A surgery team from the State University of New York Health Science Center at Syracuse joined with veterinarians at Cornell to correct the heart defects of a six-month-old puppy. For the story see page 4.
The loss of a beloved companion has prompted one woman's mission to find cures for terminal diseases in companion animals. When her cat, Toby, died of feline leukemia in 1985, Mrs. Florence V. Brunning of Rutherford, New Jersey, felt the loss acutely. Toby had been a special companion in a lively household full of dogs and cats and Mrs. Brunning, confined to a wheelchair since her teens, counted her pet and Mrs. Brunning, confined to a wheelchair since her teens, counted her pets as her only real family. Convinced that deaths like Toby's could be avoided with improved health care, Mrs. Brunning took action. She was already aware of Cornell's reputation for research into the etiology of animal diseases and for the successful development of life-saving vaccines against many diseases. She knew that work at Cornell was continuing on a new feline leukemia vaccine that could prove to be safer and more effective than any vaccine now on the market. So when Mrs. Brunning contacted Ralph Jones, Director of Public Affairs at the College of Veterinary Medicine, she had in mind a way to remember her beloved Toby and combat the feline leukemia that killed her pet and kills many thousands of cats each year. That was the beginning of the Toby Fund.

Thanks to the generosity of Mrs. Brunning and others who have made contributions, the Toby Fund is already a reality, supporting "research on deadly cat and dog diseases that at the time have neither cure nor preventative". Federal and state funding agencies do not support research into pet diseases, so the Toby Fund is particularly important to the continuation of work at Cornell. When cures or vaccines are discovered, the Toby Fund will receive the income, ensuring the fund's growth and continuation.

There is no compensation for the loss of a dearly loved pet; yet, the Toby Fund offers a positive way to remember a pet and contribute to the health and well-being of those animals. Contributions may be sent to the Toby Fund, Box B, New York State College of Veterinary Medicine, Cornell University, Ithaca, NY 14853.

Mrs. Brunning's determination to further this research took the form of a gift to the University of her home in Rutherford, New Jersey. Throughout her lifetime, she will continue to live in and care for her home, but she has the satisfaction of knowing that after she is gone, the proceeds from the sale of her house will go to the Toby Fund, keeping alive the memory of her pet and providing funds for research.

THE TOBY FUND

George C. Poppensiek, The James Law Professor of Comparative Medicine, College of Veterinary Medicine, Cornell University, began his career in veterinary medicine by serving as an intern in the Department of Medicine, School of Veterinary Medicine, University of Pennsylvania after having earned the Doctor of Veterinary Medicine (VMD) degree from that School in 1942. He then served for one year as Assistant Professor of Veterinary Science, College of Agriculture, University of Maryland, and was veterinarian for the university herds and flocks. Subsequently, he served for five years as Department Head for veterinary vaccine and antisera production in Lederle Laboratories Division, American Cyanamid Company, Pearl River, New York.

In 1949 he became Director of the Diagnostic Laboratory, College of Veterinary Medicine, at Cornell University and pursued graduate studies, leading to his appointment in 1951 as Research Associate in the Veterinary Virus Research Institute at Cornell. In 1954 he joined the research staff of the U.S. Department of Agriculture's Plum Island Animal Disease Center, leading to his appointment as Supervisory Veterinarian for Immunologic Investigations.

In 1959 he was called to serve as Dean, College of Veterinary Medicine, Cornell University. His stewardship in that position covered a period of 15 years. In 1974 he was awarded a faculty chair named The James Law Professor of Comparative Medicine, from which he will have retired in July, 1988.

In 1975, during a sabbatical leave, and after five months of intensive study in medical biostatistics and epidemiology at the State University Health Sciences Center in Syracuse, N.Y., he served as guest professor, University of Bern, Switzerland, associated with Professor Doctor Hans Fey, a world-acclaimed veterinary microbiologist and immunologist.

He served for a decade as Chairman, Board of Directors of The Cornell Veterinarian, Inc., a veterinary medical journal published continuously since 1911. Also he served for almost a decade as Scientific Advisor to The Harold Wetterberg Foundation, a New Jersey-based philanthropic foundation. He also served the College of Veterinary Medicine, Mississippi State University for eight years as an external examiner in microbiology and pathology.

