal Clinic/Veterinary Medical Teaching Hospital of the New York State College of Veterinary

Medicine is conducting research on electro-stimulation treatment of delayed unions and fresh (primary) fractures in horses. The results have shown that direct current stimulates bone production at the fracture site, accelerating or in some cases "re-starting" the healing process. The healing rate of fractures can be slow under the best of circumstances and prolonged internal and external fixation leaves an equine patient open to the debilitating changes associated with disuse and immobilization. Unlike a human patient, a horse cannot be kept off the injured limb and physical therapy of the limb is limited. Too little use of the injured leg and too much reliance on the remaining

sound limbs contribute to equine degenerative joint disease and secondary musculoskeletal problems that cost the horse industry millions of dollars each year.

The electro-stimulation devices Dr. Collier works with consist of a cathode, an anode and a power pack and involve both invasive and semi-invasive systems. In both systems, the cathode is placed within the fracture gap to supply direct current for new bone formation. The low level current used for this treatment is safe to the animal and compatible with standard internal fixation techniques presently used in equine orthopedic surgery. In the semi-invasive system, the anode and power supply are placed outside the body, traveling with the patient as part of the bandage wrapping. In humans, the semi-invasive technique works quite well. However, Dr. Collier's research has shown the horse is plagued with several complications with this method of therapy. Infection tends to migrate down the cathode leads into the fracture gap causing bone infection and instability and the continual weight of the animal on the device occasionally breaks a rigid cathode. Therefore, a flexible implantable multi-cathode bone growth stimulator model was developed by this research team. Dr. Collier is investigating this totally implantable bone growth stimulator and in experimental and clinical cases the system has shown excellent biocompatibility and absence of secondary infection. It's hoped that use of an implantable device will eliminate the complications associated with the semi-invasive model.

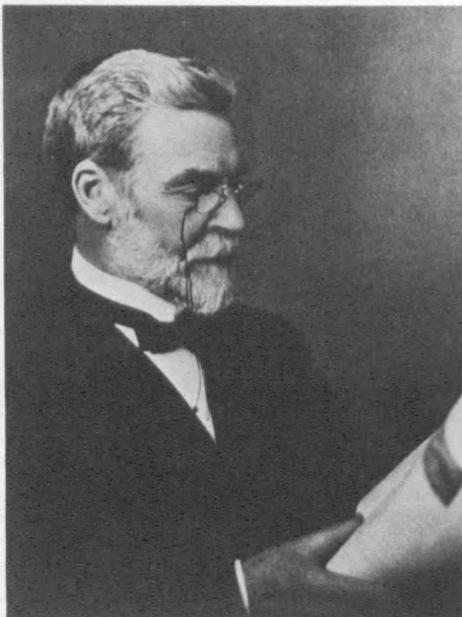
There are several advantages to electro-stimulation treatment—not the least of which is its effectiveness in healing non-unions. The stimulation devices have consistently been found to produce some bone in the vicinity of the cathode. Another plus is the low risk, high benefit ratio associated with this treatment. Alternate treatments, such as bone graft surgery, have comparable healing rates yet the electro-stimulation treatment is equally competitive, and the operative procedure necessary to implant the device is simple and can be performed at the time of the fracture repair. Additionally, the apparatus is entirely portable, allowing the horse mobility and early use of the limb.

Much remains to be learned about electro-stimulation for bone growth. Complications and limitations do exist. For example, electro-stimulation is unproven for use in primary fracture repair, the area our research team is actively pursuing at this time. Methods of therapy must be worked out to prevent joint disease and the loss of a horse to associated long-term stress problems. Continued research in this area will provide more information needed for future clinical applications of this treatment.

## TRADITION

Back when bovine tuberculosis was the topic of the day and a veterinarian made the rounds in horse & buggy, the New York State College of Veterinary Medicine entered its fourth decade and the 20th century. The story of those formative years in veterinary medicine is recounted in the new book, *IN THE JAMES LAW TRADITION 1908-1948*. Written by Professor Emeritus Ellis P. Leonard, the book is a thoroughly researched historical portrait of the College, complete with accounts of the war years, the first women veterinarians and the problems that first baffled then fell to advances in veterinary medicine. Numerous photos, excerpts from private correspondence and anecdotes enliven this history with wisdom and humor.

*IN THE JAMES LAW TRADITION* is the second and final volume in the history of the College by Dr. Leonard. His first volume, *A CORNELL HERITAGE*, illustrated the beginnings of veterinary medicine at Cornell from 1868 to 1908. Although he has been urged to write a third volume bringing the history up to the present time, Dr. Leonard absolutely refuses to continue. He feels history should be written objectively and his own close ties with the College from



1948 on would influence his writing. True to his word, the second volume ends with the note that Dr. Leonard was appointed to head the small animal department on January 1st, 1948.

