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HIGH-TECH WIZARDRY
A battery of new technology brings cancer treatment into the 21st century

by Margaret Combs

Diagnostic speed and precision can save a cancer patient's life. At Tufts University School of Veterinary Medicine, an armory of new and powerful diagnostic technologies is enabling veterinary specialists in the Harrington Oncology Program to more accurately localize tumors, more effectively plan cancer therapy and complete diagnostic procedures in half the time.

See TECHNOLOGICALS, page 4
Contributing to communities and to society

by Philip C. Kosch

In an educational field dominated by public land-grant colleges, Tufts University School of Veterinary Medicine, as a private school, has striven in a self-determined way to develop novel programs of study that make our school a special place to receive a veterinary medical education, while contributing to our understanding of all animals and to our progress as a humane and compassionate society.

Many educational experiences at Tufts place emphasis on explorations of values and attitudes and the development of appropriate behavior for a successful professional life in veterinary medicine. We employ numerous educational activities and subjects to meet our objectives for the personal growth and professional development of our students. These include problem-based learning, standardized client interviewing, veterinary ethical instruction throughout the four-year curriculum and serious consideration of complex human-animal interactions. In addition, Tufts students learn to develop constructive solutions to immediate and long-term problems related to global issues of animal and human health and welfare in an ecological context. We have a commitment to educate our students for lifetimes of active citizenship to meet the growing opportunities for community leadership by members of our profession.

I am exceedingly proud of our students who are committed to giving back to their community and to society and who demonstrate this citizenship throughout their years at Tufts. In this issue of Tufts Veterinary Medicine, we highlight some of the student-initiated and managed community and global outreach programs.

These student activities complement those of our faculty in numerous outreach programs. In this issue we focus on the efforts of three faculty members, Dr. Mark Pokras, Dr. Gary Patronek and Dr. Acacia Alcivar-Warren, who are helping to shape public policy concerning animals through scholarly analyses and dissemination of information.

Tufts recently decided to eliminate the live animal component of our third-year elective small animal surgery laboratory, starting in the 2000-01 academic year. This is based on the success of alternative methods of teaching surgical techniques that were initiated in 1989 at Tufts, increased opportunities for excellent surgical experience for students at area shelters and in our own spay laboratory and in the assessment of the surgical abilities of our students while at Tufts and following graduation. This may have implications in policy-making at other schools, as Tufts becomes the first school in the nation to eliminate all terminal animal laboratories in the curriculum.

In fact, last year, we reported that all dog cadavers used for anatomy instruction are now supplied through a donation program that gives clients who euthanize their pets for medical reasons the option of donating the body to veterinary medical education. It is important to note that Tufts has been led by both students and faculty in promoting the humane treatment of animals. Once again, I can say I'm proud to serve as their dean.

Our commitment is to enhance and broaden Tufts' influence on issues of societal importance. Nationally, our most distinct competency is widely acknowledged to be our leadership in debates relating to existing and emerging veterinary public policy issues.

On the cover:
Dr. Amy Tidwell, right, a veterinary radiologist, and Lynn Macey, a radiologic technologist, prepare an 11-year-old beagle named Bert, a bone cancer patient at the Tufts Harrington Oncology Program, for a diagnostic CT scan.

Photo by Mark Morelli

TUFTS VETERINARY MEDICINE
spring 2000
Vol. 1, No. 2

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Tufts Veterinary Medicine is published three times a year and is distributed to key university personnel, veterinary students, veterinarians, alumni, friends and others.

We welcome your letters, story ideas and suggestions.

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A new wildlife medicine center

Ground has been broken on the $2.5 million Bernice Barbour Wildlife Medicine Building, slated to open on the Grafton campus in December.

The 11,000-square-foot building, which will be outfitted for energy conservation, will house an expanded Wildlife Clinic, including a filtered pool for aquatic animals, an indoor ward for carnivores, small and large animal runs, flight cages, enlarged surgical and diagnostic facilities and a conference room for seminars and public gatherings.

What distinguishes the center from other wildlife clinics across the nation is that it will bring together under one roof Tufts' signature programs in Wildlife Medicine and International Veterinary Medicine, as well as the Center for Conservation Medicine. By housing the three disciplines together, Tufts will foster collaboration on global health issues such as environmental degradation, infectious disease, antibiotic resistance and loss of biodiversity.

A milestone match

On March 6, a record number of this year's graduating veterinary students were notified that they had been successfully matched with internship programs for next year.

Out of 35 students who applied, 30 received internships at veterinary facilities across the United States. This means that even though Tufts is one of 31 veterinary schools in North America, it received approximately 10 percent of the total matches.