He is a Certified Diplomate of the American Board of Microbiology, American Academy of Microbiology, and a Charter Diplomate of the American College of Veterinary Microbiologists, a Charter Fellow of the American Academy of Microbiology, a Charter Member of the American Society of Virology, and an Honorary Diplomate of the American College of Veterinary Preventive Medicine. Further, he was the first American veterinarian to be selected as an external member of the Polish Society for Veterinary Medicine, Polish Academy of Sciences, and the first American veterinarian to be elected an external member of the National Academy of Agronomy and Veterinary Medicine, Republic of Argentina. He also is an Honorary Member of the American Veterinary Radiology Society and a Fellow of the American Association for the Advancement of Science. He was elected to membership in Sigma Xi, Phi Kappa Phi and Phi Zeta, honorary scientific and scholastic societies, the latter being "the Phi Beta Kappa of Veterinary Medicine".

In 1984, he was recipient of the Centennial Medal of the School of Veterinary Medicine, University of Pennsylvania, and in 1985 recipient of the Centennial Medal of the College of Veterinary Medicine, Ohio State University.

He served the American Veterinary Medical Association on its Council on Research, and as AVMA appointee to the National Board of Veterinary Medical Examiners. In 1970-71 he served as President of the Association of American Veterinary Medical Colleges, Inc. He also served the National Research Council, National Academy of Sciences, as Chairman of the Committee on Animal Health from 1960 through 1980. From 1962-1967 he was chairman of the United States delegation to a joint U.S.-Argentina Commission on Foot-and-Mouth disease, operating under the aegis of the U.S. National Academy of Sciences and the Argentine Academy of Sciences. He has also served the Pan-American Health Organization in several assignments in Caribbean nations and in 1977 was selected to receive the XII International Veterinary Congress Award for "Distinguished Service to Veterinary Medical Science", given by the American Veterinary Medical Association.

He has been the author of more than 45 scientific or professional publications. In 1988 his "Class Notes on Foreign Animal Diseases" were requisitioned by the Canadian Department of Agriculture for use by each of its staff of 320 veterinary medical officers in field service.

He and his wife, Edith, residing in Ithaca, N.Y., have two children and five grandchildren.
A retirement celebration is planned to honor Dr. George Poppensiek and his wife Edie on June 16th. Contact Dr. Neil Norcross at the College of Veterinary Medicine by May 25th or call 607/253-3275 for more information.

A CONVERSATION WITH DR. POPPENSIEK

As Dr. George Poppensiek approached his retirement in June, Veterinary Viewpoints spoke with him about his career, the college, and what he sees for the future.

Veterinary Viewpoints: Other than your time as dean of the college, what point in your career do you consider to be the best?

Poppensiek: I think it would be the research in which I involved at the Plum Island Animal Disease Center, a station of the Agricultural Research Service of the U.S. Department of Agriculture. We worked on problems associated with highly transmissible diseases of food-producing animals and beasts of burden; diseases of international importance. One of the great advantages in working for the U.S. Department of Agriculture was that we could carry out research on large animals because the government could afford to buy enough animals to do quality research.

V. V.: Did you always want a career in research?

Poppensiek: Not originally. When I was going through veterinary school, I planned to go into large animal practice. So I set out to gain experience through an internship in medicine and employment at the University of Pennsylvania and then at the University of Maryland. After two years, I had too many unresolved questions about how to study animal diseases. That's what led me to come to Cornell as a graduate student.

V. V.: You were dean after Dr. William A. Hagan. How did you feel taking over from him?

Poppensiek: His were tough shoes to fill, but the backing of faculty made the transition smooth.

V. V.: Did Dean Hagan give you any advice before you started?

Poppensiek: When I arrived, Dr. Hagan gave me a sharp lead pencil. He said, "This is the symbol of your office. You'll notice it has an eraser on one end. That's because people make mistakes; even deans." How true!

