

Veterinary World

FALL 1998



Special Report: Equine Medicine

PORTABLE LUNG FUNCTION TEST COULD BE A BREAKTHROUGH

by Jim Grisanzio

The singular mission of Dr. Andrew Hoffman's research and clinical practice over the past five years has been to gather all that has been learned about the relationship between racehorse performance and pulmonary function and figure out a relatively simple way for any veterinarian to diagnose lower airway problems.

See COPD, page 8

EDITOR'S NOTE: This issue of Veterinary World is devoted to the pioneering clinical work and research that Tufts University School of Veterinary Medicine is doing to advance the field of equine medicine. From caring for critically ill foals and promoting the well-being of older horses, to providing the latest techniques in equine surgery and identifying performance problems in racehorses, Tufts has established itself as a leader in equine care.



DEAN

by Philip C. Kosch

OUR SERVICE TO HORSES AND TO THE EQUINE COMMUNITY

This issue of *Veterinary World* illustrates some of the progressive work being done at Tufts to improve the health of horses and the economic vitality of the equine industry.

Through our Hospital for Large Animals, Tufts School of Veterinary Medicine, from its inception, has focused on improving the quality of equine practice in New England. As a referral hospital and consultation service for equine veterinarians throughout the Northeast, we are proud of our contributions to the equine community.

Tufts' equine faculty have distinguished themselves as leaders in the development of several novel approaches to the diagnosis and treatment of medical and surgical diseases of the horse. Internists and surgeons have worked together to pioneer diagnostic procedures using a high-speed equine treadmill, including lameness examinations, endoscopy, exercise (fitness) testing and respiratory function testing. Tufts also pioneered the use of nuclear medicine in the horse. These innovations and the high caliber of our clinicians have earned Tufts a national and international reputation for excellence.

These efforts have resulted in a much better understanding of bone remodeling disease as a cause of lameness; a new understanding of stress fractures and a method to prevent potentially catastrophic breakdown injuries through early detection; a new understanding of the dynamic movement of upper airway structures, which has resulted in numerous changes in the diagnosis and treatment of common problems with these structures; the early detection of lung disease, which is a significant impairment to athletic activity in horses, and the realization that many horses are just not fit enough to run, and the role that plays in exercise intolerance or poor athletic performance.

Tufts' Cornelius Thibeault Equine Outpatient Clinic, Marilyn M. Simpson Neonatal Intensive Care Unit and Issam M. Fares Equine Sports Medicine Program have the very latest technology to diagnose and treat an increasing number of cases. Our services are in growing demand, and we strive to satisfy the expectations of our well-educated clients and their referring veterinarians.

Horses deserve the best, and Tufts strives to provide the best equine health care available through our hospital and clinics as well as through our graduates going into equine practice.

As a relatively new dean at Tufts and as a veterinarian who spent a number of years investigating equine respiratory function, I can't say enough about my admiration for the pioneering contributions made by our equine clinicians — both past and present faculty.

...

The School of Veterinary Medicine mourned the loss of a longtime friend this spring. James B. Moseley, a member of the Board of Overseers, died on April 9, following a valiant multi-year battle with cancer. Jim, a passionate horseman and national leader in the equine industry, was chairman of Suffolk Downs Race Track. He served as a state legislator in the early 1970s and worked actively shoulder-to-shoulder, I'm told, with former Tufts President Jean Mayer in the mid-70s to establish our school. Throughout our history, Jim was an exceptional advocate and a true pioneer. He will be missed.

Phil Kosch

DR. STEVEN ROWELL HONORED BY STATE



At a State House ceremony, the Massachusetts Department of Public Health honored Dr. Steven Rowell, V83, and the Tufts Veterinary Diagnostic Laboratory

(TVDL) for their considerable contributions to public health.

Rowell, director of the TVDL, accepted the 1998 Hero of Public Health award during the department's annual Public Health Day in April.

"This is a great honor," Rowell said. "Our laboratory at Tufts has been involved in a number of public health issues over the years, and these efforts are the embodiment of true collaborations of a private veterinary school with state agencies, particularly the Department of Public Health."

Tufts' Veterinary Diagnostic Laboratory is a \$4 million operation that serves as the veterinary disease-monitoring and diagnostic arm for the state.

Rowell, who sits on the state's Rabies Advisory Board, has been pivotal in coordinating Tufts' oral raccoon rabies vaccination program, which has prevented the spread of raccoon rabies to Cape Cod."

On the cover:

Dr. Andrew Hoffman is working toward early diagnosis and treatment of respiratory problems in horses.

Photo by Mark Morelli

TUFTS UNIVERSITY

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Executive Editor Dr. Philip C. Kosch, Dean,
School of Veterinary Medicine

Editor Karen Bailey

Editorial Adviser Shelley Rodman, Director,
Veterinary Development

Contributors Jim Grisanzio, Tamara Gull, V98,
John LoDico,
Beth Wolfensberger Singer

Graphic Designer Julie Steinhilber

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CAMPUS

Your veterinary education really means something, Powell tells graduates



Dr. Ray Powell, V85

At left: Members of the 16th graduating class at Tufts School of Veterinary Medicine. With the Class of '98, the school's alumni body now numbers 1,000.

Photos by Chris Christo

"There is not a day that I don't apply something I learned at Tufts," Dr. Ray Powell, V85, New Mexico's commissioner of public lands, told the 77 new veterinarians who graduated from Tufts this year. "The skill set I learned to solve pressing, real-world problems has paid off over and over again for me, and it will for you wherever you go."

Powell is president of the Western States Land Commissioners Association and a member of the U.S. Department of Agriculture's Advisory Committee on Foreign Animal and Poultry Diseases. He was the first alumnus to address a Tufts veterinary school graduating class.

Powell has practiced veterinary medicine in Albuquerque, N.M., and has served as special assistant to Gov. Bruce King for environment, natural resources, health and recreation.

"It was a privilege to have a leader in public health address our veterinary students this year," Dean Philip C. Kosch said. "With his involvement in the environment, energy, natural resources and public health, Dr. Powell has distinguished himself as a national leader in public policy."

