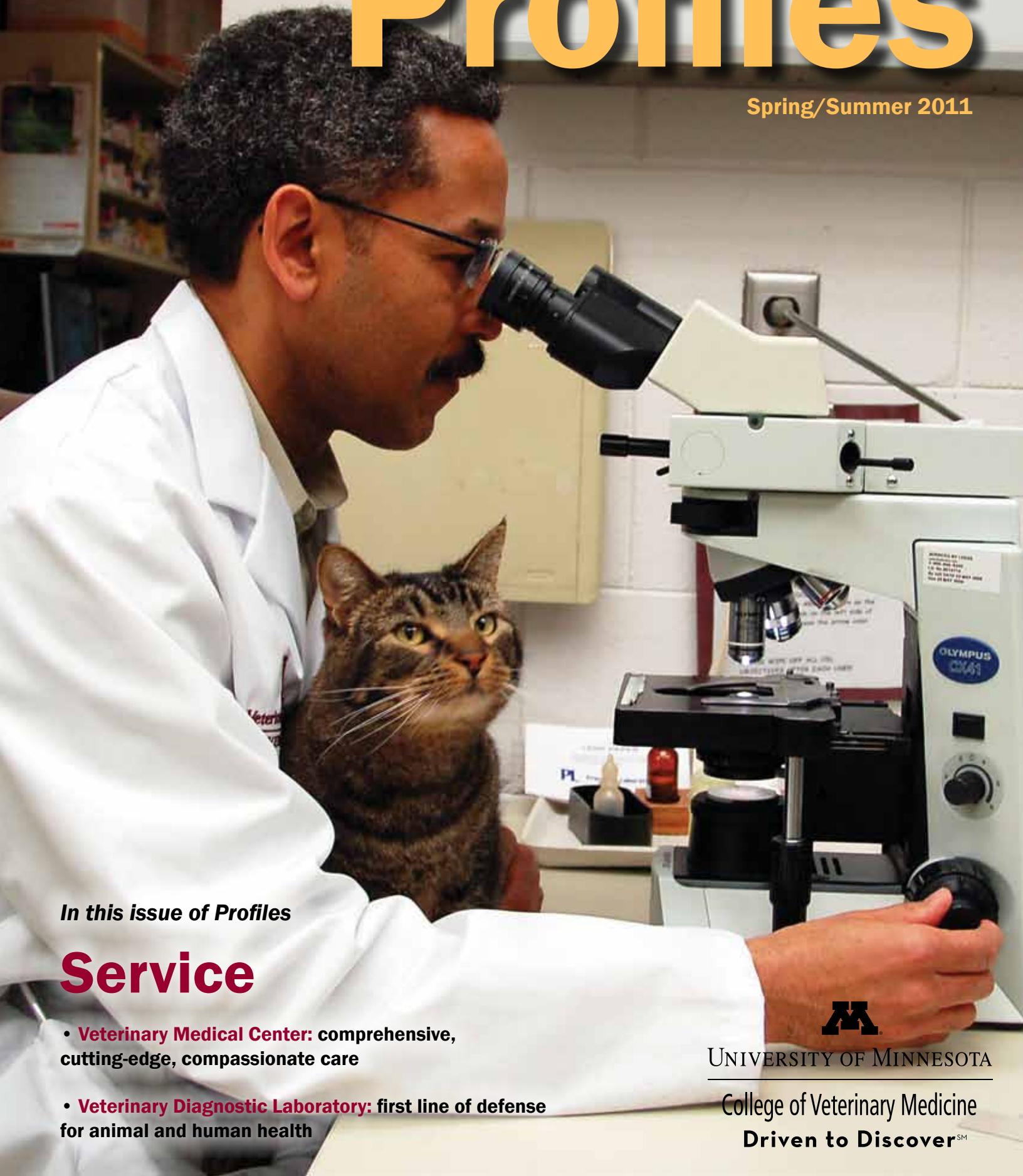


College of Veterinary Medicine

# Profiles

Spring/Summer 2011



*In this issue of Profiles*

## Service

- **Veterinary Medical Center:** comprehensive, cutting-edge, compassionate care
- **Veterinary Diagnostic Laboratory:** first line of defense for animal and human health



UNIVERSITY OF MINNESOTA

College of Veterinary Medicine

Driven to Discover<sup>SM</sup>

The College of Veterinary Medicine mission states that we work to improve the health of animals and people through education, research, and service. With our mission in mind, we highlighted several of our innovative approaches to education and many of our groundbreaking research efforts in the past couple of issues of *Profiles*. In this issue, we explore the service component of our mission, giving you a closer look at some of the unique, comprehensive, and vital services we provide.



Gandhi said that the “best way to find yourself is to lose yourself in the service of others.” After reviewing the wonderful stories in this issue of *Profiles*, I must say I have a newfound sense of pride in the work we do here at the College of Veterinary Medicine.

In this issue you will learn about some of the many services offered by the more than 16 departments and centers and more than 500 employees that comprise the CVM. Some of them have been offered for decades; others are new and cutting-edge; and others exist through our expanding partnerships and collaborations. More specifically, you will read how the College takes great pride in serving Minnesota livestock owners and the agriculture industry through our Veterinary Diagnostic Laboratory and how our Veterinary Medical Center provides companion animal and horse owners access to 15 different specialties utilizing a team care model to ensure compassionate care and the highest level of medical treatment. We also look at our smaller, specialized centers, like the Minnesota Urolith Center, which analyzes approximately 70,000 stone submissions per year, and The Raptor Center, which cares for hundreds of injured and ill birds of prey and is helping to preserve the endemic hawk population in the Galapagos.

The common denominator with all of our services is consistent quality. The entire CVM family of faculty, staff, residents, interns, and students strives to provide high-quality service to the many thousands of animals and clients we serve annually. I am particularly proud of what we accomplish here at the CVM and the amazing service provided by our College. This is especially relevant in these challenging economic times, when we have learned how to do more with less and still serve our clients and stakeholders.

We feel every animal and person we serve deserves our best!

With warm regards,

Trevor Ames, D.V.M., M.S., Diplomate ACVIM  
Dean

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*Dr. Jody Lulich evaluates a sample from a cat with urinary tract disease at the Veterinary Medical Center. Photo by Sue Kirchoff*

# Veterinary Medical Center

## *comprehensive, cutting-edge, compassionate care*

**T**he University of Minnesota Veterinary Medical Center (VMC) has served the community for more than a century, and its world-class reputation continues to spread.

“Patients come here from across the country and around the globe—even from as far away as India,” says Dr. David Lee, director of the VMC. “Minnesota is well-known for its leadership in health care, and that includes animals as well.”

Former University of Minnesota President Bob Bruininks and his wife, Susan Hagstrum, are clients of the VMC. In total, the couple has brought three dogs and four horses to the VMC for care.

“The Veterinary Medical Center provides the best care in the state and is on the cutting edge of new research,” says Hagstrum. “The veterinarians and veterinary technicians at the VMC take care of both you and your pets. I think of the faculty and staff as caring, compassionate companions. They care for the client as much as they care for the patient.”

The couple’s first horse, a champion, five-gated American saddlebred gelding named Arthur, developed Cushing’s disease at 24. “He also developed laminitis, which caused him to founder,” says Hagstrum. “Not knowing about his future, we headed off to the Equine Center, where he was cared for gently and lovingly until he died a few weeks later. The vets went to extraordinary lengths to make him comfortable.” Hagstrum is reminded of Arthur several times a day, whenever she looks at the dreamcatcher that VMC veterinary technician Amanda Kiger crafted from Arthur’s tail.

The VMC’s comprehensive care, coupled with a focus on compassionate, innovative treatment and research, makes it a valuable resource for animal owners.

“If you were diagnosed with a serious illness, you would want to go to a

medical center that provides great care but also offers access to leading-edge diagnostics and therapy through a demonstrated commitment to discovery,” says Lee. “World-renowned veterinary clinicians in the VMC are actively involved in leading clinical research and work closely with researchers—including colleagues in human and public health—to provide the most advanced care available. We are often viewed as the ‘Mayo Clinic of veterinary medicine,’ which I think accurately reflects our dedication to excellence and leadership in the profession.”

The VMC is one of the largest veterinary teaching hospitals in the United States and perhaps the world. It serves all species of animals and sees a total of nearly 40,000 cases each year. About 80 percent of its cases are referred by veterinarians from throughout the Upper Midwest and southern Canada.

“We are mainly a secondary and tertiary referral clinic, meaning most of our cases are referred by other veterinarians or veterinary specialists, but anyone can contact us to inquire about our services or make an appointment,” says Lee. The VMC also provides primary wellness care through its general practice service, as well as rehabilitation and complementary and alternative medicine, such as acupuncture. Besides its main facility at the University of Minnesota College of Veterinary Medicine in St. Paul, the



Former University of Minnesota President Bob Bruininks and Susan Hagstrum with Foster, a flat-coated retriever, who was treated at the Veterinary Medical Center. Foster died of cancer about three years ago.

VMC also includes the Piper Clinic in the Leatherdale Equine Center a few blocks away.

The sheer scale of the VMC offers advantages to clients. “We are the only institution in the metro where there are 60 veterinary specialists under one roof,” says Dr. Anthony Tobias, board-certified veterinary cardiologist. “There is a lot of internal consulting going on. If needed, a case can be seen by a whole range of specialists quickly and effectively.”

VMC patients may see specialists in anesthesiology, behavior, cardiology, complementary and alternative medicine, dentistry, dermatology, intensive care, internal medicine, medical imaging,

neurology, nutrition, oncology, ophthalmology, surgery, theriogenology, and urology and nephrology. In addition, they may benefit from supporting services such as rehabilitation, pharmacy, clinical pathology, a blood bank, and social work services. It is not unusual for more than a dozen people to be involved in a case at the VMC, carefully coordinating care behind the scenes to ensure a patient's total health is evaluated and addressed.

Nursing care is provided by more than 110 certified veterinary technicians, many with advanced certifications. Veterinary technicians are not required to be certified or licensed in Minnesota, but the VMC is committed to hiring the best and brightest to provide the quality of care expected at the VMC. "Our veterinary technicians are outstanding in their expertise, commitment to patient care, and compassion," says Lee. "It is not unusual for our clients to tell us they wish their own health care team was as good!"

As one of the few veterinary teaching hospitals in the country serving a major metropolitan area, the VMC also offers College of Veterinary Medicine students a rare opportunity.

"Veterinary students from across the nation select Minnesota in part because the Veterinary Medical Center sees so many cases each year," Lee says. Third-year students complete two clinical rotations, and senior veterinary students complete 26 two-week clinical rotations, four to six of which are external rotations completed in private practices or at other institutions.

"Our students learn how to multi-task; they see a lot of cases when they are on clinical rotations, so they're able to hit the ground running when they graduate," says Lee. "Regional practices benefit from that when they hire our graduates." Approximately 85 percent of all practicing veterinarians in Minnesota completed their clinical training at the VMC.



Veterinarians rush a patient to the emergency room at the Veterinary Medical Center. Photo by Sue Kirchoff

While cross-functional units help facilitate the VMC's team-based model, special-purpose teams such as the Animal Trauma Center and equine sports medicine focus on specific medical needs.