V. V.: What was the biggest change in the College while you were dean?

Poppensiek: I was in the front office at a time when we were building a sizable faculty of scholars with all kinds of research and academic interests. The College really moved ahead in the research arena. Our College has always had excellent scholars, and although we've always been a leading institution in teaching and research, the earlier faculty was limited by modest funds for doing research. Early in my tenure, the National Institutes of Health recognized that there was one medicine, not either human or veterinary medicine; just one medicine! They would fund research in any institution that could compete. That's where the faculty of this College excelled and competed well! Because of the intellectual strength and leadership of our faculty it was easy to build on strengths. As we took advantage of the resources and our opportunities to develop a broad scholarly faculty, we simultaneously continued to attract good students. If one wants to see the sterling dimensions of Cornell, look at its graduates!

V. V.: There was another change in the College; women began entering the profession in increasing numbers.

Poppensiek: Yes, for a long time the nature of the work and attitudes that prevailed in the awesome task of selecting relatively small classes from an overwhelming applicant pool, limited the number of women becoming veterinarians. Also, we were given a quota by the University for the number of women we could accept, limited by the number of beds in the women's dormitories. When our Committee on Admissions selected more than the quota allowed (usually 2 or 3) we had to prepare appeals that would permit us to exceed the quota. Now that has all changed. The evidence is clear, and has been for a long time, that women in the profession are doing a splendid job.

V. V.: Do you foresee any changes or problems in the veterinary medical profession?

Poppensiek: My only concern is that we must be very careful not to abrogate our responsibility to agriculture. To serve rural America—the growers and producers of food-producing animals and beasts of burden—veterinarians of the future will have to be primarily managers of the sick or otherwise incapacitated.

V. V.: What do you think of the trend toward merchandizing in practices?

Poppensiek: If it means improving public relations, that's acceptable. If it means running a hardware store, that's a different story. It degrades the profession.

V. V.: What do you see for the College in the future?

Poppensiek: I see the College always as a preeminent developer of new knowledge; not exclusively in the research laboratory but also in clinical practice; in specialized clinical disciplines. I see it continuing as one of the leading institutions in the world where it will always attract scholarly faculty and students.

V. V.: Looking back on your career, would you do it all again?

Poppensiek: Oh, yes, without any hesitation! It has been a challenging, stimulating, fulfilling profession throughout my career. There's so much we don't know about life processes and the insults to those life processes. The vistas are still very fascinating and as long as the profession attracts the caliber of students that become practitioners, researchers, scholars and public servants, dedicated to their calling, the opportunities for professional service for reaching those vistas, will be unlimited.

Like the late Thomas Wolfe, I can say that "in a thousand places, the miracle has happened to me. It may never come again, but I have had the magic—what Euripides calls the apple tree, the singing, and the gold." I hope it will be like that for others who are beginning their careers in this fabulous profession. I envy them, applaud them, and wish them Godspeed.
HUMAN OPEN-HEART SURGEONS HELP SUSIE, THE "BLUE BABY" BULLDOG

Fifty-eight years after a dog helped medical science perfect procedures that have saved thousands of human "blue babies", open-heart surgeons returned the favor and attempted to repair the congenital defect of the heart of a new-born English bulldog at Cornell University's College of Veterinary Medicine.

An operation that is rarely attempted in dogs was performed recently by a surgery team of eight from the State University of New York Health Science Center at Syracuse. The doctors were invited to Cornell by veterinary cardiologist Dr. Sydney Moise to correct heart defects in Susie, a six-month old pup.

Susie had been born with a combination of four heart defects known as a tetralogy of Fallot. Together these defects caused Susie to suffer from cyanosis, or insufficient oxygen in the blood. Babies with this condition are sometimes known as "blue-babies" due to the appearance of their poorly oxygenated blood. Cyanosis caused Susie to faint whenever she became excited, made physical exertion impossible for her, and guaranteed a brief lifespan.