To purchase the latest volume (\$22.00) or the complete two-volume set (\$40.00) contact the Office of Public Affairs, New York State College of Veterinary Medicine, Ithaca, New York 14853. All sales benefit the College.



*Robert Henrickson '83, in mid-play and mid-air.*

## World Class

If life for the average scholar-athlete is packed with choices between academic excellence and top athletic performance, then competing as a world-class athlete and succeeding as a full-time DVM student would seem to be mutually exclusive. Yet when the U.S. National Lacrosse Team took the field this summer against Canada, Australia and England, a senior veterinary student named Robert Henrickson was there playing mid-field.

Bob is nonchalant about his place on the best lacrosse team in the U.S. Tryouts for the team are held every four years, like the Olympic trials, and this is the second time he has been named a member of the team.

This year's competition for a spot on the team numbered 300. One hundred of these players were chosen to play in two days of eliminations. When the weekend was over, Bob was one of only 23 picked to play for the U.S.

With the pressure of competition in world-class lacrosse and the academic demands of veterinary college, Bob has had to make careful use of his free time. "Everyone has free time," he asserts, "I just decided to give mine to lacrosse." Although he admits it is tough to fit running and weekends of practice in with one of the most rigorous curriculums in academe, he sees nothing special in his achievement. In his mind, he's no different from the person who runs 5 or 10 miles each day before classes. Quiet, nearly self-effacing, he is well-liked but so modest,

that few of his classmates know his team came one game away from winning the last world games in 1978.

This year, the World Lacrosse Games were held at Johns Hopkins University and Bob Henrickson and teammates were unbeaten when they faced Australia in the final game of the championships. The U.S. Team played an impressive game, winning 22-12 over the Australians.

The competition over for another four years, Bob returned to the College and work on the anesthesiology crew for the summer. Lacrosse will be put on the back burner for a time. Senior year looms ahead with its demanding clinic schedule, then graduation, followed by a beginning in veterinary practice. But lacrosse is never far from his mind. Bob is already thinking about the 1986 World Lacrosse Games!



Robert F. Smith

## Bob Smith Retires

Nine years after becoming Director of Biomedical Communications at the College, Dr. Robert F. Smith is retiring. When Dr. Smith joined the faculty of the New York State College of Veterinary Medicine in 1973, he was a registered biological photographer in the fields of Medicine and Natural Science, a Fellow of the Royal Microscopical Society and a Fellow of the Biological Photographic Association. As Senior Biological Photographer and Head of the Department of Microscopy and Photomicrography at Brookhaven National Laboratory, he won numerous awards and four Charles Foster Memorial Citations for photomicrography. By 1973, when he joined Cornell's faculty, he had already spent more than 30 years developing techniques for differential optical staining of living tissues for examination under the microscope. In 1976, he was the first researcher in the U.S. to receive the diploma of the Royal Microscopical Society of Great Britain, a doctoral level degree awarded specifically for microscopy.

Under his direction, the Biomedical Communications Department became a facility uniquely geared to the demands of veterinary medicine. He consistently sought the best from his craft. He was, in the words of Dr. L. Z. Saunders, "America's premier professional photomicrographer," and certainly all who have worked with him would agree.

Bob Smith's plans do not include a quiet retirement. In fact, he may be busier than ever, conducting courses, putting the finishing touches on a new book, traveling, and consulting with leading manufacturers of photographic equipment.



## RIA TRAINING

A training course in the intricacies and practical uses of Radioimmunoassay (RIA) was held at the College from June 7 to July 16, 1982. Twenty-two research scientists from 21 developing countries spent those six weeks acquiring training in radioimmunoassay and its applications in improving

reproductive efficiency of domesticated animals. The course was sponsored by the International Atomic Energy Agency (IAEA) and the Food and Agriculture Organization (FAO) of the United Nations in cooperation with the U.S. Government.

Course directors, Drs. Frederick W. Lengemann, Professor of Veterinary Physiology and Thomas J. Reimers, Director of the Endocrinology Laboratory/Veterinary

Preventive Medicine, organized and conducted daily lectures and laboratories for participants. Faculty members from the New York State College of Veterinary Medicine and the New York State College of Agriculture and Life Sciences, as well as visiting professors from other countries gave special presentations throughout the course.

Radioimmunoassay (RIA) is an immunological procedure in which a known amount of a radioisotope-labelled hormone or other substance is added to the sample to be tested. Both the labelled and the non-labelled natural hormone, or other substance, competitively bind to specific antibody which is also added to the mixture. As the amount of unlabelled hormone increases, the amount of radioisotope-labelled material which binds to the antibody decreases.