### Animal Trauma Center

The VMC's new Animal Trauma Center is the only veterinary trauma center in the state and one of the first in the nation. During peak season, the Animal Trauma Center sees as many as five or six cases per day. Major, a high-profile Roseville police dog, was one of the first patients to benefit from the Animal Trauma Center. After being stabbed several times in the line of duty last year, Major was rushed to the VMC, where a team of specialists quickly mobilized.

"Due to severe blood loss and penetrating wounds near his spinal cord, Major received a blood transfusion, advanced imaging (CT and MRI), and surgery—all within hours," says Dr. Kelly Hall, board-



As part of her cardiology rotation, Brittany Rizzo, class of 2012, assists Dr. Chris Stauthammer with an examination of Duke, a patient recovering from heart surgery. Originally from Naperville, Illinois, Rizzo is a D.V.M./M.P.H. student hoping to become a zoo veterinarian.

certified criticalist and head of the Animal Trauma Center.

To become an Animal Trauma Center, a veterinary clinic must have several specialty services, including a blood bank, medical imaging, surgery, anesthesia, nutrition, cardiology, ophthalmology, intensive care, and rehabilitation. “Certified veterinary technicians staff our intensive care unit around the clock, and doctors are available at all times in the hospital,” says Hall. “Having all of these pieces in one place makes our Animal Trauma Center unique.”

On a national level, critical care specialists are working to identify 10 to 20 similar centers across the country. The goal: to develop a network of trauma centers that would collaborate and share information to improve outcomes for animal trauma patients. “We are also defining and identifying standards that a veterinary trauma center would need to uphold to continue to be called a trauma center,” says Hall.

### Equine sports medicine

The Leatherdale Equine Center and Piper Performance Clinic were opened in 2007 in response to requests from area horse owners who wanted to extend the careers of their performance horses.

“It’s the most comprehensive sports medicine facility in the Midwest and one of the best equipped in the nation,” says Dr. Stephanie Valberg, board-certified veterinary internist and director of the Equine Center. About 25 percent of the Equine Center’s patients are referred from private practitioners, while the remaining 75 percent arrive through owners contacting the Equine Center directly.

Most of the horses presented to the Equine Center for sports medicine see a team of board-certified specialists in internal medicine, surgery, and rehabilitation therapy. “We also consult frequently with board-certified radiologists and use board-certified anesthesiologists,” says Valberg. But the full range of VMC specialists, from ophthalmologists to neurologists, can be called in when needed.



*Dr. Megan Swaab performs an ultrasound exam on an Equine Center patient with assistance from Michelle Briese, certified veterinary technician.*



*A horse undergoes computerized gait analysis at the Equine Center. Photo by Kelly Vallandingham*

For instance, an equine surgeon recently led the examination of a western pleasure horse, but specialists in sports medicine, rehabilitation therapy, and internal medicine were also involved. This horse’s main symptoms were upper airway noise and reduced exercise tolerance. The surgical team first evaluated the horse at rest using an endoscope to determine whether anything abnormal was blocking his upper airway. The equine sports

medicine team then evaluated his upper airway using an endoscope while he was in a canter on the Center’s high-speed treadmill. Then, internal medicine specialists performed a full evaluation of his lower airway.

Horses with symptoms of lameness are frequently referred to the Piper Performance Clinic, where specialists evaluate horses in motion in a 100-foot by 200-foot indoor arena. A force plate along the lameness runway can measure the force in which a horse’s limb hits the ground. Other state-of-the-art diagnostics include a powerful digital radiograph machine that provides precision images of a horse’s large bones and joints, new ultrasound machines that allow detailed views of soft tissues such as tendons and ligaments, and a bone scan machine.

Equine sports medicine also offers rehabilitation services that include an underwater treadmill, deep heat ultrasound, and neurological electrical stimulation. Even sound horses can benefit from the clinic’s rehabilitation services, which help horses build muscle mass, strength, range of motion, and cardiovascular fitness.

## Combining leading-edge technology and expertise to treat cancer

The VMC offers diagnostic and therapeutic capabilities considered leading-edge even for human medicine. The hospital's oncology service benefits from the VMC's radiation therapy facility, including a linear accelerator, combined with advanced diagnostic imaging by CT and the only 3-Tesla MRI unit for veterinary use in the country. The oncology team also has access to the most current protocols for chemotherapy and immunotherapy.

"When an animal is referred to our oncology service, one of our three board-certified veterinary medical oncologists determine the diagnostics, whether that's collecting a biopsy or sending the patient to medical imaging," says Dr. Mike Henson, board-certified medical oncologist. "We also determine the treatment options." Depending on the type and stage of the cancer, oncology may refer the patient to surgery for tumor removal and medical imaging for radiation therapy. Chemotherapy and immunotherapy are performed within the oncology service, which also includes chemotherapy technicians.

"We present a comprehensive set of options to our clients, so they can choose a treatment for the patient that is comfortable for the family, maintains a quality of life for their friend, and attacks the cancer," says Henson. For tumors confined to one location, surgery provides the best chance for cure. When a surgical cure is not feasible, radiation therapy provides the next best option. Similar to human hospitals, the VMC's linear accelerator delivers radiation therapy to maximize tumor control while minimizing the risk of side effects; the linear accelerator can deliver either high-energy electron or photon beams.

For cancers that are not treatable, the oncology team discusses end-of-life planning and palliative care options with clients. The oncology team is also involved in research, often in collaboration with investigators studying similar cancers in humans. This sometimes provides



*Dr. Mike Henson examines Zoe, a North Dakota cat undergoing treatment for mammary cancer. Photo by Sue Kirchoff*

clients with an option to enroll their animal in a clinical trial when no other treatment options are available.

## Healing hearts

The VMC's cardiology service is unique in that it is the only one in the state with board-certified cardiologists. Staffed by two board-certified cardiologists, two cardiology residents, and a cardiology technician, the service has access to a wide range of diagnostic capabilities to assess cardiovascular health, including radiography to diagnose congestive heart failure; electrocardiography to measure electrical activity of the heart and detect

subtle arrhythmias; ultrasonography to assess heart size, function, and defects and evaluate the overall morphology of the heart valves; and an MRI unit and fluoroscope to detect and treat congenital heart defects. A new 64-slice CT unit being installed this fall will further expand cardiology's diagnostic capabilities.

"There is an extremely high incidence of heart disease in veterinary patients," says Dr. Chris Stauthammer, board-certified veterinary cardiologist. "One in seven older dogs will have heart disease. With treatment, these animals can have a great quality of life."



*Dr. Chris Stauthammer does a recheck exam on Duke, a VMC patient who had surgery for tetralogy of Fallot, a complex congenital heart defect. Photo by Sue Kirchoff*

Most cardiology patients are treated medically, but Tobias and Stauthammer implant 12 to 15 pacemakers in dogs and cats each year to correct slow heartbeats. Congenital heart defects also require interventional procedures, including per-catheter balloon dilation for pulmonic stenosis and per-catheter occlusion treatment to correct patent ductus arteriosus (PDA). Developed by Tobias

and Stauthammer in collaboration with AGA Medical Corp., these revolutionary treatments eliminate the need for open-chest surgery. "These minimally invasive procedures have been the major thrust of our research for the past five years," says Tobias. "The per-catheter occlusion procedure for PDA occlusion is now being used throughout the world."

## Minimally invasive orthopedic surgery

A pioneer in minimally invasive orthopedic surgery, the VMC's surgery service sees 300 to 400 ruptured cruciate ligaments each year, almost all referred by other veterinary practices.

Minimally invasive surgery can be performed on any joint for a wide range of orthopedic conditions. It requires very short incisions, called "stab" incisions, compared with standard surgery, which requires cutting through muscle tissue and opening a joint.

"Less tissue damage leads to less post-operative pain and discomfort," says Dr. Liz Pluhar, board-certified veterinary surgeon. In general, minimally invasive surgery results in shorter hospital stays and a faster return to normal activities.

"We have been doing arthroscopic surgery for at least 15 years, prior to it becoming mainstream in veterinary medicine," says Dr. Mike Conzemius, board-certified veterinary surgeon and pioneer in veterinary arthrology. "It's routine for us." Unlike conventional surgery, which allows the surgeon to view the surgical site directly, arthroscopy requires steady hand-to-eye coordination as a camera attached to an arthroscope projects an image of the surgical site onto a large screen. "Normally you look right at what you are doing," says Conzemius. "This is more video game-like. You aren't moving things by looking at your hands. You are looking at the screen."

## Blood donor program

Supporting services round out the comprehensive care offered by the VMC, giving it even more depth and breadth. The VMC's blood donor program, the largest veterinary blood bank in the state, provides an average of 200-plus units of canine red cells and roughly 50 units of feline red cells each year, in addition to about 150 units of canine plasma and 15 units of feline plasma, says Beth Olmstead, certified veterinary technician, who runs the blood donor program.

Currently the donor program relies on four cats living in foster homes, 12 volunteer



Certified veterinary technicians Beth Olmstead and Vickie Skala prepare Nick for a blood draw. Nick has type B blood, found in less than 1 percent of the cat population. Photo by Sue Kirchoff

cats belonging to clients, students, staff, and faculty, 12 foster dogs, and 21 volunteer dogs. “Our goal is to have all of our blood donors in foster families while they are in the program,” says Dr. Jane Quandt, board-certified veterinary anesthesiologist, who helps manage the program. “As an incentive, we supply their food, provide their heartworm preventive, and take care of their veterinary needs. Foster animals get a dentistry, and if they haven’t been spayed or neutered, we take care of that, too.”

Olmstead provides Nick, one of the donor cats, with a foster home. Nick was accepted into the blood donor program because he had type B blood, found in less than 1 percent of the cat population. Since Nick entered the program, his donations of blood have helped save the lives of feline patients referred or brought to the VMC in need of a transfusion. A local veterinary practice and a clinic in Maryland have also used Nick’s blood to transfuse two of their feline patients.

### The ‘heart’ work of veterinary medicine

Many of the VMC’s patients have advanced illness, severe injuries, or rare conditions. The emotional aspect of an elderly or critical patient’s care can be magnified for attending staff, students,

and clients. To professionally address this, Jeannine Moga, a licensed clinical social worker and director of the VMC’s social work services program, has been training staff and students on the human aspect of veterinary care since 2004.

“I teach them how to work with grief and loss in a veterinary setting, how to deal with conflict, and how to manage stress and the emotional aspect of their work,” says Moga. This training helps students and staff develop professional, empathetic bedside manners while learning to sense whether they are effectively communicating with clients.

Moga also offers end-of-life planning for people who face the imminent loss of a pet. This free service is one of only 11 comparable services nationwide.

“In any given year, we usually work with 350 to 400 cases, the vast majority of which are related to end-of-life planning or pet loss,” says Moga. When people are not ready for humane euthanasia for their animals, social work services can also recommend home hospice through local providers.

For people who have lost a beloved animal, social work services offers grief counseling as well as a biweekly animal

bereavement group, the Companion Animal Love, Loss, and Memories Group. About half of those who participate are VMC clients, while the others have heard about the group through a friend, family member, or veterinarian.