PARENTS & FAMILY DAY '98



More than 125 veterinary students, their families and friends turned out for the annual Parents & Family Day at the School of Veterinary Medicine's North Grafton campus March 28. Above, Jennifer Collins, V99, left, registers with her guest, Bert Terrell, for the day's activities, including campus and hospital tours, student presentations on the Pet Loss Support Hotline and Equine Neonatal Intensive Care Team, an alumni career panel and a talk by Dr. Linda Ross, hospital director, on the fourth-year clinical experience.

Photos by Chris Christo

CAMPUS

Role-playing makes better clinicians



Dr. Robert Murtaugh, professor of medicine, helped develop the Standardized Client Interview program. Photo by Mark Morelli

Think you were nervous the first day of your new job? Well, think about veterinary students on their first day of clinical rotations when they interact with clients and sick animals for the first time — all under the watchful eye of their professors.

Now that's pressure.

But a new program at Tufts School of Veterinary Medicine — one of the first of its kind in veterinary medical education — is helping students excel at an important but often-overlooked aspect of the profession.

The program — known as Standardized Client Interview — is part of the clinical skills course students

take in their second year and is repeated as a free-standing course requirement in their third year. Trained health care professionals are brought in to act the role of a client bringing a sick or injured animal to the veterinarian. It could be a dog or a cat or a horse or a snake. Although there are no animals as part of the exercise, the clients present a standardized case to each student, who then must ask questions to obtain specific information for an accurate history and diagnosis.

The "clients" observe and interact with the students for the first half hour. Then during the second half hour, the roles are reversed, and the client gives feedback to the students about their rapport, the accuracy and appropriateness of their questions, their non-verbal communication skills and their medical history-taking skills.

"Using these standardized case histories, we are able to quickly evaluate the skill level of students before they get into the clinic," said Dr. Robert Murtaugh, professor of medicine, who helped develop the new course. "We expect the students to ask certain questions, and the clients will respond with certain answers, about a horse with lameness, for example, or a dog with diarrhea. For the students, there's a behavioral aspect and a content aspect to this interaction."

The Standardized Client Interview program has been offered at Tufts for two years and is funded by Fort Dodge Animal Health, a veterinary pharmaceutical company based in Overland Park, Kan.

"Just as in any other business, focusing in on client priorities and needs and gaining personal rapport is essential to being a successful veterinarian," said Dr. Arne Zislin, manager of professional services at Fort Dodge Animal Health. "So getting specialized training in client interaction is invaluable."

The concept of role-playing is common in medical education, where a nurse acts out symptoms and a medical student takes the history and examines the patient. But the technique is new to veterinary medical education.

The feedback has been good on all fronts, and the use of the technique to teach and evaluate clinical skills is clearly successful, according to Murtaugh. "We are the only veterinary school in the country that I am aware of that does anything like this," he said. "The student learns by doing. This is an active process."

"Clinical skills are obviously crucial to being an effective veterinarian, but equally important is how effectively our students interact with clients," said Dr. Philip C. Kosch, dean of Tufts School of Veterinary Medicine. "A good client interaction means that the clinician not only gets all the necessary information to aid in an accurate diagnosis, but it also helps foster an ongoing professional relationship."

Veterinary students appreciate the course — especially just before they enter the clinics.

"Now that I am on clinics, I can really see the value of the program," said Carol Macomber, a fourth-year Tufts student.

From birth to old age, care is tailored to the stages of life

If it's spring, you'll find newborn foals at the Hospital for Large Animals.

"This has been a record year for us," said Dr. Mary Rose Paradis, associate professor of medicine. "We saw approximately 60 sick foals this year and had a greater than 75 percent survival rate, which is very good, considering how very sick these foals are when they arrive at Tufts."

Paradis directs the Marilyn M. Simpson Equine Neonatal Intensive Care Unit, which cares for critically ill newborn foals, provides a teaching experience for fourth-year veterinary students and engages in scientific inquiry.

A special volunteer team — veterinary students, pre-veterinary students, technicians and people from the community — is trained each year to sit with the foals to provide round-the-clock nursing care during their hospital stay.

*Stories by Jim Grisanzio
Photos by Mark Morelli*



1998 was a banner year for babies at the Marilyn M. Simpson Equine Neonatal Intensive Care Unit, says its director, Dr. Mary Rose Paradis, front.

"One volunteer, Rita Lamont, comes religiously every Saturday during foaling season, driving 90 minutes each way," Paradis said. "She is a former client who brought her sick goat to the hospital many years ago. During those visits, she saw all the work that was involved with treating the foals, and she became interested in helping. She is a wonderful person to have with the foals," she said.

"Rarely does a foal come into the hospital with one problem," Paradis said. "Most have multiple problems and concerns, from infections to nutrition." Veterinary students learn to observe clinical signs, interpret laboratory data and design treatment plans in conjunction with the clinicians. "The foals' response gives students immediate feedback," Paradis said.

SURVIVING PNEUMONIA

In addition to their clinical work, veterinarians at the neonatal unit also engage in scientific inquiry.

Under the auspices of the Dorothy Russell Havemeyer Foundation, Paradis and several Dorothy Havemeyer Postdoctoral Fellows, have been able to investigate the effectiveness of various treatment protocols, improve survival rates for critically ill foals and assess the long-term impact of various diseases in the foals that survive.

Dr. Daniela Bedenice, a Dorothy Havemeyer fellow and current first-year resident in large animal medicine, developed a computer database for the 330 foals treated at the neonatal unit from 1990 to 1998. Bedenice is now using the data to

See TRACKING page 6

Off to the dentist

What do you do for a horse with an aching tooth? You call the dentist.

Tooth disease is widespread in the equine population, resulting from age, wear, trauma and injury. At Tufts' Hospital for Large Animals, veterinarians are teaming up with surgeons from Tufts' School of Dental Medicine in Boston to provide the latest in equine dental care, including root canal therapy.