The four defects in Susie's heart were a ventricular septal defect, a hole smaller than a dime in the wall between the left and right ventricles of the heart; valvular stenosis, the failure of the pulmonic valve to open properly and send blood to the lungs; an overriding aorta, in which a malpositioned aorta was receiving blood from both the right and left heart; and a secondary defect known as right ventricular hypertrophy, or thickening of the right heart muscle.

In a six-hour operation, Syracuse cardiac surgeon Dr. Berkeley Brandt repaired the septal wall defect with a patch made of synthetic mesh and opened the right ventricular outflow tract and pulmonic valve. 

Surrounded by nurses, by-pass technicians, surgeons and other specialists including the consulting pediatric cardiologist, Dr. Frank Smith, Susie was getting the same state-of-the-art care the team gives infants. There was one difference: the Syracuse team had volunteered all their time and donated the use of the specialized equipment. A similar procedure on a human, including the hospital stay, costs around $15,000, Dr. Brandt estimated.

"Other than some excessive bleeding around the patch because of differences in anatomy, the operation went well," said Dr. Brandt as bypass technicians packed the heart-lung machine for the return to Syracuse. "She tolerated the by-pass better than we expected, and really bounced back."

In fact, Susie was off and on the heart-lung machine several times as her heart tried to take over from the machine. Dr. Moise was ready to re-start the heart with a pacemaker, but it was not necessary. At one point surgeons called to local hospitals for more protamine sulfate, the drug that reverses the effects of the heparin used to prevent blood clotting in the heart-lung machine.

The operation, which has a 90-percent success rate in humans and has been performed in much larger dogs, was given only a 50 percent chance of succeeding in the 24-pound bulldog puppy. Unfortunately, Susie died of circulatory shock the next day, 22 hours after she came off the bypass machine.

Correcting tetralogy of Fallot in dogs will probably never be a routine procedure in veterinary medicine because of the extraordinary expense, Dr. Moise noted. But other procedures in human surgery can be adapted to veterinary medicine, and that will bring the Syracuse team back to Ithaca.

A spare heart-lung machine from the SUNY Health Science Center will be stationed at the college's teaching hospital, and Dr. Brandt's team intends to offer their expertise in correcting more common heart defects in dogs. Among them are pulmonic stenosis, ventricular septal defects and subvalvular aortic stenosis. The Cornell clinic sees 40 to 50 such cases, in varying degrees of severity, a year, and many can be treated if we learn the latest procedures, Dr. Moise said. An example of one of these new procedures is called valvuloplasty. With this procedure a stenotic valve is dilated with a catheter that has incorporated a balloon. When inflated the balloon opens the way for adequate circulation. "Valvular pulmonic stenosis is a common congenital defect in dogs and with valvuloplasty, hopefully some of these animals can avoid major surgery and live a longer life", Dr. Moise said.

This new procedure is used in many infants with same defect. Dr. Frank Smith will be returning to assist with the valvuloplasty in several puppies needing correction. "We've now come full circle," Dr. Brandt said, noting that the first procedure for treating tetralogy of Fallot was demonstrated in a dog in the 1930's by Dr. Alfred Blalock, the Vanderbilt University pioneer in human cardiac surgery.

What could be the start of a beautiful relationship has benefits for human medicine, too.

"Surgical therapy is crucial in our field," said Dr. Smith, the pediatric cardiologist. "We want children to have the best chance of repair and recovery. With our experience operating on dogs and improving their lives, we may be able to move to more challenging and complex problems, and that will impact on our work with heart problems in children."

Dr. Frank Smith (seated), a consulting pediatric cardiologist, monitors Susie's echocardiogram prior to surgery. Dr. Sydney N. Moise (photo center), staff cardiologist, pointed out some of the differences between performing this diagnostic procedure on humans and animals.
READING YOUR HEART—CELL BY CELL

Love, horror flicks, and exercise may make your heart beat faster, but what really happens to a heart cell every time your pulse races? To find out, Dr. Robert Gilmour at the College of Veterinary Medicine is looking at individual heart cells and how they react during normal and abnormal heart rhythms. He does this by inserting a microelectrode into one cell of a cardiac tissue sample and recording that cell’s electrical activity. It’s like taking an electrocardiogram of a single cell. Over the course of his research, he’ll probe hundreds of cells until, finally, a complete map of the heart’s electrical activity will emerge.