Companion animals continue to play a central role in people’s lives, particularly with family size declining and with family members often separated by considerable geographical distances. “Studies have shown that people with pets tend to be healthier and live longer,” says Moga. “Animals are social lubricants; they help people communicate with other people. Animals are also a great source of emotional support.”

Learn more about the Veterinary Medical Center at [www.cvm.umn.edu/vmc](http://www.cvm.umn.edu/vmc). For an appointment, call 612-626-VETS (8387).



### Lasting memories

Clients and others who want to provide a lasting legacy in honor of their pets can donate to the College of Veterinary Medicine’s Nestlé Purina Memories Garden. Donors receive a personalized remembrance brick placed in an outdoor meditative garden, an invitation to a memorial ceremony, and a subscription to *Profiles*. Gifts to the Memories Garden help fund the VMC’s social work services program. For more information, contact Sue Allard at 612-624-7624 or [allar025@umn.edu](mailto:allar025@umn.edu).

# Minnesota Urolith Center

## waging war on urolithiasis for 30 years

**F**ounded in 1981, the Minnesota Urolith Center was developed to help veterinarians help their patients by investigating the causes and cures of the painful and sometimes life-threatening condition called urolithiasis, the formation of stones in the urinary tract.

Urinary stones come in a variety of shapes and sizes and are composed of one or more biogenic minerals. The most effective treatment is dependent on knowing the exact mineral composition of the stone. That's where the Minnesota Urolith Center excels. Using state-of-the-science diagnostic techniques, the Urolith Center analyzes approximately 70,000 stone submissions per year. In the 30 years since its inception, the Center has analyzed stones from over 670,000 patients consisting of more than 90 species of companion animals (including dogs, cats, rabbits, ferrets, guinea pigs, hamsters, and birds), farm animals (including horses, cows, sheep, goats, and pigs), and wild animals (including elephants, dolphins, whales, giraffes, hippopotamuses, kangaroos, minks, pandas, snakes, tortoises, turtles, fish, lions, and wolves) from veterinarians in more than 67 countries all over the world.

“Our purpose is to help animals by collecting, evaluating, and sharing epidemiologic data about naturally occurring stone disease and providing diagnostic information about risk factors



Minnesota Urolith Center staff. Seated, from left, are Drs. Carl Osborne (with Frazier) and Jody Lulich. Middle row from left: Dr. Hasan Albasan, Sandy Leach, Michelle Buettner, and Lori Koehler. Back row from left: Amy Cokley, Paige Ashton, Lisa Ulrich, Laurie Swanson, and Sarah Davidson.

to our veterinary colleagues,” says Dr. Carl Osborne, Minnesota Urolith Center founder and professor in the Veterinary Clinical Sciences department. “This type of information cannot be obtained from fee-for-service laboratories. The Urolith Center is unique in its ability to obtain data from large populations of animals, thus enhancing discovery of demographic, environmental, and etiologic associations.”

Struvite (magnesium ammonium phosphate) and calcium oxalate are the two most common stone types. While most calcium oxalate stones require either surgical or non-surgical techniques for removal, a special food—developed by the Urolith Center in partnership with Hill's Pet Nutrition—successfully dissolves struvite stones. In 2010, struvite uroliths comprised 46 percent of cat stones and

40 percent of dog stones. The Urolith Center continues to investigate therapies to dissolve and prevent calcium oxalate stones, which comprised 42 percent of cat and dog uroliths submitted in 2010.

To improve the management of stones that cannot be medically dissolved, the Urolith Center has pioneered non-surgical techniques to move and remove stones from the lower urinary tract of dogs and cats. These techniques include voiding urohydropropulsion, catheter retrieval, basket retrieval, and retrograde urohydropropulsion,

a procedure in which stones lodged in the urethra are flushed back into the bladder.

When these strategies are not an option, the Urolith Center has another weapon in its arsenal: laser lithotripsy, a minimally invasive procedure in which a laser beam is used to pulverize bladder or urethral stones. “Minimally invasive stone removal is a more compassionate choice,” says Dr. Jody Lulich, co-director of the Minnesota Urolith Center and a professor in the Veterinary Clinical Sciences department.

The Urolith Center does not collect a fee for urolith analysis. This service is supported by an educational gift from Hill's Pet Nutrition. Additional vital support comes from contributions by veterinarians and pet owners worldwide. Learn more at [www.cvm.umn.edu/depts/MinnesotaUrolithCenter](http://www.cvm.umn.edu/depts/MinnesotaUrolithCenter).



Urinary stones come in a variety of shapes and sizes. The Minnesota Urolith Center analyzes approximately 70,000 stone submissions per year.

# Veterinary Diagnostic Laboratory

*first line of defense for animal  
and human health*



Veterinary Diagnostic Laboratory, St. Paul Campus

**P**athologists at the University of Minnesota Veterinary Diagnostic Laboratory (VDL) help track down everything from chronic wasting disease in wild deer to lead poisoning in dairy cattle to potential causes of human disease. The state's veterinarians, livestock farmers, and animal breeders, who depend heavily on the honed skills of the VDL's investigative scientists, submit approximately 60,000 cases each year to the world-class facility. In turn, the VDL performs 1.4 million tests on the submissions.

The VDL primarily works with practicing veterinarians to diagnose and control animal disease outbreaks, but its duties extend far beyond protecting animals. The state-of-the-art lab also works closely with the Minnesota Board of Animal Health (BAH), Minnesota Department of Natural Resources (DNR), Minnesota Department of Agriculture, and Minnesota Department of Health to ensure that both the food supply and human population are safe from animal pathogens caused by disease outbreaks in wildlife and livestock.

The VDL is the only laboratory in Minnesota accredited by the American Association of Veterinary Laboratory Diagnosticians (AAVLD), the highest accreditation possible. Only an AAVLD-accredited lab can conduct official testing for the state. Without an accredited laboratory system in Minnesota, all official tests would have to be sent out of state, resulting in increased testing costs and a delay in obtaining test results. Containing animal disease outbreaks requires quick diagnosis, so any delay could be devastating to Minnesota's livestock industry.

"If foot and mouth disease were to ever enter Minnesota, it would be so economically devastating to agriculture that the governor would probably commandeer this laboratory," says Dr. Jim Collins, director of the VDL. In 2009, Minnesota's cash receipts from livestock totaled \$4.9 billion, or 37 percent of all farm cash receipts of \$13.3 billion, according to the Minnesota Department of Agriculture. However, those figures are understated because the state's livestock

sector consumes 20 percent of Minnesota's corn and 14 percent of its soybeans, according to the Minnesota Food and Farm Coalition. Without livestock, the coalition notes that the state's agricultural production and processing sectors would lose half of their economic value.

The VDL is also part of the National Institute of Food and Agriculture's National Animal Health Laboratory Network. Network members have agreed that if one lab has a foreign animal disease event, the others will receive surplus samples for testing. When California was battling an outbreak of exotic Newcastle disease, the VDL sent a pathologist to that state to help with testing.

"If a surge or foreign animal disease event were to occur in the state, we would drop everything to respond," says Collins. Diseases that would command immediate attention include highly pathogenic influenzas, pseudorabies, foot and mouth disease, and hog cholera. "We used to have hog cholera in the United States, but we spent great sums of money to eradicate

it,” says Collins. “Should it occur here again, we would mobilize in the same way.”

### International acceptance

Minnesota’s livestock industry depends on moving both animals and animal food products across state and national borders. AAVLD accreditation requires that the VDL use the globally accepted ISO/IEC 17025 testing procedures and calibrated equipment.

“International trading partners accept our testing procedures,” notes Collins. “Compliance creates a large cost for us, which is why our fees are not meant to be completely user-driven. Commercial and non-accredited public labs may be able to test cheaper and faster, but not better.”

For example, the VDL recently tested a group of pigs being shipped to another country for brucellosis. VDL tests showed the pigs were negative for the disease, but when a federal lab in the receiving country tested the pigs, they tested positive.

“We asked the other lab to repeat the testing because we were confident in our standards,” says Collins. Repeat tests were negative. “We saved the company shipping the pigs \$500,000,” he adds.

The AAVLD determines the appropriate ratio for an accredited lab’s funding at 50 percent generated from user fees and 50 percent through public support.

“The accrediting body doesn’t want us to become dependent on user fees because it doesn’t want us to drop critical testing on a foreign animal disease because we need to make money from user fees,” Collins explains. Currently, 70 to 80 percent of the VDL’s funding is generated through user fees. “If there is no improvement in our user fee dependency, we will lose our accreditation,” says Collins.

Prior to the early 1990s, VDL funding came from “special allocations” provided by the state, but those ended. Now, state funding to the University of Minnesota is provided as a lump sum. This money is then administratively divided among various University functions.



Don Ariyakumar (seated) and Anibal G. Armien examine a rabbit haemorrhagic disease sample with the aid of the VDL’s electron microscope. Rabbit haemorrhagic disease is a highly infectious and often fatal disease that affects domestic rabbits. Photo by Sue Kirchoff

## Electron microscopy

**W**hen veterinarians are faced with a diagnostic dilemma—when a diagnosis cannot be made by conventional histology or immunohistochemistry of abnormal tissues and more help is needed to reach a final diagnosis—they call in the heavy hitters: the VDL’s electron microscopy service.

An electron microscope uses a beam of electrons to create an image of the specimen. It is capable of much higher magnifications (up to 500,000x) and has a greater resolving power than a light microscope, allowing much smaller objects to be seen in finer detail. This fine detail is often what helps crack the tough cases.

The VDL’s electron microscopy services are provided by Anibal G. Armien, D.V.M., Ph.D., a board-certified veterinary pathologist; Don Ariyakumar, electron microscopy specialist; Dean Muldoon, electron microscopy technologist; and Jan Shivers, section head. In addition to providing diagnostic services, the team conducts pathogen surveillance, research on disease mechanisms, validation of new diagnostic technology, training of veterinary residents, and monitoring of emerging diseases in wildlife.

What are some of the electron microscopy team’s more exciting diagnoses? Scientists were able to—

- Diagnose poxvirus in wild ruminants and calicivirus in domestic rabbits within 30 minutes of sample receipt, which allowed immediate response to outbreaks in 2010.
- Detect and identify rotavirus from a cell culture that had previously tested PCR-negative. Rotavirus causes severe diarrhea in young animals and people.
- Detect and identify viruses of unknown classification in fish cell cultures.
- Definitively diagnose primary ciliary dyskinesia in companion animals. Ciliary dyskinesia is an inherited disorder of the cilia, the microscopic hair-like cells in the respiratory system.

While other laboratories in Minnesota have electron microscopes, the VDL’s electron microscopy facility is the only one that provides complete diagnostic results and evaluation by a board-certified veterinary pathologist.

# Molecular diagnostics

Capable of testing 500-750 samples per day, with same-day results for many tests, the VDL's molecular diagnostics laboratory is among the most advanced and high-volume laboratories in the United States.

## Benefits of having an official lab

As the official lab of the Minnesota Board of Animal Health, the VDL tests for routine animal diseases as well as 32 reportable domestic diseases and a host of foreign animal diseases.