In animal reproduction, radioimmunoassay has revealed a complexity of interactions between neural, pituitary, gonadal and placental hormones. It has also made possible the study of the interaction of nutrition, genetics and environment on reproduction. This training course dealt particularly with the applications of radioimmunoassay in increasing the reproductive performance of domesticated animals.

Research in reproductive physiology has long been a strong area at Cornell. In the past, Cornell has hosted five international radioisotope training courses in animal research under the sponsorship of the IAEA and the US A.E.C. Within the College of Veterinary Medicine, a diagnostic endocrinology laboratory is devoted to the use and development of radioimmunoassays. The College also hosted a Research Coordination Meeting in Radioimmunoassay during the first week of July to discuss the current applications of RIA in reproductive studies.

## New Chief in Reproductive Studies

Peter W. Nathanielsz, M.D., Ph.D., was appointed Professor of Reproductive Studies and Chief of the Section of Reproductive Studies in the Spring of 1982. He is responsible for the clinical Reproductive Medicine service in the College's Teaching Hospital and the teaching of formal courses in the professional core curriculum, electives and continuing education. Dr. Nathanielsz will continue to carry out his own independent research programs in the study of fetal growth and development, maternal well-being and the initiation and control of normal and abnormal labor and delivery in both the human and animal species.

A graduate of St. Catharine's College, Cambridge, Dr. Nathanielsz earned the M.B. degree from the University College Hospital

Medical School, London and both the Ph.D. and M.D. degrees from the University of Cambridge. Prior to accepting the position at the New York State College of Veterinary Medicine, Dr. Nathanielsz was a Research Professor at the UCLA School of Medicine in the Department of Obstetrics and Gynecology and Director of the Laboratory of Fetal Physiology in the Department of Obstetrics and Gynecology at the Harbor/UCLA Medical Center.

He is the recipient of three National Institutes of Health research grants, a grant from the American Heart Association and a grant from the National Foundation of the March of Dimes. He has served on Scientific Advisory Committees of the NIH since 1979 and has an extensive bibliography of published books and papers. Dr. Nathanielsz is the author of a monograph on Fetal Endocrinology and the editor of a series entitled "Monographs in Fetal Physiology" published by Elsevier.