What can one cell tell you about an entire heart? The way one cell reacts to electrical stimuli may answer questions on how the heart contracts normally and abnormally. Cardiac cells are excitable cells; they have a membrane potential and are selectively permeable to certain ions such as potassium. When there is more potassium inside the cell than outside, the ions leak out and the cells become negatively charged with respect to the outside. When the cell is electrically stimulated the charge is reversed from negative to positive because of an influx of sodium and calcium ions and the cell contracts. Normally, all of the heart’s muscle cells, and therefore the heart itself, contract approximately at the same time when a natural pacemaker in the heart sends out an electrical signal.

Gilmour, an associate professor of physiology, is looking at why, in this finely-tuned system, the heart produces abnormal heart rhythms, or arrhythmias. It could be that several pacemakers develop, or there is a possibility that the impulse from the natural pacemaker is breaking into many waves and cells are contracting out of sync as the waves reach them. There is no way to tell which is the actual cause of arrhythmias without knowing what the individual cells are doing.

For this reason, Dr. Gilmour has developed a model of the heart’s activity in which electrical impulses are deliberately fragmented into waves, a condition known as re-entry or circular movement of impulse propagation. His objective is to discover how re-entry works, how to stop it, and how drugs affect it. He also wants to determine if re-entry is related to other oscillations or rhythms in the body, such as circadian rhythm and biological rhythms. The information he gathers will be used to explain or predict how to slow, speed and stop cardiac arrhythmias. He may find it is possible to calculate the single movement in a cycle and the precise point in the heart where the application of an electrical signal would stop an abnormal rhythm.

Patients with chronic arrhythmias would be the first to gain from such knowledge. An implementable device might be developed for them that could deliver an electrical signal to the right point in the heart and correct the arrhythmia. Presently, arrhythmias are controlled by an electrical device that blasts the entire heart and while it is effective, it is only safe within a controlled clinical setting. In daily life, such a device could be fooled by a rapid heart rate into delivering an inappropriate shock to the heart, sending the heart into fibrillation, a lethal arrhythmia.

The Pew National Veterinary Education Program is a four-part program that seeks to strengthen colleges of veterinary medicine by assisting them in better understanding the broad changes that are occurring in health care and education and in preparing them to meet these environmental changes in a strategic fashion. Twenty-seven U.S. and four Canadian veterinary schools are participating.

Funding in the amount of $5.5 million is being provided by the Mabel Pew Myrin Trust, one of seven charitable funds in The Pew Charitable Trusts established by the children of Joseph N. Pew, founder of the Sun Oil Co. In addition to the week-long leadership conferences, The Pew National Veterinary Education Program will support the creation of a panel of experts to assess the state of veterinary medicine, institutional grants of up to $35,000 to each veterinary school to support the development or improvement of strategic plans for meeting the demands on veterinary medicine, and awards of up to $1 million to a minimum of three schools to help them put their strategic plans into effect.

The program is co-directed by Dr. William K. Pritchard, professor and former dean, University of California, Davis, School of Veterinary Medicine, and Dr. Edward H. O’Neil, administrative dean, University of North Carolina at Chapel Hill, School of Dentistry.

I LOVE N.Y. HORSE SYMPOSIUM

The Annual I LOVE N.Y. Horse Symposium will be held Saturday, October 29, 1988. The event is sponsored by the Cornell Student’s Horsemen’s Association and some of the topics and speakers will be: Colic Surgery, by Dr. Earl Gaughan, Respiratory Diseases, by Dr. Andrew Hoffman Necropsy, by Dr. John King Pre-Purchase Exam, by Dr. Geoff Tucker Neonatal Care and Tour of the Cornell Neonatal Care Unit, by Dr. Pamela Livesay-Wilkins. Other tentative topics will be Care of the Older Horse, Exercise, First Aid, Conditioning, and Artificial Insemination—Collection and Management. To receive more information, please write to: I LOVE N.Y. HORSES SYMPOSIUM c/o Cornell Student’s Horsemen’s Association 128 Morrison Hall Cornell University Ithaca, NY 14853.
NEW TOOL TO IMPROVE CURRICULUM

A tool to help improve veterinary education was announced at the March faculty meeting by Cynthia Hannah-White, a programmer-analyst on the staff of the College’s computer facility. The new tool is a computerized “curriculum map”, designed to assist the faculty by providing ready access to up-to-date information on the subject matter of the core courses in the curriculum.