"This is an excellent percentage," said Dr. Jack Judy, chair of the Veterinary Internship and Residency Matching Program Committee, which has been matching veterinary students for 24 years. "It puts Tufts in an enviable position and should be considered quite an accomplishment."

Commencement is May 21

The keynote speaker at the veterinary commencement ceremonies May 21 will be Dr. Mary Beth Leininger, the first woman president in the organization's 138-year history.

Leininger also served nine years on AVMA's Council on Public Relations and chaired the AVMA Public Relations Roundtable.

She received her veterinary medical degree from Purdue University and for more than 30 years, managed an American Animal Hospital Association-accredited veterinary hospital in Plymouth, Mich., with her husband, Dr. Steven Leininger. She recently was elected a Distinguished Practitioner in Veterinary Medicine in the National Academies of Practice.

Veterinary commencement begins at 2 p.m. on the Grafton campus. The all-university commencement will take place May 21, starting at 9 a.m. on the Medford/Somerville campus. Entertainer Bill Cosby will give the all-university commencement address and also will be awarded an honorary doctor of humane letters degree.

A short break

After 16 years of hosting Open House every fall, Tufts School of Veterinary Medicine will not host the event this year so that veterinarians, students and staff can participate in the inaugural Tufts Animal Expo.

"We wanted to allow everyone enough time and energy to take part in Tufts Animal Expo, which will be an exciting and groundbreaking professional event," said Dean Philip C. Kosch. The date for the 2001 Open House will be Saturday, September 8.

TUFTS ANIMAL EXPO 2000

'Meeting of the Minds'

More than 150 leading authorities in veterinary medicine and related fields are scheduled as panelists and presenters at the Tufts Animal Expo 2000, which will take place October 10-13 in Boston.

The continuing education conference for veterinarians and other animal care professionals will offer seminars on traditional veterinary disciplines such as oncology, cardiology, critical care and surgery, as well as programs of broader interest such as public health, nutrition and behavior. Perhaps most compelling will be a trend-setting forum called "Meeting of the Minds," when panelists and audience participants will engage in lively discussion and debate on a number of issues affecting animal care.

"By bringing all the parties to the table, we look to air our differences, recognize our commonality and try to reach a consensus for the optimal approach to dealing with these far-reaching and important issues," said Dr. Philip C. Kosch, dean of the veterinary school.

For more information on Tufts Animal Expo, visit the web site at www.tuftsamilexpo.com or contact Susan Brogan at (508) 887-4723 or susan.brogan@tufts.edu.
"Imaging and biopsy procedures, which used to take two hours, can now be done in 30 to 60 minutes," confirms Dr. Antony Moore, head of the Harrington Oncology Program, one of the leading animal cancer treatment centers in the nation. "We're not only getting more accurate diagnoses with this technology, but our animal patients are spending less time under anesthesia."

Providing these new capabilities is a $1.4 million computerized tomography (CT) scanner funded by Photogen Technologies Inc. Installed in the veterinary school's radiology facility in February, it is the only one of its kind at any veterinary facility. Arriving as part of a five-year cancer therapy research collaboration between Tufts and Photogen, the spiral CT scanner, which uses radiation to produce cross-sectional images of an animal's internal anatomy, is actually a "suite" of integrated diagnostic tools that provides not only scanning but biopsy capabilities. Attached to one side of the scanner is a computer-integrated device known as PinPoint, which allows veterinarians to pre-calculate the precise angle, trajectory and depth of a biopsy needle insertion. On the other side is a fluoroscopic C-arm that can be positioned over, under or around an animal's body. This device transmits a two-dimensional image onto a nearby screen, enabling the veterinarian to watch in "real time" as the biopsy needle is inserted.

"I call this one of the intervention rooms of the future, only five or six of which are currently available anywhere in the United States," said Dr. Gerald Wolf, medical director at Photogen and a research professor at the veterinary school.

Further increasing its battery of diagnostic tools, Tufts in March became the first veterinary facility in New England to offer on-site access to Magnetic Resonance Imaging (MRI), another leading-edge imaging technology that uses a magnetic field and radio waves to produce highly intricate images. Provided in collaboration with Radiology Relationship Corp. of Rhode Island, the MRI service is available via a mobile unit that comes to the Grafton campus three days a week.