"Historically, when a horse's teeth have become infected, you have to remove them," said Dr. Carl Kirker-Head, a veterinary surgeon. "But the cheek teeth really can't be successfully pulled because of space considerations, so what we have to

do is a tooth repulsion surgery, which means we make a hole in the bone over the tooth root through which we remove the tooth."

This surgery, although quite common, is traumatic for the animal and requires a lengthy recovery. The horse also needs lifelong routine dental care to ensure that the other teeth remain aligned.

Recent studies have found that up to 50 percent of horses that go through tooth repulsion surgery suffer complications, and 10 percent of them require a second surgery.

An alternative to tooth repulsion surgery is endodontic — or root canal — treatment, a procedure in which the nerve and pulp of the infected

tooth are removed and replaced with a filling. The tooth is left intact. Tufts has been one of the leaders in this field and has used endodontic therapy for a number of years.

Tufts equine veterinarians use a team approach to treat equine dental problems. The team includes a veterinary equine surgeon, veterinary dentist Dr. Laura LeVan and Dr. David Russell, assistant dean for clinical affairs and assistant professor of restorative dentistry at Tufts School of Dental Medicine in Boston.

"It has to be a team effort because the surgical tools are specialized, and it's nice to have the dental expertise, both human and veterinary," Kirker-Head said.

TRACKING THE PROGRESS OF NEONATES

Continued from page 5

review all the cases in which foals had pneumonia, with the goal of learning the best methods for successful treatment of the condition. Bedenice and Paradis will be looking at the long-term outcome of foals that survived severe pneumonia: Do they perform well as adults or is there permanent damage to the respiratory track?

One case they will follow with much interest, Paradis said, is that of Irish Miracle, a foal that had severe pneumonia and a grave prognosis. The foal survived, and when she came back to the hospital for a check last year as a yearling, "she looked remarkably like a normal yearling," Paradis said.

In another project that will use Bedenice's database, Paradis and Dorothy Havemeyer fellow Dr. Jessica McCoy, V98, will explore the outcomes of horses that had septic arthritis, a potentially crippling ailment, as foals. They will contact the owners of those foals to determine the horses' performance as adults.

Follow-up lameness and radiographic examinations will be conducted at Tufts.

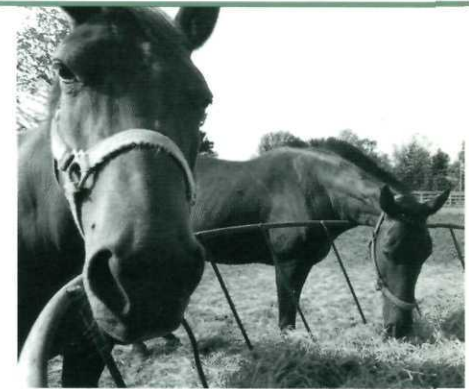
LIVING LONGER?

Paradis' interests tend to go to the age extremes of the equine population — from foals to geriatrics.

"Horses appear to be living longer," Paradis said. "Owners are taking better care of the animals and are keeping them longer. Nutrition and veterinary care have continued to improve over recent years.

"We are now seeing many 20-year-old horses, some 30-year-olds and the occasional 40+ year-old horse in the hospital," Paradis said. "These animals are long-term companions for many people, and owners want to do whatever is possible to provide the appropriate care for them."

To help determine the health care needs of the elderly horse, Paradis and her colleagues are delving into the records at Tufts' Hospital for Large Animals to identify the



kinds of illnesses for which older horses are being treated.

"Some of the problems we see in the older horse are similar to those we see in older humans — arthritis, poor teeth, endocrine abnormalities and chronic obstructive lung disease," Paradis said.

"It is my hope to establish an Elderly Equine Center at Tufts where we can combine the talents of our faculty in a multidisciplinary approach to look at the needs of the older horse, including arthritis, pulmonary disease, nutrition, dentistry and general preventive medicine."

Targeted antibiotics, 'standing surgery' are effective tools

When you or your animal gets sick and needs antibiotics, the doctor or veterinarian generally prescribes systemic antibiotics that circulate through the entire body. The problem with that kind of antibiotic therapy is that it doesn't necessarily send the medication to the point of the infection or injury in the desired concentration. And because of the horse's size, it's extremely expensive to achieve that desired concentration.

So researchers have come up with targeted antibiotics, a therapy used in human medicine for more than a decade but only recently in equine medicine.

"The idea behind it," said Dr. Carl Kirker-Head, associate professor of surgery at Tufts School of Veterinary Medicine, "is instead of introducing antibiotics orally or intramuscularly in large quantities, which has potential drawbacks in terms of cost and allergies and perhaps upset stomachs and diarrhea, is to introduce large quantities of antibiotics at the scene of the crime — at the injury site or at the infection site."

Historically, if a horse stepped on a nail, for example, and contracted an infection of the coffin bone, the equine surgeon would go in and clean up the wound, put the foot in a cast and put the horse on systemic antibiotics.

"Now we can take our antibiotic, mix it with a carrying agent and implant it during the surgery," said Kirker-Head, section head of large animal medicine and surgery at Tufts' Hospital for Large Animals. "That mechanism releases large quantities of antibiotics slowly over a period of days and weeks right where we want it."

Kirker-Head mixes the antibiotic in a bone cement called polymethylmethacrylate. The only disadvantage is that the cement generally has to be removed, so researchers are trying to

identify a suitable, absorbable carrier that will dissolve over time, negating the need to do the second surgery to remove the cement.

"This system reduces the cost of antibiotic therapy massively, especially when you consider a large horse," said Kirker-Head. "You generate extremely high levels of antibiotic at the location where you need it. You can't do that with systemic antibiotics."

Kirker-Head and his research team recently conducted a study to determine what levels of the antibiotics were present in the horse's blood and urine and at the injury site following implantation of the antibiotic and cement.

"What we found," he said, "was that you don't get large quantities of antibiotics in the blood, which is good.

That's what we want because you don't have to worry about the adverse reactions from systemic administration of antibiotics."