The concept of the curriculum map was conceived by Dr. Roy Pollock during his studies of medical education. He discovered that both students and instructors might assume that the topic would be addressed by someone else. As the amount of information available and the number of faculty involved in each course continue to increase, the need for coordination becomes even greater.

The curriculum map is a computerized index to all the core courses in the curriculum. Last fall the faculty were asked to prepare topical outlines of each of the core courses. These were then entered into the College’s mainframe computer. Then each topic was indexed by the teacher’s name, species, organ system, physiologic or disease process, and causal agent (if any). When the system is completed this summer, any student or faculty member will be able to search the entire core curriculum in a matter of minutes from any of more than 100 terminals throughout the college.

A professor preparing to discuss mastitis in large animal medicine, for example, could request a search for mastitis. The computer would reveal that aspects of mastitis had already been discussed in bacteriology, pathology, and general medicine. The professor could then ask the computer to display the specific sections of the course outlines in which the topic was discussed. He or she would then be able to reinforce and build on the students’ prior knowledge, rather than repeating needlessly or skipping essential elements. An even better approach might be to search for “mammary gland”, which would find not only the topics above, but also where the anatomy of the udder and the physiology for lactation were discussed.

The curriculum map is no panacea for educational reform, of course. But it does provide the faculty with one more tool to give students the best possible education. Some work remains to finish entering outlines and to make the coding system simpler to use, but the system is expected to be fully operational in time for the fall semester. Several other colleges of veterinary medicine have already expressed strong interest in the program, once again following Cornell’s lead.

AS WE WENT TO PRESS...

As we went to press, what is believed to be the first endowed professorship in wildlife medicine in the U.S. was established by a gift from Dr. Jay Hyman ’57. At Cornell, the Hyman Professorship will be devoted to research and teaching about wild animals and birds of all kinds. See the next issue of Veterinary Viewpoints for more information.

DR. JACOBSON AWARDED FOGARTY FELLOWSHIP

Richard Jacobson, associate professor of immunoparasitology at the College of Veterinary Medicine, has received a Senior International Fellowship from the Fogarty International Center, National Institutes of Health. With the award, Dr. Jacobson is working for a year with Dr. Ian Wright, head of the protozoology section of CSIRO (Commonwealth Scientific and Industrial Research Organization), Division of Tropical Animal Science in Indooroopilly, Queensland, Australia. Dr. Wright and his research group were among the first to isolate and purify antigens which render significant resistance to a parasitic infection. In his research at CSIRO, Dr. Jacobson is probing the effect of parasitism and vaccination on the “circuitry” which regulates the immune system in mammals.

Vaccination against most parasitic infections has proved to be exceedingly difficult. The host usually does not develop protective immunity to initial or subsequent infections. Parasites often evade or subvert the host immune response which results in chronic and debilitating infections. The goal of Dr. Jacobson’s research is to broaden our understanding of the complex interactions which allow the parasite to remain within the host in the face of a fully competent host immune system. By using the models of blood parasitites, Babesia spp., in cattle and mice, he hopes to devise means to circumvent immunosuppression or poor responsiveness of the host to vaccination.

At Cornell, Dr. Jacobson has worked successfully for several years developing automated serologic assays for the detection of antibodies to several agents causing disease in cats and cattle. He joined the faculty of the College of Veterinary Medicine in 1977, after two years as a NSF National Research Council Postdoctoral Research Associate in the Immunoparasitology Division of the Clinical and Experimental Immunology Department, Naval Medical Research Institute in Bethesda, Maryland. Dr. Jacobson earned his M.S. (1967) and Ph.D. (1975) from Montana State University where he also conducted research in parasitology at the University’s Veterinary Research Laboratory.