Like CT, MRI is considered an ultimate diagnostic tool, offering a particular advantage depending on the nature and location of a patient's disease. While CT is the faster imaging machine, providing images within seconds that are ideal for diagnosing bone-related problems, MRI is the better technology for visualizing
disorders of the brain and other soft tissues, says Dr. Amy Tidwell, associate professor of radiology in the veterinary school's Department of Clinical Sciences. “With MRI, we are better able to distinguish between soft tissue masses, which means we can better diagnose and treat brain tumors, neural tissue diseases, abscesses and other soft tissue disorders,” Tidwell says. MRI’s sensitive imaging mechanism provides precise photos of a tumor’s size and boundaries, giving veterinarians a much “better idea of the extent of a tumor and exactly where its margins are,” Tidwell says. “We’re seeing images we’ve never seen before.”

In addition to diagnostic accuracy, both of the new technologies allow for more effective delivery of cancer treatment. Knowing exactly where a tumor begins and ends enables veterinarians to maximize the planning and precision of both surgical and radiation therapy, says Dr. David Ruslander, a veterinary oncologist and radiation therapist at Tufts. As part of the Photogen-funded research project, Ruslander, who is the principal investigator, will have access to a new computer software radiation planning system that will allow him to more precisely and accurately deliver radiation therapy.

Armed with these new technologies, Tufts' Harrington Oncology Program has reached a significant milestone in veterinary medicine, offering a caliber of cancer diagnostics and treatment to animal patients equal to that of human medicine. “There is nothing better than this. These technologies put us at the top of the line,” Moore says.

Improving cancer treatment

The big problem with radiation therapy is that it does not differentiate between diseased and healthy tissue. “We can destroy any tumor with a large enough dose of radiation, but we also damage other healthy cells in the process,” says Dr. David Ruslander, radiation therapist and assistant professor of oncology at the School of Veterinary Medicine.

Ruslander has teamed with Dr. Gerald Wolf, a physician and medical director at Photogen Technologies Inc., to conduct a five-year study that may help solve the problem for both animal and human cancer patients. Funded by Photogen, the multi-phased study will test a number of radiosensitive compounds for their ability to increase the absorption of radiation into cancerous cells. If found effective, the compounds could enable doctors and veterinarians to deliver higher doses of radiation than are now possible.

“It’s the normal tissue around the tumor that currently limits the dose of radiation we can give,” says Ruslander. “If we can find a way to more effectively steer radiation into the tumor and minimize the amount to the surrounding tissue, we’ll have reached a significant goal.”
At Tufts University School of Veterinary Medicine, researchers search the world for scientific data that may improve animal and human health. In the process, a number of Tufts veterinarians—three of whom are profiled here—have not only contributed to advancements in medical knowledge, but are laying the foundation for changes in public policy, regulations and legislation around the world.

Science is making public policy

A passion to protect wildlife often ignites efforts to enact legislation, but when it comes time to convince lawmakers and state or federal agencies, scientific evidence can make the difference between passing a law or watching it die in committee.

The research of Dr. Mark Pokras, V84, and the Tufts Wildlife Clinic is credited for successful legislation banning the sale or use of lead fishing sinkers, which Pokras has shown to be the most frequent cause of mortality in adult loons in New England's freshwater lakes and ponds.

Susan Hitchcox, a Maine Audubon Society wildlife biologist, said the Tufts studies were "the key to passing Maine's legislation last year." She said Pokras attended public hearings and working sessions and was "very influential in presenting his work, answering questions, making a case."

"People in Maine love their loons," Hitchcox said. "To see in black and white that lead was a major—and needless—cause of death made a convincing argument. Legislators need that kind of documentation, or they are liable to take the easy road out and not act."

Since 1989, Pokras, director of the Wildlife Clinic, and clinic staff and students have conducted animal autopsies (necropsies) on nearly 500 loons. They found that more than half of the adult loons from the region's freshwater lakes and ponds die of lead poisoning.

Lead sinkers and jigs generally weigh between 0.5 and 15 grams. A single dose of 0.3 grams has been shown to result in the death of loons. Loons ingest pebbles, and perhaps mistakenly, lead sinkers to aid in digestion. In the loon's acidic gizzard, the lead breaks down quickly and is absorbed into the blood. Pokras believes death may come in as little as two weeks.

New Hampshire became the first state to ban the use of lead sinkers weighing an ounce or less and lead-headed jigs less than an inch in length. The legislation took effect Jan. 1, 2000. Maine will follow suit with a ban on the sale of lead sinkers that weigh 1/2 ounce or less on Jan. 1, 2002. More states may follow. Massachusetts is considering new regulations, and others, including Vermont, New York, Minnesota and Wisconsin, are discussing similar action or have begun educational campaigns.

While Pokras is pleased with this progress, he believes federal legislation, which would be less confusing and easier to enforce, would be the best approach. He said bordering states that share lakes and ponds now have different regulations, banning either the use or sale of sinkers of varying sizes and weights.