SURGERY STANDING UP

Kirker-Head and his orthopedic surgical team also are pioneering the use of so-called "standing surgeries," which result in a much quicker recovery and lead to a reduced risk of infection.

"In the traditional surgery, you still have to administer general anesthesia, but we are perfecting the use of the procedure in the standing animal with a local anesthesia," Kirker-Head said. "This is being attempted at only a few institutions."



Dr. Carl Kirker-Head's work with standing surgery to repair shin bone fractures reduces both the risk for the horse and the cost for the owner.

The advantages are clear: Reduced risks associated with general anesthesia and substantially reduced costs. And the procedure is done on an out-patient basis.

"We are not only using standing surgeries with arthroscopy but also in other orthopedic surgeries," Kirker-Head said, including osteostixis, in which shin bone fractures are repaired by drilling small holes through the bone to the marrow to improve blood supply to the fracture site. "We have been doing this for a few years now, but again, only a few large veterinary hospitals are doing it on the standing horse under a local anesthetic."

COPD stealthily affects performance

Continued from page 1

What he's created — a lung function test-in-a-box that can be administered at the track or in the stable — has the potential to be a breakthrough diagnostic for performance horses because it can identify airway problems before they become chronic.

"For hundreds of years we have known that horses' airways are sensitive to a lot of things and develop an asthma-like condition called chronic obstructive pulmonary disease (COPD)," said Hoffman, assistant professor of large animal medicine and director of the Issam M. Fares Equine Sports Medicine Program at Tufts University School of Veterinary Medicine. "Anyone who works with horses can recognize this clinically because the horse has difficulty breathing."

But what veterinarians have found more recently is that for every horse with severe COPD, there are many more that suffer from a less-severe form of pulmonary disease. And many of those horses — lacking overt clinical signs of pulmonary disease — also are experiencing performance problems.

Hoffman's research has focused on early detection of COPD so that it can be treated before it becomes more serious. His new COPD field test provides the technology to do just that.

"Many veterinarians are still uncomfortable with passing a tube into a horse's nose and bronchial tube and into the lungs to flush the lungs with sterile saline [a technique called lavage] to determine if the horse has COPD," Hoffman said. "There had to be a better way."

There is.

"It's a simple test, especially with the speed of modern computers," Hoffman said. "We designed a system that compares movement of

the chest and abdomen (breathing effort) to the kinetics of air movement in and out of the nose (flow). In a normal horse, effort and flow match completely. To test the sensitivity of the horse's airways to allergens and dust, a histamine mist is delivered to the airways, and the sharpness of the response is measured.

"But if you introduce histamine into the airways, you find that a horse with COPD reacts very quickly, and the signals for breathing effort and flow don't match up," he said. A very complex mathematical model is used to analyze the results, which are displayed quite simply.

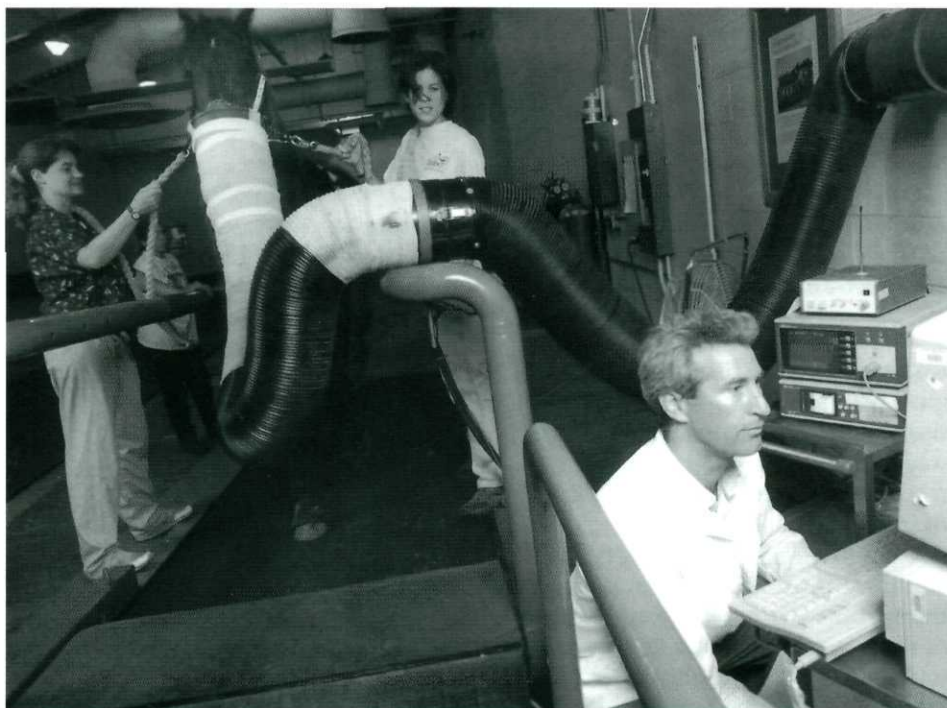
"Many owners will complain that their horses don't tolerate exercise well," Hoffman said, "and it turns out that many of these animals are not intolerant to exercise, but they have small airway disease that impairs their ability to exchange gas — principally oxygen — in the lungs. It's a very mild condition, so for many years it was not recognized."

About 15 years ago, a researcher in Canada found that these horses' small airways were inflamed, even at rest — a condition similar to asthma in people.

"This process is really subtle and begins slowly," said Hoffman. "First a horse loses a microsecond in a race. Then it gets worse, and the horse loses one or two seconds. Then they cough. And then they get mucus in their airways and cough more. Then they have serious exercise intolerance. And then they get it really bad and go into an asthma attack, which veterinarians can clearly see and treat."

Traditionally, these horses were treated with steroids, which cleared the condition, but only temporarily.

"Human medicine has really led the way here," Hoffman said. "Physicians have recognized that people with asthma had chronic,



Dr. Andrew Hoffman, at computer, conducts a lung function test at Tufts' Issam M. Fares Equine Sports Medicine Center.

subclinical inflammation and needed to be on anti-inflammatory medicine all the time. Then they wouldn't have the really serious asthma attacks."