“We rely on the Veterinary Diagnostic Laboratory for emergency preparedness, disease surveillance, and detection of emerging diseases as well as the routine testing they do for us,” says Dr. Bill Hartmann, executive director of the BAH. “Without the Veterinary Diagnostic Lab, our lab work would have to be done in another state, and that lab’s responsibility would be to its own state first, and to us second. Now, the Veterinary Diagnostic Laboratory is available to respond to any emergency testing that’s necessary.” For instance, when the H1N1 virus—a reassortment of human, swine, and poultry strains—entered the United States from Mexico, the Veterinary Diagnostic Lab was the first lab to discover the virus in pigs.

The VDL also works closely with the DNR to monitor numerous diseases, including bovine tuberculosis and chronic wasting disease in white-tailed deer, which can spread to other ruminants. The highly contagious and devastating nature of these diseases requires the DNR, VDL, and BAH to coordinate their response to contain potential outbreaks.

In January 2011, after testing 900 samples obtained from Minnesota deer for chronic wasting disease, the VDL found a positive sample. The response team determined that the event was both recent and containable, and that it would pay to continue to manage and eliminate the disease. Tuberculosis, which was found in both wild deer and cattle in northwestern Minnesota, has been contained, and the state of Minnesota submitted an application for statewide bovine tuberculosis-free status in late April.

Collins’ group also plays a leading role in ensuring the food supply is safe by working closely with the Department of Agriculture. For instance, VDL pathologists found lead in two bovine

Molecular diagnostic tests analyze genetic content for disease information, identifying a disease or the predisposition for a disease by analyzing the DNA or RNA of an organism. These tests may involve sequencing specific regions of DNA to identify genetic mutations or detect small amounts of viral or bacterial DNA in clinical samples.

The 20 people who work in the molecular diagnostic laboratory perform tests and procedures for dozens of viruses, including avian metapneumovirus, bovine viral diarrhea, influenza, porcine reproductive and respiratory virus (PRRSV), and more; bacteria such as salmonella and streptococcus; and other conditions such as exercise-induced collapse in dogs, polysaccharide storage myopathy in horses, and freemartin in cattle. The VDL also uses molecular diagnostics to rapidly detect, type, sequence, and differentiate strains of the same pathogen, such as the different strains of influenza virus—making Minnesota one of the best-prepared states for dealing with avian or swine influenza.

In 2005, VDL scientists developed a molecular test to simultaneously detect North American and European strains of PRRSV, which transformed PRRSV diagnosis by providing more accurate and sensitive detection of the virus at half the cost. The PRRSV test is now the most common test done by the molecular diagnostics lab. Approximately 5,000 PRRSV tests are done each month.

“For PRRSV, we offer same-day results for samples from boars,” says Dr. Albert Rovira, a pathologist in the molecular diagnostics laboratory. “This is very important because this virus can be transmitted through semen. Producers wait for our results and only inseminate the sows when they know the boars are negative.” Other common tests include tests for swine influenza virus, *Mycoplasma hyopneumoniae*, and porcine circovirus type 2.

Because of patents and license agreements awarded to research scientists at the College of Veterinary Medicine, the Minnesota Veterinary Diagnostic Laboratory is the only laboratory in the United States licensed to provide tests for some diseases, such as canine exercise-induced collapse, equine malignant hyperthermia, equine polysaccharide storage myopathy, and Leonberger polyneuropathy.



Assistant scientist Mandy Foss adds RNA template to a 96-well plate so she can subtype swine influenza virus.

blood samples submitted by a dairy farmer who had accidentally ground up a lead battery in his chopper. The cows started getting sick after lead fragments were unintentionally mixed in with their rations. Upon detecting lead in the samples, Collins called the BAH, which in turn alerted the Minnesota Department of Agriculture, so that neither the cows nor their milk made it into the food supply. “This incident led to a new policy: Any suspicious chemical or toxin is now a reportable disease in Minnesota,” notes Collins.

The line between human and animal health continues to blur, and the VDL’s role in human health has proven vital. For instance, when workers at meat packing plants contracted a mysterious neurological disease in 2007, the Minnesota Department of Health turned to the VDL. Collins’ group tested the blood samples of the Minnesota workers to eliminate the possibility that a pig disease had crossed the species barrier to infect the workers.

“The Veterinary Diagnostic Laboratory was a big player in the plant processing case,” says Dr. Joni Scheftel, state public health veterinarian. Scheftel says that situations involving public health and animal health arise on an almost weekly basis and that the VDL and Minnesota Department of Health frequently work together.

“In 2007, the Veterinary Diagnostic Laboratory was instrumental in helping us make zoonotic diseases of public health significance reportable by veterinarians, which really helped the collaboration between animal health agencies such as the diagnostic lab and the Department of Health,” Scheftel says. She notes that were the VDL not operating, the state would definitely see an impact on public health. “Outside labs would not pick up the phone and call us when there is a public health concern like the Veterinary Diagnostic Laboratory does,” Scheftel adds. The VDL, BAH, and the Department of Health also each play an important role in testing and investigating suspect rabies cases in the state.

## Quality Central

In collaboration with the College of Veterinary Medicine, the VDL is expanding its successful quality assurance program to support a variety of laboratory teams inside and outside the College. A team of scientists, called “Quality Central,” is working with a growing roster of research and service laboratories to integrate quality management software and quality assurance practices.

“Quality Central is scientists supporting scientists,” explains Dr. Rebecca Davies, director of the Quality Central program. “We provide the support and tools for laboratories to design, integrate, and execute quality assurance plans that demonstrate their ability to meet quality standards, provide world-class service, and promote scientific excellence.”

Davies stresses that “the quality was always there” at the VDL and College of Veterinary Medicine. It’s just that there was no systematic way to track it, to provide consistent documentation for traceability, or to use established metrics to assess opportunities for improvement.

“My dream is to take what we’ve learned at the VDL and share our resources—to make it easier for research and collegiate teams to adopt quality principles so

each group won’t have to re-create the required structures,” says Davies. She envisions a collegiate “quality enterprise,” with Quality Central supporting a centralized quality assurance program, eliminating duplication of effort, and removing the roadblocks typical in academic settings that try to implement quality assurance programs.

“It’s a lot of work, but it’s very rewarding once the infrastructure is in place,” she says. “The benefits of participating are profound.”

Among the research and service teams Quality Central is currently working with are—

- The Clinical Investigation Center, which develops and facilitates veterinary clinical trials and translational research studies at the College of Veterinary Medicine
- The University of Minnesota’s Schulze Diabetes Institute, which provides research and patient care in organ transplantation as an advanced treatment for diabetes
- Spring Point Project, a Minneapolis-based nonprofit organization that provides a source of pig islet cells to accelerate the availability and affordability of islet transplantation to cure diabetes

To learn more about Quality Central, call 612-626-2118 or e-mail [qcentral@umn.edu](mailto:qcentral@umn.edu).



The Quality Central team, from left, includes Carrie E. Wees, senior scientist/quality coordinator; Margret Tavai-Tuisaloo, administrative assistant; Dr. Rebecca L. Davies, associate clinical professor; and Katrina L. Laube, scientist/quality coordinator.



Jim Collins, director of the Veterinary Diagnostic Laboratory Photo by Sue Kirchoff

### Irreplaceable services

In addition to its role in human and animal health, the VDL provides an irreplaceable service to clients and future veterinarians. Since 2002, the VDL has provided its clients with online access to test results. Roughly 12 percent of the VDL's more than 4,000 active clients access their results in real time, and the results receive approximately 75,000 hits per year, says Mary Thurn, analyst with the University's Auxiliary Services Technology. Clients also download online results from about 20,000 cases each year to merge with their own information systems, and last year, clients submitted 4,000 cases via a Web interface. Each week, Thurn also handles an average of four to five ad hoc queries submitted by clients or VDL pathologists who are typically looking for information on antibiotic susceptibilities or site-specific information on a particular disease.

The unique position of the VDL and its highly skilled staff provide a premier educational experience for senior veterinary students, who are required to spend two weeks in the VDL learning pathology. Students in the food animal track can choose to spend an additional two weeks honing their investigative skills.

"They take a history, collect the right samples, and select the appropriate tests as part of their investigation. They then present one of their diagnostic investigations to VDL faculty and staff," says Collins. When they graduate, these students become clients of the VDL and transfer their knowledge to their clients and staff. "It is a continuous education loop," Collins says.



# Minnesota Poultry Testing Laboratory

*helps keep state's poultry industry strong, plays critical role in food safety*

Located in the heart of the state's poultry industry, the Minnesota Poultry Testing Laboratory (MPTL) has been testing samples from flocks, hatcheries, and poultry processing plants for avian diseases since the 1960s. Today, with poultry operations becoming larger and more concentrated, highly pathogenic diseases emerging as a threat overseas, and the need for a wholesome, safe food supply, the mission of the MPTL becomes all the more crucial.

Located in Willmar, Minnesota, and staffed by nine University employees and one Board of Animal Health veterinarian, the MPTL is a collaborative venture of the Minnesota Board of Animal Health and the University of Minnesota College of Veterinary Medicine Veterinary Diagnostic Laboratory.

"Regionally, we are located well to respond to the poultry industry and its needs," says Dr. Dale Lauer, director of the MPTL and a veterinarian with the Minnesota Board of Animal Health. Lauer's group conducts more than 300,000 tests each year to ensure that flocks in Minnesota, the Dakotas, Iowa, and Wisconsin are disease-free. The primary diseases monitored for by the lab's testing programs are mycoplasma, salmonella, and avian influenza.

The MPTL certifies flocks, hatcheries, and poultry processing plants under the National Poultry Improvement Plan (NPIP), a cooperative federal, state, and industry program developed to prevent, control, and eradicate poultry diseases. The certification program identifies flocks, hatcheries, poultry processing plants, and dealers that meet disease control standards

so that customers can be sure the poultry they purchase has been tested and is free of certain diseases.

Certification under this plan has played an integral role in the development of Minnesota's poultry industry. The state is the national leader in turkey production and a top producer of broiler chickens and table eggs. Participation in the NPIP certification programs allows hatcheries to ship hatching eggs and baby poultry throughout the country and poultry processing plants to ship their product across the country and throughout the world.

"One of the reasons the poultry industry is so successful in Minnesota is that we have the necessary infrastructure in place, and the Minnesota Poultry Testing Lab is a huge part of that," says Steve Olson,



Tiffany Blair, principal laboratory technician, performs serology diagnostics at the Minnesota Poultry Testing Laboratory. Photo by Lucinda Dahlberg

executive director of the Minnesota Turkey Growers Association and the Broiler and Egg Association of Minnesota.

One of today's biggest disease concerns is avian influenza, also referred to as bird flu. "Even though we have never seen H5N1 in the United States, customers purchasing poultry meat, eggs, or live birds want to make sure they are tested and disease-free," says Lauer. All flocks are tested prior to going to a Minnesota or an out-of-state poultry processing plant.