The Senior International Fellowship Program of the Fogarty International Center provides opportunities for study or research in a foreign institution by biomedical, behavioral, or health scientists who have established themselves in their chosen career in the U.S. The Senior International Fellowship is intended to enhance the exchange of ideas and information about the latest advances in the health sciences; permit U.S. scientists to participate abroad in ongoing study or research in the health sciences; and improve the research, educational, and clinical potential of the U.S. institution. Fellowships are awarded for a period of 3 to 12 months.
EXPANDING HORIZONS OF VETERINARY MEDICINE SUMMER GRANTS 1988

With $2,000 grants from the college’s “Expanding Horizons” program, six veterinary students will have the opportunity to explore novel and nontraditional employment opportunities at home or abroad during the summer of 1988. According to the program’s director, Associate Dean S. Gordon Campbell, selection of the students is based upon the purpose to which they would put the grant money and its potential for uncovering new career possibilities for the applicant and future veterinary graduates. Says Campbell, “Our students have exceptional talents and goals that could benefit the profession and society as a whole. The Expanding Horizons program is one way we encourage them to use their own initiatives to identify new or non-traditional veterinary careers.” All students in first, second, and third years who are in good academic standing are eligible for the grants.

For the summer of 1988, the program students and their projects are: Byron J.S. de la Varre, exotic animal medicine; Nancy Erickson, white muscle disease in lambs in Morocco; Richard S. Goldstein, proboscis monkeys in Sarawak; Janiene Liciardi, marine mammals and endangered species; Yvonne Oppenheim, Hoffman’s two-toed sloth; and Steven A. Osofsky, wildlife conservation.

This is the second year the Expanding Horizons program has supported a summer of study for students. In 1987, five students received funding for a diverse group of projects:

Steven Osofsky, ’89, worked with Dr. Melody Rodke, wildlife veterinarian for the state of Florida, who is trying to prevent the extinction of the Florida panther. Osofsky plans to use his D.V.M. degree in the field of wildlife conservation, involving himself in conservation projects in the field as well as in zoos. As a veterinarian with interests in behavior and ecology, he hopes to be able to help with specific problems affecting individual animals as well as with dilemmas facing whole populations, whether captive or wild. In past summers, he studied the genetic management of captive populations while at the National Zoo in Washington D.C., and traveled to Kenya on a project examining mechanisms of heat regulation in the African Elephant. As a Harvard University Benjamin A. Trustman Travelling Fellow, he traveled around the world for a year comparing management techniques in European zoos, and observing wildlife species in their natural habitats in Kenya, Tanzania, and Rwanda. Steve is interested in playing a role in the continued expansion of zoo-wild cooperation in conservation efforts.

Will Falcheck, ’88, chose to spend his summer working on his business skills. It is his belief that there is a need for veterinarians knowledgeable in the business world, not simply for those with an ability to function on a basic accounting level, but rather for veterinarians with a comprehension of the intricate workings of marketing, development and consulting. Within a business framework, veterinarians would serve not as clinicians or specialists, but as crucial links between applied medicine and corporate enterprise. To achieve this goal, Falcheck worked with representatives from The Upjohn Company, Kalama­zoo, Michigan, observing management practices and product development.

Robert A. Duhaime, ’89, spent her summer working in veterinary programs and clinics on The Navajo Reservation in Arizona and New Mexico. She was able to see how veterinary medicine is practiced on a reservation where a large domestic animal population is free-ranging and consequently, where adequate herd health management can be difficult. It was also an opportunity for Duhaime to work in a professional capacity where veterinarians are few in number.

Falcheck worked with representatives from The Upjohn Company, Kalama­zoo, Michigan, observing management practices and product development.

Mary Frances Hoover, ’90, used her funding to continue her work with the New York State Department of Environmental Conservation on an ecotoxicology project investigating the environmental contamination of the Mohawk Nation at Akwesasne. According to Hoover, industrial pollution has posed potentially serious threats to the environmental, biological, health and sociocultural balance in this Native American Community. Hoover with Dr. Ward Stone of the DEC, examined plants and wildlife to monitor the contamination of local environments. Work was also done to determine the potential effects that toxics are having on the health of both animal and human populations in the area.