Veterinary medicine now uses that same treatment protocol for horses. However, many veterinarians in the field still are not aware of early COPD or have no easy way to test for it, he said. "Every veterinarian should have access to the lung function test because the test will pick up airway disease."

When a lung function test is done at Tufts' Hospital for Large Animals, the veterinarian fits the horse with a mask and introduces pulsations of air into the lungs, challenging the airways to see how they react. If they do, it is relatively certain that the animal has COPD.

"This test is great for our clients because they can bring the horse in, and it's not invasive," Hoffman said. "But it's still not good enough for the field veterinarian because there is too much equipment; it's not portable, and the technical expertise involved is not practical to take on the road."

Hoffman's new field test has overcome those obstacles. "The difference between this portable system and the hospital system is that this system will fit in a suitcase," he said. "You will be able to take it on the road with a laptop and some software, some elastic bands and a mask. It's much easier."

By mid-fall, Hoffman and his research team will be field-testing the portable lung function test at stables and racetracks.

"What I hope is that we are moving away from the old, late-stage COPD and getting to the earlier COPD that silently affects many horses," Hoffman said.

"There's a lot of opportunity for veterinarians to prevent COPD by identifying and treating small airway disease in the field early. This is going to be a burgeoning field in veterinary medicine."



Acupuncture gains popularity among horse owners

Acupuncture, the ancient healing art of China, came to veterinary medicine in the United States in the late 1970s. The technique involves placing small needles in the body at certain points, or meridians, to balance or increase the *chi*, or energy, in the body.

"The exact mechanism has not been clearly defined in the West, but what we do know is that the needles help to release natural hormones called endorphins, which act as natural painkillers," said Dr. Mary Rose Paradis, associate professor of medicine at Tufts School of Veterinary Medicine and a certified veterinary acupuncturist.

"It's not a magic bullet, but it could prove to be a useful adjunct treatment to western medicine or as a preventive measure," Paradis said. "I use acupuncture in older horses to help increase their energy level and appetite."

A group of veterinarians who study acupuncture formed an organization called the International Veterinary Acupuncture Society, which offers courses for accreditation in acupuncture to veterinarians.

"Cases that lend themselves to acupuncture are the musculoskeletal problems, and some success has been seen in these areas," said Paradis. "I'm also interested in looking at how acupuncture affects the respiratory problems we see. It may be a useful adjunct to the treatment of heaves, too. I only do acupuncture about once a week, but I can see that in the future, the field will be growing."

"Clients definitely want it and are interested in exploring alternatives. In fact, many are more interested in acupuncture for their animals than they are for themselves."

A month in Dubai, a world of experience

by Tamara Gull, V98



Editor's note: Students at Tufts School of Veterinary Medicine spend four years in classes and clinics learning and perfecting the ancient art and modern science of veterinary medicine. Their skills are further refined outside the uni-

versity at externships at veterinary practices or other animal care facilities around the globe. In March, Tamara Gull, V98, spent a month at the United Arab Emirates' world-famous Dubai Equine Hospital. What follows is her essay about her experience in which she documents the intensity and passion of life at the Dubai Equine Hospital. Now, Gull is doing a large animal internship at the University of Georgia College of Veterinary Medicine.

The Dubai Equine Hospital (DEH) owes its existence to Sheik Mohammed bin Rashid Al Maktoum, the Crown Prince of Dubai. Sheik Mohammed is a talented horseman and a champion endurance rider, and his desire for a facility to care for the horses in his country led to the establishment of DEH, with the assistance of Dr. Michael Hauser, an American veterinarian.

Now a 10-veterinarian, 30-staff practice with state-of-the-art diagnostic and therapeutic tools, the hospital teems with Thoroughbred and Arabian racehorses, endurance horses and polo ponies. While most of the cases are orthopedic (lameness exams, tendon surgeries, arthroscopies and scintigraphies), most of the staff veterinarians are responsible for the primary care of many of the Sheik's horses.



The Dubai Equine Hospital

My experiences at DEH were extraordinary. While as a student I was not allowed to do some things, I still got a great deal of hands-on experience. I scrubbed on every surgery and assisted Dr. Carlos Cervantes, the hospital's primary surgeon, on everything from colics to arthroscopies to tendons. I learned more about interpreting limb radiographs than I had imagined. I saw four to eight lameness workups a day and learned to evaluate lower limb structures using ultrasound. I assisted in laser surgeries of the upper airway and was taught how to use the computer-assisted nuclear scintigraphy unit. I also assisted in the gastroscopy or endoscopy of nearly 100 horses and learned how to grade and evaluate equine gastric ulcers.

And on rare occasions, I was able to explore the city and its fascinating culture. Despite the stereotypes, as a Western woman I had no problems in Dubai's worldly and tolerant Islamic climate. But the most memorable times were those when I left the hospital to assist at competitions.

The veterinarians at DEH share responsibilities in attending the races at Nad Al Sheba and Jebel Ali, Dubai's two racetracks. Usually their services are not needed.

My first trip to the track, however, was an awakening to the realities of racetrack practice. The favorite in one race broke down in the home stretch, almost directly in front of the stands. It was a catastrophic injury. The only option was immediate euthanasia. My role in all this was minor, but it was an up-close and personal view of the worst of all possible outcomes of a day at the races.

The DEH veterinarians also assist at the popular endurance races. These are grueling days for everyone involved. One race, a 120-kilometer competition, started before dawn. It was windy, and blowing sand made it necessary to wear goggles and kerchiefs. Looking like a group of bandits, we performed the initial evaluation of each equine competitor to ensure that it was fit to start the race. As the horses crossed the starting line, I clambered into a Land Rover with Dr. Jim Meyer, an American veterinarian and internist. Our job was to follow the pack of horses and watch for any that needed to be pulled from the race.