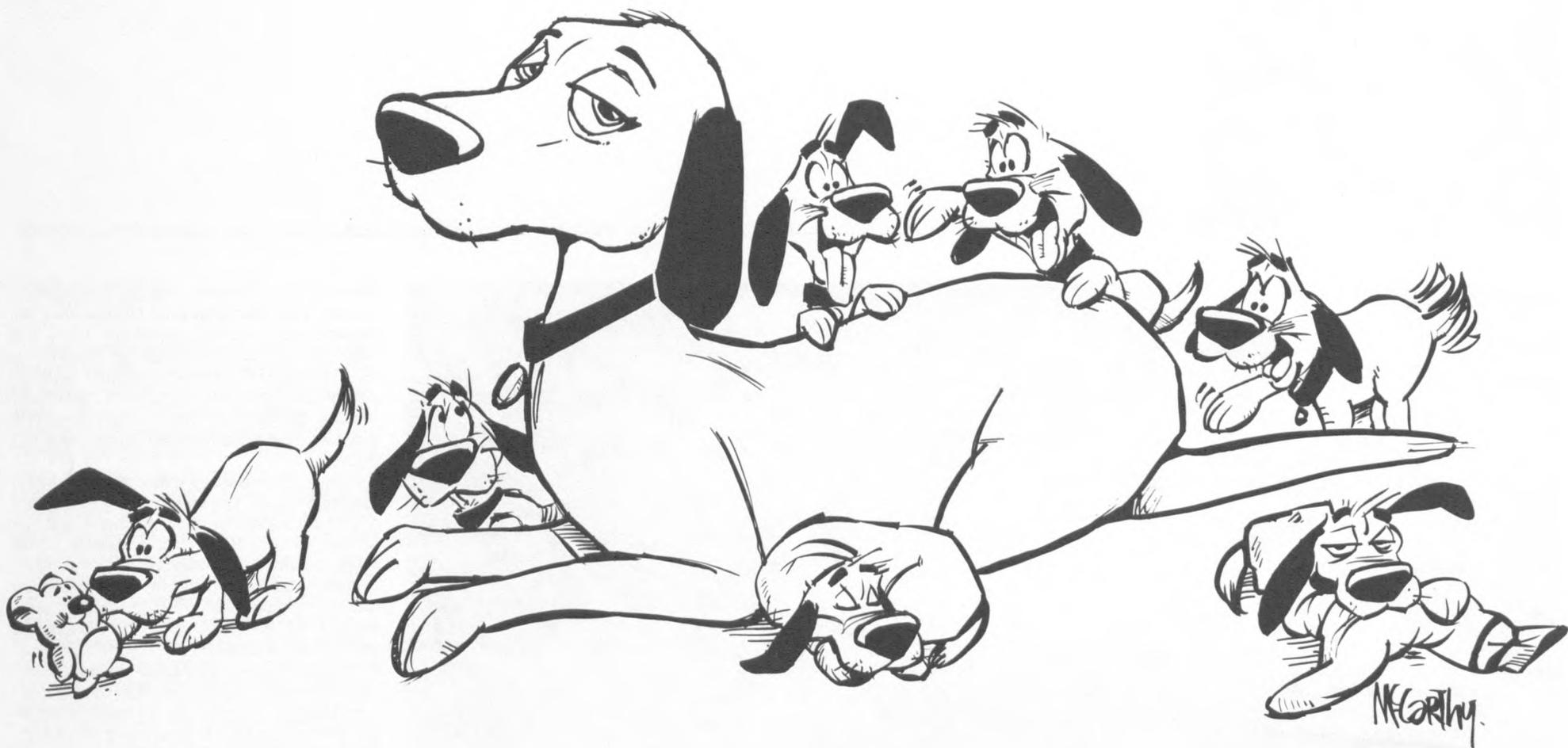


Peter W. Nathanielsz, M.D., Ph.D.

## RECOGNITION

Dr. Danny W. Scott, Associate Professor in Veterinary Medicine, has received the Ralston Purina Small Animal Research Award. The selection was based on Dr. Scott's work in the area of feline dermatology. Award evaluation and final decisions were made by the American Veterinary Medical Association, Council on Research.

Dr. Katherine Albro Houpt, Assistant Professor in the Department of Physiology, was elected Associate Professor with indefinite tenure at the May meeting of the Cornell Board of Trustees. Dr. William Charles Rebhun, Assistant Professor in the Department of Clinical Sciences, was also elected Associate Professor of Medicine with indefinite tenure at the meeting.



## Planned Puppyhood

By Daniel Simpson, '83

Most pet owners and veterinarians agree that a neutered dog or cat makes a much better pet. Unless you wish to use your pet for breeding, spaying of females and castration of males is in order.

Spaying of female dogs and cats prevents unwanted pregnancies and eliminates the problem of finding homes for so many puppies and kittens. Many of these animals end up as strays leading very unhealthy and precarious lives. Still more are left at local animal shelters where their numbers far exceed the number of available homes. As a result thousands of these animals are euthanized every year. In addition to controlling pet overpopulation, spaying dramatically reduces the incidence of mammary cancer later in life. Spaying also eliminates the occurrence of an often fatal uterine infection called pyometra. Custom-

arily, pets are spayed just prior to reaching puberty. Dogs are usually spayed between five and eight months of age and cats between five and six months of age. The surgical procedure, called ovario-hysterectomy, is quite safely performed by qualified veterinarians and usually requires only a short hospital stay.

People often overlook the role of the male pet in population control. While a female animal is limited in her production of offspring by a fixed number of heat cycles per year, the male can mate with nearly every receptive female in the neighborhood. The best surgical option in the male pet is removal of the testes by a procedure called castration. Castration, when done prior to onset of puberty, also prevents the development of some objectionable behavior patterns associated with mature males. Both cats and dogs will tend to roam and fight less when castrated early in life. Castration of male cats may also prevent the development of the urine marking behavior known

as spraying. This annoying habit damages furniture and rugs and the offensive odor is quite difficult to remove.

After neutering, some pets may gain a slight amount of weight. This is most likely due to decreased physical exercise associated with maturation and decreased sexual activity following surgery. This weight gain is easily managed by maintaining exercise and reducing feed intake.

There are less permanent but less effective alternatives to spaying. These include at least two different drugs that can be prescribed by a veterinarian. A canned dog food containing one of these drugs was recently approved by the FDA and is available by prescription through your veterinarian. These preparations are no substitute for spaying as they are only temporary and do not reduce the risk of cancer or eliminate the occurrence of pyometra. Many people feel they are able to confine and control their animals while in heat but this certainly is not a foolproof measure.

If your pet is bred and you do not wish her to have a litter, contact your veterinarian immediately. If you had planned to spay her anyway, now may be the time to proceed with surgery. If performed very early this ovariohysterectomy is no more difficult or dangerous to perform than an elective spaying. However, if you really do not want to have her spayed the veterinarian may elect to give an injection of an estrogenic compound that prevents implantation of fertilized eggs in the uterine wall. To be effective the injection must be given within the first twenty-four hours after mating. This injection is no guarantee against pregnancy and many of the drug's side-effects are deleterious to the dog's health.

Surgical neutering of both male and female pets makes good sense in the control of unwanted pregnancies. The additional medical and behavioral benefits are significant aspects to examine when considering spaying or castrating your pet.

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