Richard Panzer, ’88, enrolled in Cornell’s FALCON program in Mandarin Chinese. An intensive, nine-week course taught five days each week with up to six hours of instruction per day, the first semester of the FALCON program gives students “survival level” skills in a language. Following graduation, it is Richard’s plan to study acupuncture at Huazhong Agricultural University in Wuhan, People’s Republic of China, and a knowledge of the language is vital to his education and to his experience of the culture. He hopes to offer his acupuncture skill as an adjunct to his practice of conventional western medicine.
In the Teaching Hospital, surgeons work to repair a torsion in the large intestine of a horse. Research supported by Travers funding may further improve the survival of patients with this problem.

**EQUINE RESEARCH RECEIVES TRAVERS FUNDS**

With $45,000 raised through the efforts of the Travers Committee during the 1987 Travers Celebration in Saratoga Springs, four equine research projects have been funded at the College.

Dr. John Lowe and Dr. Pamela Livesay-Wilkins received $10,000 for a study of the "Postischemic Reperfusion Injury of the Equine Large Colon." Strangulating intestinal obstruction (twisted intestine) is a common cause of colic and the obstruction damages or kills tissue by disrupting the blood supply to a section of the intestine. Damage can also occur following surgical correction when the reintroduction of oxygen to the tissues (reperfusion) may produce toxic metabolic products. If the damage done during this period can be decreased or prevented, survival of the colic patient will be improved. In order to evaluate the influence of various medical treatments, Dr. Lowe and Dr. Livesay-Wilkins are developing a model of strangulation obstruction which closely resembles clinical cases of twisted large intestine. This research can be used to evaluate drugs likely to favorably modify the reperfusion period that follows in a surgically corrected twisted intestine.

Dr. Normand Ducharme and Dr. Susan Hackett received $8,000 for "A Study of the Sources of Extrinsic Innervation of the Equine Larynx Using Horseradish Peroxidase." This study is designed to positively identify the neurons that innervate the equine larynx. This information will provide the basis for further research into the pathogenesis of idiopathic laryngeal hemiplegia (roaring), a condition in which half of the larynx (windpipe opening) is paralyzed due to degeneration or dying back of the nerves which supply the motor innervation to the larynx. This is the most common upper respiratory disorder in performance horses. It leads to respiratory noise and poor performance toward the end of a race or other strenuous workout. Current information on the nerve lesions and possible pathogenesis of laryngeal hemiplegia implicates nerve cell bodies in the brain stem as the causative factor. Therefore, it is critical to localize and identify these neurons. Through the use of horseradish peroxidase as an intraneuronal marker, Drs. Ducharme and Hackett will attempt to identify the neuronal cell populations involved with normal laryngeal innervation as well as those forming peripheral nerves which could later be used in re-innervation studies.

Together, Dr. Richard Hackett and Dr. Ducharme will study "Laryngeal Function in Horses Exercising on a High Speed Treadmill" with $19,000 from the Travers Fund. A study of laryngeal function in resting horses is nearing completion and part two of this project will be the assessment of laryngeal function by endoscopic (fiberoptic) examination and by measurement of trans-laryngeal pressures in horses exercising on a high-speed treadmill. Resting and exercising data will be compared.

With $8,000 in funding, Dr. Kathleen Freeman with co-investigator Dr. Rory Todhunter, will conduct a "Parallel Study of Synovial Fluid and Synovial Membrane Morphology with that of Cartilage and Subchondral Bone in Equine Joint Disease." About one-third of lamenesses are caused by joint disease. However, diseases which affect these joints are not always clearly separable since each may progress to or occur at the same time as degenerative joint disease. In their study, Drs. Freeman and Todhunter will investigate and assess methods to recognize early signs of joint disease and the accuracy of prognostic techniques.

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**VETERINARY VIEWPOINTS**

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