After the first leg, I was half-convinced that the veterinarians were in more peril than the horses. We were driving through the steep desert dunes, pitching and sliding around tussocks of desert grass and bound-

ing over others. Despite my seat belt, I was bounced off the ceiling of the vehicle numerous times. The air conditioner quit halfway through, just as the temperature topped 103 degrees.

Then we got stuck. Par for the course, as two of the three equine ambulances were also stuck. We did get free, but not before becoming coated in sand and dripping with sweat. It came as no surprise that the horses were much better-equipped to navigate the unforgiving desert terrain than any vehicle. We only had to pull two horses while on the course, but the hospital tent at the central checkpoint was full, with exhausted, horses getting intravenous fluids as fast as the veterinarians and the riders could pump them in. Fortunately, none of the horses needed to be hospitalized after the race was completed long after dark.

Another endurance race was a mere 40K, and I was riding in a chase vehicle with Dr. Michelle Boehringer. This race was four times around a relatively flat 10K camel racetrack. But the brevity of the race prompted the riders to ask for more speed, so we had numerous patients.

We pulled up next to one staggering horse probably suffering from heatstroke and got his rider and saddle off just before the horse collapsed in the middle of the track. We immediately initiated treatment. It wasn't

long before the horse tried getting up, but he was far too weak. I spent the next several hours sitting on his sand-caked neck to keep him down while forcing 30 liters of fluid into his veins as other competitors rode around us. By then the race was over, and even the camel drivers had come and gone. We even had to divert the track-grooming equipment around our equine patient. It was long past dark when the horse was strong enough to stand and stagger into a trailer for the trip back to DEH. We had five horses from that race come into DEH as in-patients.

The highlight of my trip was the running of the Dubai World Cup, which featured champion racehorses from around the globe. All of the DEH veterinarians were in attendance that day. We monitored the horses from the stabling area to the parade ring, then climbed into the trucks to follow the race. The crowds around the track infield were so large that our vehicles had a difficult time keeping up during the first race. Spectators kept intruding on our chase path, and we came altogether too close to hitting several people! We



Horse and rider stop for a fluid break along the desert course.

also had to dodge the television truck, which pursued the best shots of the racers with complete disregard for safety.

All of the night's races were run without incident, including the World Cup itself. In a thrilling finish, American champion Silver Charm kept his slim lead to win over one of Sheik Mohammed's entries to claim a magnificent two-foot solid gold trophy.

Celebrations went on for hours after the races were finished, but the veterinary staff missed almost all of them. None of us left the stabling area until the last horse was cooled out and trailered away. It was past midnight when we finally drove back to the hospital, exhausted, fancy clothes rumpled and sweaty, but pleased.

I left Dubai barely two days later, my head still in the clouds. The whole trip was an incredible and exotic experience.



At the Dubai World Cup

Any veterinary student wishing to apply for a month-long externship at Dubai should write (at least eight months in advance) to Ms. Pat Bellairs, Dubai Equine Hospital, P.O. Box 9373, Dubai, United Arab Emirates. Travel and lodging are provided. Questions about this article may be directed to tgull@calc.vet.uga.edu

PROFILE

Elizabeth Atwood Lawrence: Pioneer with a memory of animal care's past and a vision for its future



Dr. Elizabeth Atwood Lawrence has been a leader in the study of our complicated relationships with animals.

Boston Globe photo

by **Beth Wolfensberger Singer**

At the beginning of Dr. Elizabeth Atwood Lawrence's senior year at veterinary school, she was so excited about finally getting to accompany practitioners on rounds that she literally ran to look at the list of clinical assignments. She was in for a shock. The list included neither her name nor the name of any female member of her class.

Confronting the school's dean, she learned the reason for the exclusion: The clinicians' wives did not want female students accompanying their husbands on calls.

Such an absurdly based restriction sounds incredible today — and illegal. But Lawrence, a professor of environmental and population health at the School of Veterinary Medicine, remembers when there were no laws to prevent that type of unfairness.

"It's almost like studying history, well, to think what it was like," she says, sitting in a conference room on the Grafton campus, where 80 percent of the students are female. "Women went through so much to become veterinarians. We were told we absolutely couldn't do it."

The image of Lawrence sprinting toward what she believed would be available, only to find she must build the opportunities herself, against opposition, is a poignant one. It has recurred throughout her career as she has helped the profession become vastly more welcoming to women and has shaped an entirely new field of study: That of the attachments and interactions between humans and animals.

At Tufts she teaches "Human-Animal Relationships," the only required course at any veterinary school that addresses the ethics and sociocultural issues involved in treating animals. Lawrence's aim is to help students hone the skills that serve her well: An ability to think thoroughly, know one's own mind and act with creativity and conviction to understand and improve things.

Growing up in Fall River, Mass., in the 1930s and '40s, Lawrence loved animals intensely, and by age 16 was determined to become a veterinarian.

Her father, an obstetrician and surgeon, encouraged her. It was with surprise that she realized how vehemently others rejected the idea of a female veterinarian.

Lawrence suspects that the University of Pennsylvania School of Veterinary Medicine's dean admitted her as one of the few women in the Class of 1956 because she had graduated from Mount Holyoke College as an English major. "I never got to ask; he died suddenly the September I started there. But I think he recognized that it would be good for veterinary medicine to have someone from a liberal arts background. That was almost unknown back then."

In the 1950s, women were said not to possess the strength to work with animals (yet male veterinarians employed strong assistants) and were told they "would be taking the place of a man" in veterinary school and would abandon the profession to raise families. The women at Lawrence's school were barred from the "students' room," where exam schedules were posted. In anatomy lab, the instructor refused to help the table that included the women. "Men in every position at the school made it clear that women did not belong, that we should be at home raising families and that we were unsuited to handling and treating animals," Lawrence has written.

Lawrence found it revealing — about men, women and the veterinary profession at the time — that she was described in her class yearbook as "a rare china cup in a bullpen."

The cup went on to excel professionally (and raise two children), despite what the bulls left her to wade through. After several years of working for veterinarians, Lawrence established her own practice in Westport, Mass., maintaining it for 15 years. Then she did something that rendered her, as one veterinary colleague puts it, "a rare cross-disciplinary gem": She went back to school, earning her Ph.D. in cultural anthropology at Brown University.