Like the Veterinary Diagnostic Laboratory, the MPTL is the official testing lab for the state and is accredited through the American Association of Veterinary Laboratory Diagnosticians, the highest accreditation possible. Without an accredited laboratory system in Minnesota, all tests required for commerce or trade would have to be sent out of state, resulting in increased testing costs, delayed test results, and potentially a reduced business climate.

The lab also works directly with poultry producers. In 2009, the Veterinary Diagnostic Laboratory moved all poultry serologic testing to the MPTL. Serologic testing provides producers with information on the effectiveness of their vaccination programs, whether a disease problem is developing, or whether a disease problem is present in their operation. The move to centralize some poultry services provides poultry producers with easier methods to submit samples and retrieve test results.

"With necropsies, molecular diagnostics, and other diagnostic testing remaining at the Veterinary Diagnostic Laboratory, test results are combined with our serologic results for a complete diagnostic report that is accessible online," says Lauer. "It's fantastic for producers. Now they have a report that provides real-time, online results that can be downloaded into their own database and merged, ready for analysis by their veterinarian or management team."

Through its testing services, the MPTL also manages surveillance programs, documents disease trends, and develops disease-prevention strategies. "We provide a baseline of information on the live production side, so the industry can track disease trends and implement improvement strategies," says Lauer. The MPTL's ability to conduct both state-mandated testing and diagnostic testing provides a complete health program for Minnesota's \$1.2 billion poultry industry.

"Minnesota's avian disease monitoring and eradication program is recognized by other states as a model program," says Olson. "Minnesota also has an international reputation as a leader in avian health, in part because of the MPTL and its staff. The MPTL has been instrumental in helping the Minnesota poultry industry identify and monitor for disease, and if a disease is detected, the lab helps the industry monitor and work through the problem."



Katie Leegaard, principal laboratory technician, conducts testing for avian influenza. Photo by Lucinda Dahlberg

# Galapagos

partnership enlists expertise  
of

## The Raptor Center

*TRC develops  
groundbreaking  
mitigation plan for  
Galapagos hawks*

*Dr. Julia Ponder holds the first Galapagos hawk captured as part of the mitigation plan. Photo by Francesca Cunningham*

In 2010, as part of an ongoing commitment to rid the Galapagos Islands of invasive species, Galapagos National Park and the Charles Darwin Foundation targeted non-native rats for eradication. The organizations partnered with Island Conservation, a group dedicated to preventing extinctions by removing invasive species from islands, to embark on a pilot project to remove black rats and Norway rats from 10 small islands in the Galapagos.

The only problem was that Galapagos hawks, a species found only in the Galapagos Islands, often prey on the rats, which would make the birds highly susceptible to secondary poisoning during the eradication process. Because Galapagos hawks were found on four of the islands targeted for the pilot program, the project could not go forward without a mitigation plan to protect the hawks. When the partners realized they needed expert assistance to design and implement a mitigation plan, Dr. Patricia Parker of

the University of Missouri, St. Louis, another collaborator on the project, sought the assistance of The Raptor Center (TRC) at the University of Minnesota College of Veterinary Medicine.

“For the staff at TRC, the decision to participate was easy,” says Dr. Julia Ponder, executive director. “The project clearly aligned with our mission, was an excellent example of the veterinarian’s role in conservation, and required expertise that The Raptor Center is uniquely positioned to provide.” During the next few months, e-mail correspondence reached a crescendo as a mitigation plan was developed to protect the hawks.

An estimated 15 to 20 hawks were at risk during the project, and the team decided to bring these hawks into captivity temporarily during the rodent eradication project. TRC designed temporary aviaries so that during captivity, the hawks could be housed on an uninhabited island with

a nearby field camp for the caregivers. The risk of a toxic environment for the hawks was expected to be three to four weeks. While ongoing monitoring throughout the project would be used to inform final decisions, the mitigation plan called for seven to eight weeks of captive management with an additional month of post-release supplementation with vitamin K-treated food. (Vitamin K is the antidote to warfarin-based rodenticides.)

Relying on over 30 years of expertise in raptor medicine and captive management, TRC staff brainstormed potential problems and possible solutions. There was no record of Galapagos hawks being successfully kept in captivity, so little was known about species-specific challenges. TRC also began collecting supplies for a field clinic. Longtime partner 3M Foundation donated a wide variety of medical supplies. Lafeber Corporation provided a critical-care carnivore diet in case any birds became seriously ill or anorexic. Planning ahead was critical,

as the ability to get supplies would be extremely limited on the island.

With project implementation originally scheduled for November 2010, Ponder journeyed to Galapagos with the intent of staying through the end of the project. The project was eventually delayed until January due to logistical issues, but much was accomplished during the November trip. Ponder and others developed working relationships, analyzed the field situation, and strengthened the mitigation plan.

On a return trip in January, Ponder helped to successfully capture all 20 hawks targeted for temporary captivity. Capturing the birds was unlike hawk-trapping anywhere else in the world. Capitalizing on the hawks' curiosity and trust of humans, the team lured them in with large chunks of fresh meat. As each hawk explored the free food, a team member used a long pole to slip a clasp around the bird's leg. Moments later, the bird was in hand and receiving leg bands

for identification before being transported by boat or helicopter to the temporary aviaries.

Ponder examined each bird, weighed it, and drew a blood sample before it was allowed to settle into its new home. She then closely monitored the hawks' health throughout their time in captivity. When Ponder had to return to the United States to meet other obligations, Lori Arent, TRC's longtime clinic manager and expert in captive management of raptors, traveled to the Galapagos to continue the effort of keeping the hawks healthy.

At the end of February, all 20 hawks were released onto the islands where they were originally captured, each fitted with a radio transmitter to allow tracking over the course of the next year. Through this monitoring, the project team hopes to learn about the effectiveness of the mitigation plan and any unforeseen affects on the hawks. To date, the hawks are healthy and the mitigation plan has been

successful. With progressively bigger islands to undergo rat eradication in the future, the lessons learned on this pilot project will prove critical to ridding the islands of invasive rat species while keeping the Galapagos hawks safe.



## Learn more

### Why eradicate rodents?

- [islandconservation.org](http://islandconservation.org)

### Stories from camp

- [theraptorcenternews.blogspot.com](http://theraptorcenternews.blogspot.com)

### Galapagos conservation

- [galapagospark.org](http://galapagospark.org)
- [darwinfoundation.org](http://darwinfoundation.org)

## The global reach of veterinary continuing education

The College of Veterinary Medicine's veterinary continuing education program welcomes practitioners and scientists from more than 40 countries to courses, symposiums, and conferences, both in person and online via the Internet.



### College hosts international equine gene-mapping workshop

The College hosted the Havemeyer Foundation's Ninth International Equine Gene Mapping Workshop at Oak Ridge Conference Center in Chaska, Minnesota, on July 27-29. The organizer of the workshop was Dr. James Mickelson, professor, Veterinary and Biomedical Sciences Department.

Much of the growth and international reach is the result of faculty seizing and building on opportunities, such as online courses in dairy herd management. Coordinated by Dr. Paul Rapnicki, clinical professor in dairy production medicine, the College offers online training courses for DairyCOMP 305, the dairy industry's most advanced on-farm dairy management software program. DairyCOMP 305 is used by large dairies to retain health and production information on each cow and to analyze and improve herd health and productivity. Clients for the online courses log on from throughout North America, South America, and Europe, as well as Dubai, Saudi Arabia, and Japan. The program has been available since 2005; an updated version was introduced in 2010.

The annual Allen D. Leman Swine Conference, which promotes "science-driven solutions," may be the top international conference in the swine industry. The 2010 conference attracted 926 attendees from 25 countries. The 2011 conference, scheduled for September 17-

20 at Saint Paul RiverCentre, will feature the distinguished lecture, "The Scientific Challenges of Feeding the World," presented by Allen Levine, dean of the College of Food, Agricultural, and Natural Resource Sciences.

At The Raptor Center, a May 2011 workshop in avian orthopedics and raptor rehabilitation drew veterinarians from as far away as Taiwan, and an October 2010 Care and Management of Captive Raptors workshop attracted participants from 12 states and two Canadian provinces. Meanwhile, the College's annual Mather Lecture Series is now offered via simulcast, giving participants the choice of attending lectures in person or online via computer.

Nicole Kast joined the College as director of veterinary continuing education in May. Learn more about veterinary continuing education opportunities at [www.cvm.umn.edu/vetmedce](http://www.cvm.umn.edu/vetmedce).

# Veterinary Medical Library

*Technology brings services to more people more quickly*

The University of Minnesota's Veterinary Medical Library has provided vital services to faculty, staff, and students since it opened in 1948, a year after the creation of the College of Veterinary Medicine (CVM). Primarily serving the CVM and other colleges and schools within the University's Academic Health Center, the Veterinary Medical Library holds about 78,000 print volumes and receives about 440 journals in electronic and print formats. It provides access to PubMed, OVID Medline, Animal Science Database, Web of Science, and many other databases. It also offers course-integrated instruction, one-on-one consultations, literature searches, course resources, and other services to support the needs of the College.

Over the last 63 years, the Veterinary Medical Library has undergone many changes, both in the services it offers and its personnel. The library was heavily shaped by two librarians—Evelyn Raynolds, who served as head librarian from 1956-1975, and Livija Carlson, who was the librarian from 1976-2003. The current librarian is André Nault, who has staffed the library since 2005. Nault has been instrumental in bringing the latest technology to the library.

“With modern academic libraries now so reliant on technology to deliver information in a remote, digital fashion, technological change is simply an entrenched philosophy among librarians,” he says. “Technology is allowing us to bring our services to more people in more locations more quickly.”

Nault and his staff actively promote the library's services to Minnesota veterinarians, who are encouraged to visit



André Nault

the library and use its resources at no charge. Services are also offered to the public, including:

- **Friends of the Libraries.** Those wishing to check out items can open a “Friends of the Libraries” account and visit the Veterinary Medical Library on weekdays during business hours. (Access at other times can be arranged by contacting the librarian at 612-624-5376.) Learn more at [www.lib.umn.edu/friends](http://www.lib.umn.edu/friends).
- **InfoNOW.** This fee-based research and document delivery service supports

the document and research needs of the legal, health care, technology, consulting, and other professions, performing literature searches and providing copies of journal articles. InfoNOW staff have vast experience accessing content in the collection of the University of Minnesota and other libraries throughout the world, as well as extensive training in evidence-based research techniques. For more information, call 612-626-3940 (toll-free: 800-477-6689) or visit [www.lib.umn.edu/infonow/](http://www.lib.umn.edu/infonow/).

The Veterinary Medical Library is located in the Veterinary Science Building, 1971 Commonwealth Avenue, St. Paul, MN 55108. For more information, visit the library's Web site at <http://hsl.lib.umn.edu/vetmed/help/vets/resources>. Contact the reference desk at 612-624-4281 or [vetlib@umn.edu](mailto:vetlib@umn.edu).



## World Veterinary Year

This year is the 250th anniversary of the establishment of the world's first veterinary school in Lyon, France, in 1761, and 2011 is being celebrated as World Veterinary Year around the globe.

The official opening ceremony of World Veterinary Year took place in Versailles, France, on January 24, and the World Conference on Veterinary Education was held in Lyon, France, on May 13-15. The International Closing Ceremony of World Veterinary Year in Cape Town, South Africa, is planned for October 10-14.