Although loons are the species for which the most extensive data on lead fishing gear ingestion has been collected, Pokras has reviewed documentation of ingestion in more than 25 other aquatic animals, including swans, great blue herons and snapping turtles.

Tom French, an assistant director of the Massachusetts Division of Fisheries and Wildlife, said Pokras' loon research is valuable because it documents the large numbers killed, demonstrating the impact on a population. "Short of Mark's study, I don't think we would have seen these laws pass," he said.

Pokras also has collaborated with the U.S. Fish and Wildlife Service, which is considering prohibiting lead fishing gear from parts of the National Wildlife Refuge system.

Meanwhile, at the Tufts Wildlife Clinic, the loon necropsies continue. Although the lead ingestion mortality rate has been established, Pokras said, "One of our jobs is to keep stirring the water...to keep the issue visible in people's minds."
Center for Animals leads the effort to get help for animal hoarders

Finding out what causes people to collect large numbers of animals—sometimes more than 100—beyond their ability to provide humane care, is the focus of research and policy change efforts by Dr. Gary Patronek, head of the Tufts Center for Animals and Public Policy.

Although there are an estimated 700 to 2,000 cases of animal hoarding in this country each year, there is "no formal recognition of the syndrome and no systematic reporting of cases," Patronek said.

After discovering that little information existed on animal hoarders, Patronek conducted a study, published in 1999, yielding the first national statistics on the problem. Shortly after, he led efforts to form a consortium of human health and animal health specialists to expand the research. As a result, the Hoarding of Animals Research Consortium (H.A.R.C.) was formed. The group represents multiple disciplines, including psychology, psychiatry and sociology as well as veterinary medicine and animal protection. Joining with Tufts in the consortium are the Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA), as well as investigators from Boston University, Massachusetts General Hospital, Northeastern University and Smith College.

"Gary Patronek's leadership is critical to the success of this project," said Carter Luke, vice president of humane services for the MSPCA. "He has created a multidisciplinary approach to a complex animal and human welfare issue. It is a very unique and progressive leadership role for a veterinary school to play."

H.A.R.C. will be conducting in-depth interviews with animal hoarders to collect data on psychological and sociological issues and to identify clinical disorders that may result in animal hoarding behaviors. To collect data as new cases occur, H.A.R.C. also has created a detailed case reporting form that is being distributed across the country and on the Internet.

Putting a face on the problem

Producing the first definitive statistics on animal hoarding, Dr. Gary Patronek published a study in the January/February 1999 issue of Public Health Reports that analyzed 54 cases reported by 10 agencies across the nation.


Among the findings:
The majority of the hoarders (76%) were female. 46% were age 60 or older, and about half lived alone. There was an average of 39 animals involved in each case, but four cases exceeded 100 animals.

In 80% of the cases, animals were found dead or in poor condition, and in 58% of these, the hoarder would not acknowledge that problems existed. In 26% of the cases, the hoarder was eventually institutionalized or placed under guardianship, and in 11%, the hoarder's premises were condemned.

With this new data, Patronek and H.A.R.C. members hope to galvanize agencies to work together to create more appropriate and effective public policies and intervention.

"What should be an important public health problem," Patronek said, "is essentially shifted off on animal welfare agencies that do not have the resources to deal with the [entire scope of the] problem effectively."

Hoarding is treated as a crime, and police who are called to investigate a home or apartment where hoarding is suspected are left with no avenues for intervention other than search warrants and prosecution on animal cruelty charges. Patronek points out that prosecution is often ineffective, doing little to prevent hoarding behavior from recurring because hoarders do not believe their behavior causes cruelty.

"Hoarders often do not recognize the compromised health of their animals and believe they are providing good care even when the animals are sick and starving or have already died," said Patronek.

Through the work of H.A.R.C., Patronek hopes public agencies and health providers will be made more aware that animal hoarding may be a sentinel for mental health problems, meriting serious assessment and prompt intervention by cooperating authorities, including humane societies, public health and law enforcement.
As Dr. Acacia Alcivar-Warren and scientists in Tufts’ Department of Environmental and Population Health look for clues in the genetic makeup of shrimp, they also track the fingerprints of human hands in nature.

For the past seven years, Alcivar-Warren has studied wild shrimp and shrimp cultivated in aquaculture farms around the world. In addition to investigating the levels of viruses and other contaminants in the wild shrimp populations of Ecuador and the Philippines, she has been looking for genetic keys to breeding economically desirable shrimp in aquaculture farms.