"I was always interested in human-animal relationships," Lawrence explains, "but nobody thought of that as a field." At Brown, she designed her own course of

study, writing her master's thesis on Crow Indians' relationship to their horses, and her Ph.D. on the rodeo, a work that became her book *Rodeo: An Anthropologist Looks at the Wild and the Tame*. Both thesis and dissertation won prestigious anthropological prizes.

That was only the beginning of Lawrence's success as a writer. She published three other books: *Hoofbeats and Society: Studies of Human-Horse Interactions*, *His Very Silence Speaks: Comanche — The Horse Who Survived Custer's Last Stand* and *Hunting the Wren: Transformation of Bird to Symbol*. She has written chapters and texts for a host of other books, and the list of her journal articles, book and film reviews and other publications extends for a dozen pages of her C.V. Her first three books now serve as textbooks at more than 30 colleges and universities nationwide.

"What makes her work so special is that it combines a very solid social science perspective with a strong feeling for animals."

Apparently the veterinary school dean was right: It has been good for the profession to have admitted a former English major. Attests Prof. Bernard Rollin of Colorado State University, "Dr. Lawrence is one of the best writers in the field. She has a spellbinding style. She knows how to synthesize a great deal of material and create an organic unity that's truly exceptional."

Lawrence composed most of her writings while at Tufts, where she has taught since 1981. Speaking engagements have taken her around the world, from Montreal to Monaco to Vienna to Rio de Janeiro, where she coordinated sessions at the XXIV World Veterinary Congress.

Together, the research, writings, teaching and speaking engagements have made her, says Northeastern University Prof. Arnold Arluke, "a key player in the formation of the human-animal interaction field. What

makes her work so special is that it combines a very solid social science perspective with a strong feeling for animals. Her work is extremely balanced in that sense. I don't see that elsewhere in the field," Arluke says.

And the work has paid off. "The field has expanded tremendously," Lawrence says with satisfaction. "Now you have psychologists, social workers, sociologists, all kinds of disciplines getting together to study human-animal relationships. How we perceive animals determines the treatment that society gives them. People control almost all of nature, so you have to understand how they look at animals and nature."

Students in Lawrence's classes are often inspired and taken aback by what she exposes them to. "I never thought about that," is a common refrain. They report that the course reminds them why they originally wished to become veterinarians.

Lawrence has received numerous teaching and professional awards, including the first International Distinguished Scholar Award of the Human-Animal Interaction Organizations and the 1988 Outstanding Woman Veterinarian of the Year Award. But the best outcome of her teaching, she believes, will be improvements in animal welfare. "If anything is ever going to be reformed," she says, "I think it has to come from veterinary medicine. People will listen to veterinarians. They consider them the animal experts."

Accordingly, she spends much of her time mentoring veterinary students and scholars all over the world who want to explore the field she pioneered. Encouragement, Lawrence knows, is a priceless gift.

"I received a letter the other day from a woman who wanted to be a veterinarian so badly. I think she may be somewhat my age, and she couldn't do it. The schools wouldn't take her, and she's wanted to be a veterinarian all her life.

"I don't know old she is now," Lawrence says with a laugh, "but I'm going to encourage her to come to Tufts and become one."

SCHOOL CLOSES IN ON CAMPAIGN GOAL

Tufts University School of Veterinary Medicine received more than \$7 million in gifts and pledges in fiscal year 1998, which ended June 30. The school has now raised \$36.7 million, or 89.5 percent, of its \$41 million *Tufts Tomorrow* campaign goal. The Tufts Veterinary Fund's extraordinary \$1.2 million in achievement set the pace for the year's success, placing the school first among the nation's veterinary institutions in annual giving. This achievement is especially noteworthy, given that 98 percent of the fund's 9,000 donors are non-alumni friends of the school.

University-wide, *Tufts Tomorrow* recorded more than \$70 million in private philanthropic support for the fiscal year. The university has raised nearly \$300 million of its \$400 million goal.

If you want to know more about *Tufts Tomorrow* priorities, contact Shelley Rodman, director of veterinary development, at (508) 839-7907, or e-mail her at srodman@infonet.tufts.edu

On the map



Tufts School of Veterinary Medicine dedicated Nickerson Lane on the Grafton campus in April in recognition of veterinary overseer Pauline M. Nickerson, shown here with Tufts President John DiBiaggio. She has been an effective advocate for farm programs at the school, and the new lane leads to the school's farm office, sheep facilities and the Beef Cattle Barn, for which Nickerson chaired the fund-raising effort in the early 1980s. Among those attending the dedication were several students who have benefited from the Pauline M. Nickerson Scholarship Fund and the Pauline M. Nickerson Emergency Student Loan Fund.

A tradition of caring

One of Tufts School of Veterinary Medicine's most successful programs is continuing its tradition of helping veterinarians across the country demonstrate their commitment and caring to clients.

Veterinarians CARE (Companion Animals REmembered) allows veterinarians to express their sympathy to clients by sending a contribution to Tufts in the name of an animal that dies or is euthanized in the veterinarian's clinic. Tufts then sends a letter to the client informing him or her of the veterinarian's generosity and condolences. People who have lost pets have told Tufts that the gifts earmarked for helping other animals give them comfort.

"One of the problems with pet loss in our country is that there isn't any societal support for grieving. When people lose their pets, it's a private thing; oftentimes they don't even have anyone to talk to about it," said Dr. Jonathan H. Sonneborn-Turetsky, V83, of the Veterinary Clinic of East Hampton, N.Y.

Sonneborn-Turetsky says he participates in the CARE program because "I think it's important for people to know that others are aware of their loss and that there's an acknowledgment of what the animal meant to the owner. And I've been very moved by the cards and letters that clients have sent to me. It makes people feel good to know that other pets and animals are being helped in the name of their pet."