## College begins curriculum review

The College has begun a curriculum review effort led by Dr. Peggy Root Kustritz, assistant dean of education. Kustritz is seeking input from faculty, staff, students, and outside constituents, and has established a blog at <http://blog.lib.umn.edu/rootk001/myblog/> for people to get more information and post comments. The curriculum review board is made up of Drs. Dave Brown and Jim Mickelson from Veterinary and Biomedical Sciences, Drs. Mike Conzemius and Dan Feeney from Veterinary Clinical Sciences, and Drs. John Fetrow and Erin Malone from Veterinary Population Medicine. The College's current curriculum was implemented in 1997.

## Education Day celebrates excellence in education

The CVM celebrated its second annual Education Day on May 23. The keynote address, "Transforming Education in the 21st Century," was given by Dr. Debra Olson, associate dean, School of Public Health, and faculty attended breakout sessions on 21st-century graduate student mentoring, curriculum revision, the use of handheld devices in health sciences education, and more. Faculty members also presented posters, demonstrations, and computer presentations related to education and innovative teaching methods, from the development of a new course in critical scientific reading to teaching camelid anatomy. Education Day concluded with the presentation of awards to faculty and staff who demonstrate excellence in education. Dr. Leslie Sharkey received the Pfizer Distinguished Teacher Award and Dr. Sandra Godden received the Mark of Excellence Award. To see the full list of award recipients, visit [www.cvm.umn.edu/newsarchives/2011/educationday](http://www.cvm.umn.edu/newsarchives/2011/educationday).

## Full accreditation continued

At its spring 2011 meeting, the American Veterinary Medical Association Council on Education voted to continue full accreditation for the University of Minnesota College of Veterinary Medicine.



David E. Lee, director of the Veterinary Medical Center, presents "Setting the Stage: Finding the Best Fit" at the Student Leadership Conference.

## Student Leadership Conference explores career paths

About 40 students from the College of Veterinary Medicine and School of Dentistry participated in the 2011 Student Leadership Conference at the Pomeroy Student-Alumni Learning Center in January. The conference, entitled "Leadership in Practice: Setting the Stage for Success," provided students with an opportunity to learn more about their path to a productive, successful career through personal reflection, goal setting, and discussions with alumni.

Presentations included "Setting the Stage: Finding the Best Fit," presented by Dr. David E. Lee, director of the Veterinary Medical Center, and "Building the Foundation for Your Career: Setting and Realizing Your Goals," presented by Jeff Ogden, chief administrative officer, School of Dentistry. Participating alumni included Drs. Christopher Anderson, class of 2003; David Antenucci, class of 2005; Kerry J. Kuhle, class of 2001; Mike McMenemy, class of 1969; and Sidra Stark, class of 2001.

## Degrees awarded at annual commencement ceremony

Doctor of veterinary medicine degrees were awarded to 90 students at the College's annual commencement ceremony on April 30. Ten Ph.D. degrees, six D.V.M./M.P.H. degrees, and four M.S. degrees were also awarded. The commencement speaker was CVM alumnus Dr. Chand Khanna, director of the comparative oncology program at the National Cancer Institute's Center for Cancer Research.

## Students honored at scholarship reception

The College awarded more than \$200,000 in scholarships at the annual CVM scholarship reception on April 15. Also presented at the event was the College of Veterinary Medicine Outstanding Service Award, which was given to Phil Jenni, executive director of the Wildlife Rehabilitation Center. Lindsey Hornickel, class of 2012, presented "The Scholarship Experience," a student's perspective on the importance of scholarships.

## GRADUATE PROGRAMS

### > GRADUATE STUDENT PROFILE

#### >> ARIC FRANTZ, D.V.M./PH.D. STUDENT

**R**aised on a farm in northern Illinois, Aric Frantz says he was fortunate to be educated in two magnet programs, one for creative and performing arts, and the other for academics.

“On any given day I might have had a recital performing Mozart in the morning, helped castrate pigs in the afternoon, and done some computer programming in the evening,” he says with a smile.

Now a D.V.M./Ph.D. student and Morris Animal Foundation research fellow, Frantz continues to excel at multitasking. He completed two years of the veterinary medicine program, then started the graduate portion of the D.V.M./Ph.D. degree program. He is currently finishing the third of four years in the graduate program, after which he will return to finish the final two years of the D.V.M. program. His mentors in the Ph.D. program are Drs. Jaime Modiano and Timothy D. O’Brien.

Frantz, his wife, Jody, and three children live in Hampton, Minnesota, a small town about 35 miles southeast of the Twin Cities.

**Q** Why did you decide to pursue a dual D.V.M./Ph.D. degree?

**A** During my undergrad career, I chose the medical biology track at Beloit College in Wisconsin, with the intent of entering veterinary medicine. I won several research scholarships during my undergrad studies and spent two summers at the University of Chicago, which led to a job in a lab researching asthma and T-cell signaling for nearly three years. My first two years in veterinary medicine provided two profound revelations. First, I was amazed to find that medicine is a field with more questions than answers. This provided a stunning new perspective on the necessity for research to provide new and better treatments. Second, again through scholarship research

opportunities, I found an avenue through which I could combine my experience in research and passion for medicine, namely the D.V.M./Ph.D. degree program.

**Q** What is the focus of your Ph.D. research?

**A** My research strives both to find answers to contemporary questions in cancer biology and to ask questions that benefit human and animal health. Until recently, cancer therapy assumed that all cancer cells were created equal. An evolving paradigm holds that not all cancer cells participate equally in the maintenance, progression, or spread of disease. As is often the case, the biology behind these cells is not unique to humans, and cells with “cancer stem cell” properties have been found in cancers of humans and animals alike. This is important because some tumors are not easily obtained from a human, but can be readily obtained and studied in animals such as dogs, which unfortunately also have spontaneous tumors. My thesis research takes full advantage of this mutually beneficial opportunity, focusing on three types of dog tumors that also occur in humans.

**Q** What has been the most valuable part of your graduate education so far?

**A** I think it would be impossible to overestimate the importance of my mentors in my graduate education. They are almost entirely responsible for the chosen path of work, student progress, and the learning not found in books. I have had the good fortune to have two advisors whose knowledge, skill, and expertise are surpassed only by their commitment and energy. They have pushed me to do things beyond what is required by the graduate program, such as applying for numerous grants and fellowships. I now have firsthand knowledge of the challenges associated with grant-proposal writing and



Aric Frantz with his dog, Bailey

will be better prepared to lead my own lab in the future.

**Q** What would you like to do after you complete your degrees?

**A** When I complete my dual-degree program, I will be able to work at the interface of translational and basic biomedical research. Through comparative research between humans and animals, I believe that veterinarian scientists play crucial roles in the biomedical sciences. I eagerly await the next stage of my career in scientific discovery, making new knowledge accessible, and improving the health and well-being of humans and animals alike.

*If you would like to support Aric and other D.V.M./Ph.D. students, you may give online at [www.giving.umn.edu](http://www.giving.umn.edu) (please note that the gift is for the Dr. Al Weber D.V.M./Ph.D. Scholarship Fund) or contact Bill Venne in the CVM Office of Development at 612-624-8180 or [venne025@umn.edu](mailto:venne025@umn.edu).*

# Research funding tops \$7 million

College of Veterinary Medicine researchers were awarded grants totaling more than \$7 million to investigate topics ranging from avian influenza and bovine tuberculosis to arthritis and cancer in the past fiscal year. Research grants of \$50,000 or more included:

## An Epidemiological Approach for Reducing Foodborne Pathogens

Principal investigator: Randall Singer  
Sponsor: Iowa State University



## A Systems Approach to Develop Improved Bovine Tuberculosis Mitigation Strategies

Principal investigator: Scott Wells  
Sponsor: U.S. Department of Agriculture  
National Institute of Food and Agriculture

## Bovine Tuberculosis and Chronic Wasting Disease Testing

Principal investigator: Larissa Minicucci  
Sponsor: Minnesota Department of Natural Resources

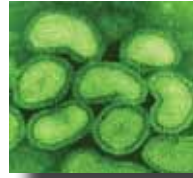
## Capturing the One Health Momentum for Global Implementation

Principal investigator: William Hueston  
Sponsor: Rockefeller Foundation



## Graduate degrees

Fourteen graduate students were awarded M.S. and Ph.D. degrees at the College of Veterinary Medicine's annual commencement ceremony on April 30. Top row, from left, are Luis Espejo (Ph.D.), Brian Hardy (M.S.), Susan Detmer (Ph.D.), and Anil Thachil (Ph.D.). Front row, from left, are Chunmei Long (Ph.D.), Arpita Ghosh (M.S.), Josephine Gnanandarajah (Ph.D.), Kristy Metivier (Ph.D.), Sumathy Puvanendiran (Ph.D.), Amanda Oliveira (M.S.), Juan Li (Ph.D.), and Duane Robinson (Ph.D.). Not pictured: Elise Lamont (Ph.D.) and Claudia Fernandez (M.S.). Photo by Sarah Summerbell



**Chronic Wasting Disease/Tuberculosis/PCR-Avian Influenza Samples**  
Principal investigator: James Collins  
Sponsor: Minnesota Department of Natural Resources

## Classical Swine Fever Surveillance, Pseudorabies Survey

Principal investigator: Jerry Torrison  
Sponsor: U.S. Department of Agriculture Animal and Plant Health Inspection Service Veterinary Services

## Companion Animal Pathogen Agreement

Principal investigator: Kelly Wilke  
Sponsor: Pfizer Inc.

## Comparing the Efficacy of Ingelvac PRRS Vaccines

Principal investigator: Scott Dee  
Sponsor: Boehringer Ingelheim Vetmedica, Inc.

## Comparison of Low-Dose Aspirin versus Individually Monitored Unfractionated Heparin on Survival of Dogs with IMHA

Principal investigator: David Polzin  
Sponsor: Morris Animal Foundation

## Discovery and Characterization of Heritable and Somatic Cancer Mutations in Golden Retrievers

Principal investigator: Jaime Modiano  
Sponsor: Morris Animal Foundation



## Disease Transmission Risk Between Invasive American Mink

Principal investigator: Randall Singer  
Sponsor: Morris Animal Foundation

## Effect of an Oral Antibody Product on Scours

Principal investigator: Sandra Godden  
Sponsor: ImmuCell Corporation

## Effect of Orally Administered Probiotics on Rotavirus Infection in Pigs

Principal investigator: Robert Morrison  
Sponsor: Calpis Co., Ltd.