The science at the heart of her work is genome mapping: Locating genetic markers that control traits such as growth and disease resistance. Genome mapping “can be used not only for the genetic improvement of shrimp through marker-assisted selection, but also to assess genetic diversity, to study the effects of environmental toxins and to assess the risks to the wild populations of the accidental or intentional release of genetically modified shrimp,” Alcivar-Warren said.

Analyzing genetic diversity and monitoring pollutants and diseases in wild shrimp populations is important because this is where most aquaculture operations get their brood whose offspring become the next farm-raised crop.

“Dr. Warren’s work has contributed significantly to our understanding of the molecular biology of shrimp and other aquatic animals,” said Robert A. Bullis, director of the U.S. Marine Shrimp Farming Program. “Her work on shrimp genomics, in particular, has given our program tremendous insight into the use of genetic markers as a tool for shrimp-breeding programs.”

This research is key to the future of a burgeoning aquaculture industry racing to feed the world’s growing appetite for seafood, especially shrimp. In the last decade, the amount of shrimp consumed in the United States has doubled, contributing to an annual $3 billion trade deficit. Imported shrimp comes from both wild and farmed shrimp operations, each of which has struggled, often unsuccessfully, with sustainability—that is, how to keep the environment and shrimp stocks healthy and productive for generations.

Through her research, Alcivar-Warren intends “to help the aquaculture industry understand how to sustain itself for years to come but not destroy the environment.” Her initial research is setting off warning signals that the survival of wild shrimp populations is increasingly at risk, highlighting the need for environmental and genetic risk assessments, and perhaps, regulations overseeing the aquaculture industry and seafood consumption.
As aquaculture farms have been built in key centers, including Ecuador, Thailand and India, there has been large-scale destruction of mangrove forests, the primary breeding areas for wild shrimp. At the same time, massive viral infections among farmed shrimp have led to the collapse of many shrimp farms, and because of the ways waste is removed, have raised fears that wild populations are also at risk of contamination with viruses flushed out of shrimp ponds, Alcivar-Warren said. Aquaculture wastewater discharged into the sea is also contaminated with pesticides, antibiotics, bacteria and shrimp waste.

"This is not only about protecting the environment and the future of the shrimp species, but about protecting us as human beings."

Acacia Alcivar-Warren

"We are developing databases for environmental pollutants" such as heavy metals, PCBs and other contaminants found in shrimp that may have a genetic impact on reproduction, immunity and health," she said.

Research such as Alcivar-Warren's will be at the heart of future discussions about issues such as the need to restrict the destruction of mangrove habitats during the creation of shrimp farms; to control the movement and interbreeding of wild and cultured species of shrimp within and between countries and continents; to regulate the use of pesticides and antibiotics in shrimp farming and to reduce pollution.

"This is not only about protecting the environment and the future of the shrimp species," said Alcivar-Warren, "but about protecting us as human beings."
Students discover that farm medicine and economic survival are indelibly linked

by Margaret Combs

Trends indicate the new millennium is a particularly crucial time for farm animal medicine. Now, more than ever, a farm’s economic survival—especially the small farms in Massachusetts and the other New England states—hinges on keeping a majority of the herd alive and disease-free. Consequently, access to a knowledgeable farm animal veterinarian is pivotal to a farmer’s livelihood, says Dr. George Saperstein, chair of environmental and population health at the School of Veterinary Medicine.

“If you talk to commercial farmers, they will tell you the thing they need and want the most is access to good veterinary care,” says Saperstein, who heads the veterinary school's farm animal program. “Their success depends on knowing disease prevention techniques and farm management strategies, so it behooves us to produce veterinarians who are trained in these areas.”

Since 1985, the veterinary school has included instruction in farm animal health during all four years of study, progressing from basic restraint and examination techniques in the first and second years, to more advanced clinical and surgical skills in the third and fourth years. Working with more than 500 farm animals, including pigs, sheep, goats and cows housed on a 160-acre farm that is part of the Grafton campus, students learn how to vaccinate, draw blood, determine pregnancies through palpation and trans-abdominal ultrasound and surgical and anesthesia techniques.

Familiar and fearless

During their training, students gain a familiarity and fearlessness with the animals that not only aids them in delivering the right treatment but gains them the respect of the farmers they work with, which is a crucial ingredient in successful care.

“We teach the students to be confident with the animals and to be professional with the farmer. These are the most important
parts of the farm program,” says Scott Brundage, the veterinary school’s beef, dairy and sheep herdsman who has been teaching Tufts students about farm animal husbandry since 1995.

“It can be a very intimidating experience to draw blood from a 600-pound pig when it’s squealing really loud,” admits Doug Nieh, V02, who says he has gained invaluable experience on the farm. “Confidence is a big factor. After you’ve handled these animals, you just feel more capable.”