Tufts is grateful to the following veterinarians and clinics who have participated in the CARE program this year:

Acorn Animal Hospital
Franklin, Mass.

Animal Wellness Center
East Hartford, Conn.

Baker Animal Hospital
Hampton Falls, N.H.

Bay State Animal Clinic
Danvers, Mass.

Michelle Haroules, D.V.M.
Springfield, Mass.

Bristol Veterinary Associates
Bristol, Conn.

Patricia Campbell, D.V.M.
West Bridgewater, Mass.

Wendy E. Emerson, D.V.M.
Topsfield, Mass.

Dean Gebroe, D.V.M.
Culver City, Calif.

Goodfriends Veterinary Clinic
East Lyme, Conn.

Daniel E. Grayson, D.V.M.
Beverly Hills, Calif.

Linwood Animal Hospital
Lowell, Mass.

David A. Merrill, D.V.M.
Wakefield, Mass.

Metrowest Veterinary
Milford, Mass.

Mobile Pet Care, LLC
Bristol, Conn.

New London Veterinary Hospital
Waterford, Conn.

The North County Veterinary Clinic Inc.
Greenfield, Mass.

Norton Animal Hospital
Norton, Mass.

Cheryl Ann Nygard, D.V.M.
Templeton, Mass.

Sherman Veterinary Services
Sherman, Conn.

Southington Veterinary Associates
Southington, Conn.

Starwood Veterinary Clinic
Westford, Mass.

Suffield Veterinary Hospital
Suffield, Conn.

Swan Corner Animal Hospital
Tyngsboro, Mass.

Sheryl R. Swankin, D.V.M.
Weston, Mass.

Tramway Animal Medical Center
Albuquerque, N.M.

Vet Care, P.C.

Old Canal Veterinary Clinic
Plainville, Conn.

The Veterinary Clinic of East Hampton
East Hampton, N.Y.

Veterinary Ophthalmology of New England
Lincoln, Mass.

Weston Veterinary Clinic
Weston, Mass.

Westover Animal Clinic
Chicopee, Mass.

Wignall Animal Hospital
Dracut, Mass.

Retirement plan funds their personal goals and a Tufts education

Barbara and Waldo Rowell, born in Worcester and Holden, Mass., respectively, have been married for 52 years. Hard-working all of their lives and successful enough to have bought a lovely waterfront vacation home in Rhode Island, the Rowells, however, are certainly not so knock-down rich that they can ignore thinking about their finances as they grow older.

Barbara attended Bates and Assumption colleges and Clark University, leaving a research career when she became a mother. She started a second career as a teacher and guidance counselor when her children were school-age. Waldo passed up higher education for World War II. After the war, he began a career with the phone company. The Rowells put their three sons through college without debt, and today they travel together to Elderhostels, combining their vacations with learning.

When the Rowells retired to Florida, their big house in Rhode Island became a burden to them. Waterfront houses generate enormous tax bills, and great ocean views are always accompanied by larger-than-average maintenance costs.

"Basically, we figured that it was costing us \$12,000 to \$14,000 a year to keep that house, and at the same time our income was being eroded," Barbara Rowell says. Their pensions — his phone company plan and her teacher retirement package — grew only marginally — less than 1 percent annually.

With the help of Tufts' Office of Estate and Gift Planning, they came up with a plan. What they decided to do works for them, and it also benefits the School of Veterinary Medicine, where their son, Dr. Steven Rowell, V83, is director of the Tufts Veterinary Diagnostic Laboratory. (See story, page 2).

The Rowells knew that if they sold the house outright they would face large capital gains taxes. They needed regular and reliable income to supplement their pension plans. Their phone company and teacher plans are individual in nature; a surviving spouse would not receive any income from the partner's pension.

"I called Tufts because of Steven and his education there," Barbara says. Tufts began working with the Rowells, and the family's lawyer and accountant to come up with a plan.

Here's what the Rowells decided to do: They donated one quarter of their Rhode Island home (about \$107,000) to Tufts to fund a Charitable Remainder Unitrust. The gift is tax-exempt, meaning that it can be sold without paying a capital gains tax. The Rowells will receive 7 percent of the annual value of the trust, and they will continue to receive income from the trust throughout their lives. Ultimately, the trust will fund a scholarship at the School of Veterinary Medicine.



Barbara and Waldo Rowell, V83P

Photo by Mark Morelli

"Tufts, by paying us 7 percent a year, is giving us more income," Barbara says. "And 7 percent is darn good, plus we can't outlive it."

Barbara says it certainly was difficult to part with a house that had been in the family for more than a quarter-century and that had been the site of many good family memories. But the sale of the house made sense, as did the gift to the veterinary school.

"I am not a great animal lover, but my husband and I are great lovers of education," says Barbara, who appreciates the scholarship support she received as a college student. "We like the fact that the endowed scholarship will be part of our legacy, that it always will represent something that is important to our family — education — and that it will help a school that is important to our son, Steven."

The fact that Tufts' Office of Estate and Gift Planning took the Rowells through the trust process step by step, explaining its benefits and working carefully to come up with the best plan, was important to them, too.

"Tufts took care of our interests as well as its own," Barbara says, "and we're grateful for that."

John LoDico

FINISH



We're opening our 'house' to you

Tufts School of Veterinary Medicine will be open to the public for its 15th annual Open House on Saturday, September 12, from 10 a.m. to 3 p.m. — rain or shine — at 200 Westboro Road (Rte. 30) in North Grafton.

The annual event — which draws thousands of people from throughout New England — will feature:

- information for prospective students
- dog obedience demonstrations
- police and assistance canine demonstrations
- breed rescue exhibitions
- animal health-care exhibits
- self-guided tours and demonstrations in Tufts' Hospital for Large Animals and the Henry and Lois Foster Hospital for Small Animals
- Special attractions, including the New England Miniature Horse Society, the USDA Beagle Brigade and the popular birds of prey demonstration
- and fun activities for the kids

The event is free. For safety reasons and because of state rabies public health regulations, please leave your pets at home.

For more information, call (508) 839-5395.

Veterinary World

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