**Efficacy of Anthelmintics in Beef Cattle**  
Principal investigator: Bert Stromberg  
Sponsor: Novartis Pharma AG

## Enhancing Multicultural Diversity in Veterinary Health Sciences

Principal investigator: Mark Rutherford  
Sponsor: U.S. Department of Agriculture  
National Institute of Food and Agriculture

## Epidemiology of *Staphylococcus aureus* in Multiple-Site Pig Farms

Principal investigator: Peter Davies  
Sponsor: National Pork Board

### Evaluation of the Efficacy of PF-05253665 Against the Occurrence of Clinical Metritis in Periparturient Dairy Cows

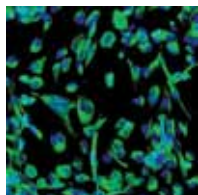
Principal investigator: Ricardo Chebel  
Sponsor: Pfizer Animal Health

### Facilitating Public-Private Partnerships to Support National Preparedness for Animal Health Emergencies

Principal investigator: William Hueston  
Sponsor: U.S. Department of Agriculture Animal and Plant Health Inspection Service

### Fate of Neural Stem Cells During Viral Encephalitis

Principal investigator: Maxim Cheeran  
Sponsor: National Institutes of Health



### Foreign Animal and Zoonotic Disease Defense Year Five Avian Influenza Viruses

Principal investigator: Carol Cardona  
Sponsor: Texas A&M University

### Function of FcγRIIC Gene in Rheumatoid Arthritis

Principal investigator: Jianming Wu  
Sponsor: American College of Rheumatology



### Gene Loci and Risk Analysis for Recurrent Exertional Rhabdomyolysis

Principal investigator: James Mickelson  
Sponsor: Morris Animal Foundation

### Genetic Analysis of Muscle Disorders in Quarter Horses

Principal investigator: Stephanie Valberg  
Sponsor: American Quarter Horse Association

### Impact of Pigs Entering a Region on Feasibility of PRRS Virus

Principal investigator: Robert Morrison  
Sponsor: National Pork Board

### Investigation of the Epidemiology of *Mycoplasma hyorhini*

Principal investigator: Alberto Rovira  
Sponsor: Pfizer Animal Health

### Mechanistic Relationship of IL-8 in Cell Proliferation and Survival of Canine Hemangiosarcoma

Principal investigator: Jaime Modiano  
Sponsor: AKC Canine Health Foundation

### Poult Enteritis Leads to Light Turkey Syndrome

Principal investigator: Devi Patnayak  
Sponsor: Minnesota Turkey Growers Association

### PRRS Virus Modulation of the Porcine Antibody Repertoire

Principal investigator: Michael Murtaugh  
Sponsor: National Pork Board

### Randomized Non-Inferiority Clinical Trial Evaluating Three Commercial Dry Cow Mastitis Preparations

Principal investigator: Sandra Godden  
Sponsor: Boehringer Ingelheim Vetmedica, Inc.



### Regulation of Neutrophil Function and Inflammation by ADAM17 During Infection

Principal investigator: Bruce Walcheck  
Sponsor: National Institutes of Health

### Studies on Pathogenesis and Immunity of Turkey Celluliti

Principal investigator: Kakambi Nagaraja  
Sponsor: Minnesota Turkey Growers Association



### Viral Hemorrhagic Septicemia Surveillance

Principal investigator: Nicholas Phelps  
Sponsor: U.S. Department of Agriculture Animal and Plant Health Inspection Service Veterinary Services

#### Research spotlight

### MADGiC: Making Advanced Discoveries in Golden Cancers

Dr. Jaime F. Modiano, Perlman Professor of Animal Oncology and director of the Animal Cancer Care and Research program, has teamed up with Drs. Matthew Breen of North Carolina State University and Kerstin Lindblad-Toh of Uppsala University in Sweden to study cancer in golden retrievers.



One of the most popular breeds in America, golden retrievers have one of the highest incidences of cancer. Hemangiosarcoma and lymphoma account for more than 30 percent of the deaths in this breed. Although breed susceptibility to cancer was first reported 30 years ago, the relationship between inherited traits and susceptibility for these cancers is still not known.

The Golden Retriever Foundation and Morris Animal Foundation are funding MADGiC (Making Advanced Discoveries in Golden Cancers), a study that aims to discover and characterize heritable and somatic cancer mutations in golden retrievers. The three-year, \$1 million project is examining heritable (genetic) traits that contribute to risk and progression of hemangiosarcoma and lymphoma in golden retrievers.

The long-term goal is to understand what causes these diseases. Because both cancers occur with such high frequency, reducing their incidence while retaining the positive phenotypes of the breed will be a complex task, but the development of reliable genetic tests would allow breeders to build programs to avoid high-risk combinations of factors. In addition, effective strategies could be developed to control and treat hemangiosarcoma and lymphoma in golden retrievers and other dogs. Lessons learned from this research also may be applicable to diseases in people.

## FACULTY AND STAFF NEWS



Dr. Mike McMenemy presents Dr. Dale Sorensen with the Veterinarian of the Year Award at the annual MVMA meeting.

### Awards and accolades

The Minnesota Veterinary Medical Association (MVMA) honored College faculty members and alumni—as well as a patient—at the annual MVMA meeting in February.

- **Dr. Dale Sorensen**, professor emeritus and a former acting dean of the College, was the recipient of the Veterinarian of the Year Award.
- The President's Award was presented to **Dr. Robert (Bob) Hardy**, a longtime professor in the Veterinary Clinical Sciences Department.
- **Dr. Sheila Torres**, associate professor in the Veterinary Clinical Sciences Department, received the Outstanding Faculty Award.
- **Dr. Steve Dille**, a CVM alumnus, received the Veterinary Service Award.
- **Major**, a seven-year member of the Roseville Police Department's K9 Unit who had emergency surgery at the Veterinary Medical Center after he was critically injured last year, received the MVMA's Minnesota Animal Hall of Fame Award.

**Dr. Margaret (Peggy) Root Kustritz**, assistant dean of education, was honored with the Graduate-Professional Teaching Award for outstanding contributions to postbaccalaureate, graduate, and professional education at the University of Minnesota's Distinguished Teaching Awards Ceremony on April 25.

The Distinguished Teaching Award is the University's most prestigious award for excellence in teaching. Kustritz was also one of 15 faculty members inducted into the Academy of Distinguished Teachers. Members of the academy provide important leadership to the University community by serving as mentors, advisers, and spokespersons for the University's mission.

"This occasion celebrates the significance and value the University places on excellent teaching," says Tom Sullivan, senior vice president for academic affairs and provost. "These teachers have gone



Peggy Root Kustritz

above and beyond the call of duty in their commitment to work with students and see them grow and succeed. It is very fitting that we shine a spotlight on these faculty members' remarkable efforts, and extend our deep appreciation."

### Robert Hardy retires

After more than 30 years with the College, **Dr. Robert (Bob) Hardy**, professor,



Robert Hardy

Veterinary Clinical Sciences Department, retired on June 30. Considered one of the College's most influential instructors, Hardy touched the lives of thousands of veterinarians. Faculty, staff, students, and

alumni shared anecdotes and stories about Hardy in a book that was presented to him as a gift.

The College is raising money for a scholarship in Hardy's name. Donations to the Dr. Robert M. Hardy Scholarship campaign may be made online at [www.giving.umn.edu](http://www.giving.umn.edu) or by mail to Bill Venne, College of Veterinary Medicine, 1365 Gortner Avenue S, St. Paul, MN 55108. (Make your check payable to "U of M Foundation.") Please note that your donation is for the Hardy Scholarship.

### Researchers recognized

Eight College of Veterinary Medicine researchers were recognized in February, when the Office of the Vice President for Research hosted a "University Innovations" event at McNamara Alumni Center. The ceremony recognized a total of 161 inventors representing 10 colleges,

## Engaging Intergovernmental Organizations

Twenty-two mid- and senior-level government officials, industry leaders, and university faculty interested in expanding their international network



Participants in the Engaging Intergovernmental Organizations program meet with representatives of the World Organisation for Animal Health in Paris.

and strengthening their capacity to engage intergovernmental organizations attended the Engaging Intergovernmental Organizations program in Geneva, Paris, and Rome February 26-March 4. Hosted by the Global Initiative for Food Systems Leadership, the week-long intensive professional development program helped participants gain valuable networking opportunities as they explored the roles and responsibilities of the four key intergovernmental organizations involved with animal health, public health, and food security—the World Organisation for Animal Health, World Health Organization, World Trade Organization, and Food and Agricultural Organization of the United Nations.

whose efforts generated 106 patents and 84 licenses in fiscal years 2009-10. The College's inventors included:

- **Dr. James Collins**, director of the Veterinary Diagnostic Laboratory
- **Dr. Marie Gramer**, associate clinical professor
- **Dr. Vivek Kapur**, adjunct professor
- **Dr. Ling-Ling Li**, scientist
- **Nubia Macedo**, research assistant
- **Dr. Michael Murtaugh**, professor
- **Dr. Simone Oliveira**, assistant clinical professor
- **Dr. Yue Wang**, research associate

The event addressed the importance of research and innovation to the nation's economy, the University's role in Minnesota's economy, and the growth of U research. Over the past five years, inventions by University researchers have brought nearly \$390 million in revenue into the state and helped fund numerous initiatives across the University, including fellowships for graduate students, critical research infrastructure and major equipment needs, development investments for University technologies, and funding for additional research.



Katey Pelican

**Dr. Katey Pelican**, assistant professor in the Veterinary Population Medicine Department, and Dr. Meggan Craft, post-doctoral associate, Institute on the Environment (IonE), were awarded an IonE grant for "Food

Security and Infectious Disease: Seeking Integrated Solutions." The project was one of 10 interdisciplinary initiatives selected for funding in the first round of awards for IonE's new Mini Grant program, which encourages collaboration on environmental themes among faculty, staff, and students across University of Minnesota disciplines, units, and campuses.

## Appointments



Jeff Bender

**Dr. Jeff Bender**, director of the Center for Animal Health and Food Safety, has been named to the U.S. Food and Drug Administration (FDA) Science Advisory Committee. The FDA uses 49 committees and panels to obtain independent expert advice on scientific, technical, and policy matters to assist in its mission to protect and promote public health.

When Agriculture Secretary Tom Vilsack announced the members of the Secretary's Advisory Committee on Animal Health in December, they included two Veterinary Population Medicine Department faculty members: **Dr. Cindy Wolf**, assistant clinical professor, and Dr. Elizabeth Wagstrom, associate professor, who is now chief veterinarian with the National Pork Producers Council. Wolf and Wagstrom will serve two-year terms on the committee, which advises the Secretary of Agriculture on actions related to prevention, surveillance, and control of animal diseases of national importance.

**Dr. Scott Wells**, director of education for the Center for Animal Health and Food Safety, traveled to Kosovo in January as part of a delegation of dairy leaders from Wisconsin and Minnesota. The delegation is partnering with government and industry leaders in Kosovo for a two-year collaborative project to assess food safety risks and improve milk quality. The team traveled throughout Kosovo, visiting small dairy farms, milk collection centers, dairy processing plants, national testing laboratories, and the University of Prishtina.



Scott Wells

## STUDENT NEWS

### Top presentation at annual swine meeting

**Alexander Primus**, a second-year veterinary student, received a \$5,000 scholarship for the top student presentation at the American Association of Swine Veterinarians (AASV) annual meeting in Phoenix, Arizona, March 10-13. Alexander's presentation was titled "Identification of a New Potentially Virulent *Brachyspira* Species Affecting Swine." Four CVM students received awards in the AASV poster competition sponsored by Boehringer Ingelheim Vetmedica: Evan Van Beusekom, who received a \$500 award for the top student poster; Andrea Pitkin, who received a \$400 award; Amber Hazel, who received a \$300 award; and Abigail Redalen, who received a \$200 award.