Apart from clinical skills and handling techniques, students learn the all-important concepts of herd health and farm management. Garth Miller, Tufts’ livestock production manager, says this means learning to consider the individual animal as part of a whole, inseparable from the herd and from its environment.

“The students learn they can’t just concentrate on one diseased pig. They need to make a general assessment of the condition of the herd and figure out why that pig got sick so that it won’t happen again,” explains Miller, who has managed livestock and taught students at Tufts for 18 years. “This means asking questions like: Is there proper ventilation in the barn? Is the feed spoiled? Are there other pigs that are sick?”

The new model
Assessing health problems from an environmental and preventative perspective is the new model of farm animal medicine. Rivaling the old “fire-engine approach,” where a veterinarian simply showed up in an emergency, made an on-the-spot diagnosis and administered therapy, the role of today’s farm animal veterinarian is not only to treat the ill animal but to advise livestock owners how to properly and efficiently manage the herd to prevent disease. As an example, Saperstein cites mastitis in milking cows, a common but dangerous infection that first enters the body through the cow’s teat. “The old model was that the veterinarian would go and treat the cow with antibiotics. End of story. Today’s veterinarian goes to the farmer and says, ‘The design of your stalls can be improved, move this or that board, change your bedding, make it more comfortable to your cows so they won’t bed down in the alleys and in the mud outside. This way you’ll be preventing the infection, and you won’t have to call me next time,’ ” explains Saperstein.
Chandler Dewing and Paul Pellitier, both V02, watch as fellow Sarah Owens, V02, successfully "tips" a sheep, a core handling technique taught in the farm program. Confidence in handling farm animals is key to administering effective veterinary care.

The advisory role is considered so significant that fourth-year students are required to devote effort during one month to a "Herd Project," assessing and problem-solving at a working dairy farm. As part of the school's ambulatory service rotation in Woodstock, Conn., students are divided into teams and assigned to one of 50 area farms, where they interview farmers, observe procedures, gather data and download farm records to analyze how production procedures might be improved. On the last day of the month, the consulting team of students presents an oral report and submits a written report of their recommendations to both supervising clinicians, and most important, to the farmer. "I tell the students, 'This is not an academic exercise. This is a real farm with a real family attached to it, and the advice you give can make or break them,'" Saperstein says.

Learning farm medicine and management remains an integral part of the curriculum for all Tufts veterinary students, even those who decide to concentrate on small animal or equine sports medicine. Not only does this inclusive approach serve the credo of veterinary education—that all graduates are ready and willing to serve any species—but it also prepares students for the ever-changing, versatile needs of the animal-owning community.

An example of a recent shift for which students must be ready, says Dr. Howard Levine, director of farm animal clinical skills courses, is the growing number of "backyard farms."

"An increasing number of people moving out to the suburbs are keeping one or two livestock animals, either for wholesome food production or simply as companion animals," says Levine. He believes the trend will continue and predicts that an increasing number of small animal and especially equine veterinarians will be "called upon to see other species."

One of Levine's students, Chandler Dewing, V02, is well aware she may have to treat a pot-bellied pig or a sheep some day, even though she plans to work in a small animal practice after graduation. "Vaccinating or drawing blood from a pig is very different than from a dog, and it's reassuring that I know how to do it," said Dewing, who no longer feels intimidated by a sheep's tendency to get agitated or a cow's impulse to kick when she enters a stall. "If I ever have to treat these animals, I feel like I'll know what I'm doing, and the owner will feel that, too."
Students reach out to the community
by Linda Hall

Outside their clinics and classrooms, Tufts veterinary students lend helping hands to a vibrant network of community service, outreach and education projects on campus, across the region and around the world. Student volunteers console owners grieving the death of their beloved pets, assist rescued sea turtles, collect supplies for animal shelters, offer AIDS patients advice and care for their pets, teach interactive science to middle school students and organize symposiums on leading-edge medical and environmental issues.

"I believe it's important for any professional to be a part of his or her community and to care about what happens" around them, said Jennifer Stickney, V01, outgoing president of Tufts' Student Chapter of the American Veterinary Medical Association (SCAVMA).

SCAVMA believes volunteer work is so vital to a student's experience that the Tufts chapter this year instituted a community service requirement. New SCAVMA members must participate in at least one community service activity each year, says incoming president Michael Wood, V02.

SCAVMA envisions broad-based efforts to help people or communities, not necessarily veterinary projects. Events held or planned include blood drives, food bank and animal shelter collections, work in soup kitchens and Earth Day clean-up activities. SCAVMA members also bring their dogs to visit nursing home residents. "They really enjoy having the animals come in," Stickney said. "It brightens their day."

Community service is a cornerstone of academic life for many students, including Belinda Abbott, V00, who has directed Gap Junction, an after-school science program for middle and elementary school students. Enlisting volunteers from Tufts' veterinary, medical and Sackler schools, Gap Junction (www.vec.tufts.edu/students/gapjunction/about.html) teaches interactive, hands-on science to about 200 public school students from the Worcester and Boston areas each year.

In another form of outreach, students provide support to immuno-compromised pet owners through an organization called Pets Are Wonderful Support (P.A.W.S.).

P.A.W.S. advises immuno-compromised people (such as those with HIV or AIDS or those undergoing cancer treatment) about how to reduce the risk of zoonoses, diseases passed from animals to humans. P.A.W.S. has created a web site (www.vec.tufts.edu/tuftspaws/paws.html) and is making plans to provide pet care, as well as donations of food, supplies and transportation.

Steve Leshem, V00, who has directed P.A.W.S., recalls a P.A.W.S. volunteer who spoke to the Tufts chapter, telling the story of a man with HIV whose friends stopped visiting but whose dog never left his side. "There were days when the only reason he would get up in the morning would be to walk and feed his dog," Leshem said. When the man lost his vision, P.A.W.S. volunteers cared for his pet.

Offering a sympathetic ear and advice is the goal of another student-operated project, the Pet Loss Support Hotline (508-839-7966). Five nights a week, trained student volunteers answer calls from owners struggling with the loss of a pet or the decision about whether to euthanize. "We try to ask them, 'What is the quality of life [for their pets], and is it likely to get better?,' " said Erika Bruner, V01. "They usually have all the pieces, but it's hard for them to put them together. Most of the time [people who call] feel their friends won't understand, or they have no one at all to talk to, " Bruner said.

Student volunteer projects also extend far beyond campus, particularly for students in Veterinarians for Global Solutions (VGS) and Wildlife, Aquatics, Zoos and Exotics (WAZE).

Last fall, WAZE students assisted with the New England Aquarium's rescue efforts after about 100 endangered sea turtles washed ashore on Cape Cod beaches. Richelle Berard, V02, said students helped to keep the turtles swimming and checked for signs of stress, either watching over Kemp's Ridley sea turtles from outside tanks or joining several 200-pound loggerheads inside.

WAZE and VGS students often pursue independent projects across the country and around the world. Projects range from working with African ranchers on a conservation policy to protect cheetahs to helping local officials in Nepal evaluate the effectiveness of their traditional veterinary practices.

"The goal is for veterinary students to expand into working with communities and the environment in a holistic sense," said Sarah Owens, V02, of VGS.
Rawson Wood is a 1930 Harvard graduate who went into the jewelry business founded by his grandfather. “We never had any pets around the house, but I was always interested in feeding and observing wild birds,” he says. It was at his home on Squam Lake in New Hampshire that Wood turned his attention to the most popular avian species there—loons.

“Over a period of time, people there noticed that the numbers of loons were decreasing by a half or more,” Wood says. He was serving at the time on the board of the National Audubon Society. He and others hired biologists, and formed the Loon Preservation Committee, a project of New Hampshire Audubon.

That’s how Wood met Pokras, who had offered to do necropsies on the loons to determine their cause of death.

“He is not only a good scientist, but he’s an organizer as well. He’s a man who can raise money and direct people,” Wood says. “That is why I support his work at Tufts.”

Lyman Wood concurs with his father when discussing the research being conducted at the veterinary school. But he is also very aware of the business of education and concerned by what he sees occurring on many campuses. “Lots of money is wasted,” says Lyman Wood, also a Harvard graduate.

After working in the family jewelry business, Lyman became a partner in a business that leased and operated campus bookstores. He sold the business in 1990 but still works as a consultant. He is a trustee of Springfield College and chairs the President’s Advisory Council at Embry-Riddle University in Daytona Beach, Fla., where his son graduated.

“We look at where our kids went to school—if it was influential in their lives—and then we look at what real and significant results these schools can deliver from your donation,” Lyman says, adding that Tufts passed his test.

“It accomplishes quite a bit with what seems to me to be fewer resources than what similar veterinary schools enjoy,” he says. He also likes the fact that Tufts paid attention to his daughter, Emilia.

He likes the fact that when Emilia told administrators at the veterinary school that they were charging students too much for photocopies, the fee was reduced. And when she noticed that student walkways were snowplowed long after those around the Administration Building, the school made sure its snow crews changed their priorities.

“Well I wasn’t that vocal,” Emilia Wood says with a laugh from her home in Connecticut. “But I guess I did let things be known.”

She is a small animal internist at the Veterinary Referral and Emergency Center in Norwalk, and she has a good feeling about Tufts veterinary school.

“It was a good and thorough education, and yes, you did get the sense that the school cared about your point of view and listened to your concerns,” she said.

Emilia Wood understands that a lot of students coming out of any graduate school stagger under enormous debt, realize that their loans will adversely affect their earning power for years to come, and therefore vow that they’ll never give a dime to their alma mater.

“I can understand why they may feel that way, but I disagree,” she says. “The veterinary school helped me get where I am today. You can still get a lot out of it from keeping in contact with what is occurring there and using the school as a resource. Plus, I feel that giving something back is the right thing to do.”

Currently, two Tufts veterinary alums are doing internships in Norwalk with Wood. The Veterinary Center liked what it saw when Emilia did her internship there so they looked favorably on Tufts.

“I’m glad things like that occur and that I can help,” she says. “I’m happy I got involved with my fifth-year reunion last year. I like staying involved.”

John LoDico
When Tufts School of Veterinary Medicine opened in 1978, first- and second-year students studied on the health sciences campus in Boston, while third- and fourth-year students were based in Grafton 40 miles away. It was a division born of necessity. Tufts used its initial resources to build up clinical facilities in Grafton, and in time, created a world-class veterinary institution.

In 1993, the school began to carry out its long-held goal of unifying the classes when it opened the Franklin M. Loew Veterinary Medical Education Center. That facility allowed second-year students to study in Grafton.

Now another major turning point for Tufts veterinary students is under way. This September, all four classes will be united for the first time on the Grafton campus thanks to the Kresge Foundation and to the commitment of generous supporters.

Tufts is completing construction of a new facility that will contain 12,000 square feet of teaching laboratory and classroom space. In addition, the Hospital for Large Animals is being renovated to create an additional 7,750 square feet of instructional space, including a large lecture hall with built-in audio/visual and computer equipment.

The total cost of the building program is $3.65 million. The Kresge Foundation has endorsed this important step by awarding the school a $400,000 challenge grant to complete construction of the teaching lab and renovation of the hospital complex. Many generous donors already have contributed $2.35 million. Now the Kresge grant is contingent upon Tufts raising the remaining $900,000 by Dec. 1, 2000.

"When I became dean in 1996, the first item of business on my agenda was to unify the school on our Grafton campus," said Dean Philip C. Kosch. The students who have begun to dedicate their lives to animal care no longer will be completely separated from animals during their first year of studies. Our community will be whole, our purpose clearly defined, our mission strengthened by the transfer of all of our students and faculty to one central campus."

Kosch praised the Kresge Foundation for its support but cautioned that the school will lose the $400,000 challenge grant—a loss that will hit the tightly funded school hard—unless the challenge is met by December 1.

"The school needs its supporters to endorse a plan that has been in the making for more than 20 years: Create a special place, where dedication and brainpower come together for the benefit of all animals—and likewise for public health," Kosch said.

The Kresge Foundation, located in Troy, Mich., is an independent, private foundation created by personal gifts from Sebastian S. Kresge. It is not affiliated with any corporation or organization.

For information about making a gift in support of the Kresge challenge, contact Martha Clark, associate director of veterinary development, at (508) 839-7908, or e-mail her at martha.clark@tufts.edu.

Our generous supporters

Many individuals and foundations already have made generous donations to the teaching facilities at the veterinary school, assisting Tufts in unifying its veterinary medical education program on one campus. The students, faculty, administration and staff at the school gratefully acknowledge the following philanthropists:

- George L. Alden Trust
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- Mrs. A. Werk Cook
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- The Joseph M. Hamilburg Foundation
- Nancy and Noah T. Herndon
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- Mark Hirshe, D.D.S.
- Diana and Duncan Johnson
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- Anthony M. Schwartz, D.V.M.
- The Stoddard Charitable Trust
- Agnes Varis
- Dean K. Webster
- Shirley Windsor
- Wyman-Gordon Foundation
Health patrol

On Saturday, March 18, the state's 33 working patrol dogs once again came to Tufts University School of Veterinary Medicine for their annual medical checkups. During the three-hour State Police Canine Vaccination Clinic, held exclusively for Massachusetts State Police and their canine partners, the dogs were weighed, vaccinated for rabies, distemper and kennel cough and tested for heartworm. Since 1995, Tufts has provided free preventative checkups for the patrol dogs as well as year-round emergency and dental care for all canine units and state patrol horses.