### Dionne Benson awarded American Live Stock/AAEP scholarship

**Dionne Benson** was one of only eight students from around the country to be awarded a scholarship from American Live Stock Inc./Hiscox Insurance Company Inc. and the AAEP (American Association of Equine Practitioners) Foundation. These scholarships are presented to selected fourth-year veterinary students who plan to pursue a career in equine veterinary practice.

### Honored at CRWAD

Four graduate students won awards at the Conference of Research Workers in Animal Diseases (CRWAD) in Chicago in December:

- **Dr. Matt Allerson**, a student in the veterinary medicine graduate program, was recognized by the Animal Health Institute for his presentation "Application of Alternative Methods of Body Temperature Measurement in Swine." Matt's advisor is Dr. Bob Morrison.
- **Dr. Amanda Beaudoin**, a student in the veterinary medicine graduate program, was honored by the American College of Veterinary Microbiologists for her

presentation, "Prevalence of Antibodies to Influenza A Viruses and Risk Factors for Exposure in Thai Free-Grazing Duck Flocks." Amanda's advisors are Drs. Jeff Bender and Randy Singer.

- **Tim Boyer**, Environmental Health, was recognized by the Association for Veterinary Epidemiology and Preventive Medicine for his presentation, "Measurement of Low-Quantity Antibiotic Resistance Genes in Agricultural Samples: a Hierarchical Model for Analysis of Left-Censored qPCR Data." Tim's advisor is Dr. Randy Singer.
- **John Schwartz**, a student in the comparative and molecular biosciences graduate program, received an award from the American Association of Veterinary Immunologists for "Differential Expression of the Porcine Heavy Chain Immunoglobulin Repertoire Following Porcine Reproductive and Respiratory Syndrome Virus Infection." John's advisor is Dr. Michael Murtaugh.

### Dairy Challenge champs

A team of Production Animal Medicine Club members from the College won an April 2 Dairy Challenge competition between the Iowa State College of Veterinary Medicine and the University of Minnesota College of Veterinary Medicine. The competition was hosted by New Sweden Dairy in St. Peter, Minnesota.



The winning team at the Dairy Challenge, from left: Evan Van Beusekom, class of 2012; Amber Hazel, class of 2012; Portia Holtegaard, class of 2014; Abbie Wirt, class of 2014; and Brett Boyum, class of 2014

### Legislative Fly-in offers lessons on political process

Second-year veterinary students Tammy Oseid and Julie Peterson, third-year student Diana Schwartz, and fourth-year student Lindsey Hornickel traveled to Washington, D.C., in February to learn about the federal political process and grassroots advocacy as part of the Veterinary Student Legislative Fly-in hosted by the American Veterinary Medical Association's Governmental Relations Division.

They visited U.S. Senate and U.S. House offices to lobby for improvements to the Veterinary Medicine Loan Repayment Program and for the new Veterinary Services Investment Act.

"This experience taught me a lot about the AVMA's grassroots advocacy," says Peterson. "I felt like I was helping to improve the profession by lobbying to my elected officials."

### Students participate in service learning trip to Latin America

Dr. Vicki Wilke, assistant clinical professor in the Veterinary Clinical Sciences Department, and a group of veterinary students spent two weeks on a Volunteers for Intercultural and Definitive Adventures (VIDA) service trip to Costa Rica and Nicaragua during the summer of 2010, and are planning another trip, which will include Costa Rica and Panama, in August.

The 2010 team worked with both small and large animals, providing free spay and neuter surgery, physical examination, catheter placement, dental, deworming, vaccination, and other services. They also educated community members about the care of livestock and pets.

In Costa Rica, the group worked out of a church in the small town of Paraiso, outside of San Jose. They used one room for intake and exams and another for surgery and recovery.

"When we arrived, dozens of people were already waiting for us with their pets, which was my first signal that these people were truly dedicated to their animals," says third-year student Whitney Waldsmith. "During the three days we worked there, we saw friendly dogs, new mothers with 10 or more puppies, angry large breeds that required the owner and three students to restrain, and sad hit-by-car cases. One young man came to the clinic all three days, bringing animals he had found on the street and cared for on his own."

In Nicaragua, they often worked without running water, treating emaciated dogs, puppies, and cats covered with fleas and ticks and deworming a large herd of Brahman cattle.

"Some days were difficult, but these people and animals really needed our help," Waldsmith says. "The medical skills we developed are invaluable and the memories might be even better."



The group stopped for a photo near the Pacific Coast in Nicaragua. Front row, from left: Wendy Illick, Kara Carmody, Whitney Waldsmith, Helga Midelfort-Vognar, Nicole Antonucci, Liz Prescott. Back row, from left: Anna Michael, Dr. Vicki Wilke, Danielle Funaro, Rachel Morgan, Katie Morris, Danielle Hagen, Sara Losinski, Randie Schinzel, Anna Lembocke, Kelsey Ness, Jessica Marder. Not pictured: Lillian Chan

# Meet René Carlson, president of the American Veterinary Medical Association

**M**any believe great leaders start with passion and enthusiasm. If this is true, the American Veterinary Medical Association (AVMA) is about to experience one of the greatest presidents ever in CVM alumna Dr. René Carlson, class of 1978. Carlson officially became president of the AVMA at the annual AVMA convention in St. Louis in July.

Carlson remembers learning a lot during her four years at the College, but thinks the number-one lesson was to look not only for the answers, but the explanation behind the answers. She credits the CVM faculty (many of whom she feels she has never properly thanked) for her love of the veterinary field. People like Drs. Stan Diesch, Robert Hardy, Pat McKeever, Carl Osborne, and Vic Perman not only taught Carlson but instilled the passion and curiosity to be the best at veterinary medicine that she could be.

Carlson's passion made her want to assume a leadership role in her profession. When she was elected AVMA vice president for her term on the executive board from 2004-2006, she joined two other graduates of the University of Minnesota College of Veterinary Medicine—Dr. Bonnie Beaver, president, and Dr. Janet Donlin, assistant executive vice president—as the only three women on the board. Carlson is now the third female president of the AVMA since its inception in 1863.

For years, Carlson balanced a thriving small animal practice in rural Chetek, Wisconsin, with volunteer service to the veterinary profession. What does she consider the major challenges facing the veterinary field and AVMA today? Carlson cites five:

- The educational cost for a D.V.M. degree continues to rise faster than compensation.

- Veterinary medical schools are stressed financially.

- The veterinary workforce faces shortages in rural areas, food animal production, and the U.S. government.

- Our country lacks veterinarians of color, though our society is poised to grow to 50 percent non-Caucasian by 2050.

- While 70 percent of AVMA members are companion animal vets, veterinarians also need to be leaders in food safety and security and to be engaged in the One Health discussion.

Carlson knows that a one-year term as president does not allow much time to meet all of these challenges, but she feels that her years serving the AVMA in a variety of roles will allow her to hit the ground running. She is very supportive of engaging students in the future of veterinary medicine with opportunities for students to be involved in AVMA governance. Her biggest hope is that future parents will consider veterinary medicine equal to human medicine, nursing, law, and education as worthy career choices for their children no matter their gender or race.



*Dr. René Carlson visited the College's exhibit at the Minnesota Veterinary Medical Association's annual meeting in February.*

Although she knows every veterinary college has its strengths, Carlson admits her bias: that the University of Minnesota is still the best. In addition to excellent veterinary training, perhaps the best thing she obtained from her University education was an introduction to her husband, classmate Dr. Mark Carlson, she says with a smile. Carlson worked as a dairy practitioner for several years before joining the Wisconsin Veterinary Diagnostic Laboratory, where he currently works as a diagnostic pathologist. The Carlsons are the proud owners of Ally, a beagle, and Mona, a beagle mix.

## Gordon Spronk to be honored with Lemman Award



Gordon D. Spronk, class of 1981

**Dr. Gordon D. Spronk**, class of 1981, will be the 2011 recipient of the Allen D. Lemman Science in Practice Award from the University of Minnesota College of Veterinary Medicine and Pfizer Animal Health.

Established by the College in 1994, the Allen D. Lemman Science in Practice Award is recognized as one of the most prestigious in the swine industry. Presented annually at the Allen D. Lemman Swine Conference in September, it honors individuals whose achievements contribute significantly to the body of knowledge related to swine health and management. Spronk will be honored for his outstanding contributions to the creation and dissemination of new knowledge for the betterment of the swine industry.

A staff veterinarian and partner at Pipestone Veterinary Clinic in Pipestone, Minnesota, for 30 years, Spronk has served as a consultant in swine health in more than 10 states and 10 countries. He is also an adjunct professor at the College, where he serves on the Dean's Advisory Council and the advisory board of the Swine Disease Eradication Center.

Spronk was named Swine Practitioner of the Year by the American Association of Swine Practitioners in 2000. Vitaly active in the field of swine health, management, and production, he makes numerous presentations at swine veterinary conferences and production meetings throughout the Midwest, nationally, and internationally.

## CVM alumni: We want to hear from you!

The College of Veterinary Medicine—and your fellow alumni—would like to know about your accomplishments!

Have you started a new position, been promoted, or retired? Have you received an award or published a book?

Send us your news via the online form at [z.umn.edu/cvmalumninews](http://z.umn.edu/cvmalumninews), e-mail us at [cvmalum@umn.edu](mailto:cvmalum@umn.edu), or send a note to CVM

Alumni Relations,  
College of Veterinary Medicine, 1365  
Gortner Avenue,  
St. Paul MN 55108.



### Ned Patterson, class of 1996

*Dr. Ned Patterson, class of 1996, received his Ph.D. from the University of Minnesota College of Veterinary Medicine in 2004. He is now an associate professor in the College's Veterinary Clinical Sciences Department, where his special interests include seizure disorders, genetics, endocrinology, and molecular medicine. In 2008, he was part of a research team that identified a gene in Labrador retrievers highly associated with the syndrome of exercise-induced collapse. Tests for the gene are now available from the Veterinary Diagnostic Laboratory. Photo by Sue Kirchoff*

## Veterinary Anatomy building to be demolished

The Veterinary Anatomy Building (also known as "Old Anatomy"), originally completed in 1901, is scheduled to be demolished in September. The building had several additions previously torn down (including significant wings in 1915 and 1992), once housed the Wildlife Rehabilitation Center, and was vacated in 1996 for structural reasons. Demolition will include salvaging brick, disconnection and removal of underground utilities, and landscape and sidewalk restoration.



Originally completed in 1901, the Veterinary Anatomy building was vacated in 1996.

# Giving back

## **A conversation with Roy Martin, president, Alumni and Friends Society**

**R**oy Martin, class of 1989, is a partner with the Integra Group, a clinical and preclinical research organization that helps clients navigate the process of product development, clinical trials, FDA submissions, and post-market studies. Martin has served on the Alumni and Friends Society (AFS) board for over eight years and is currently completing his term as president.

**Q** What inspired you to become a veterinarian?

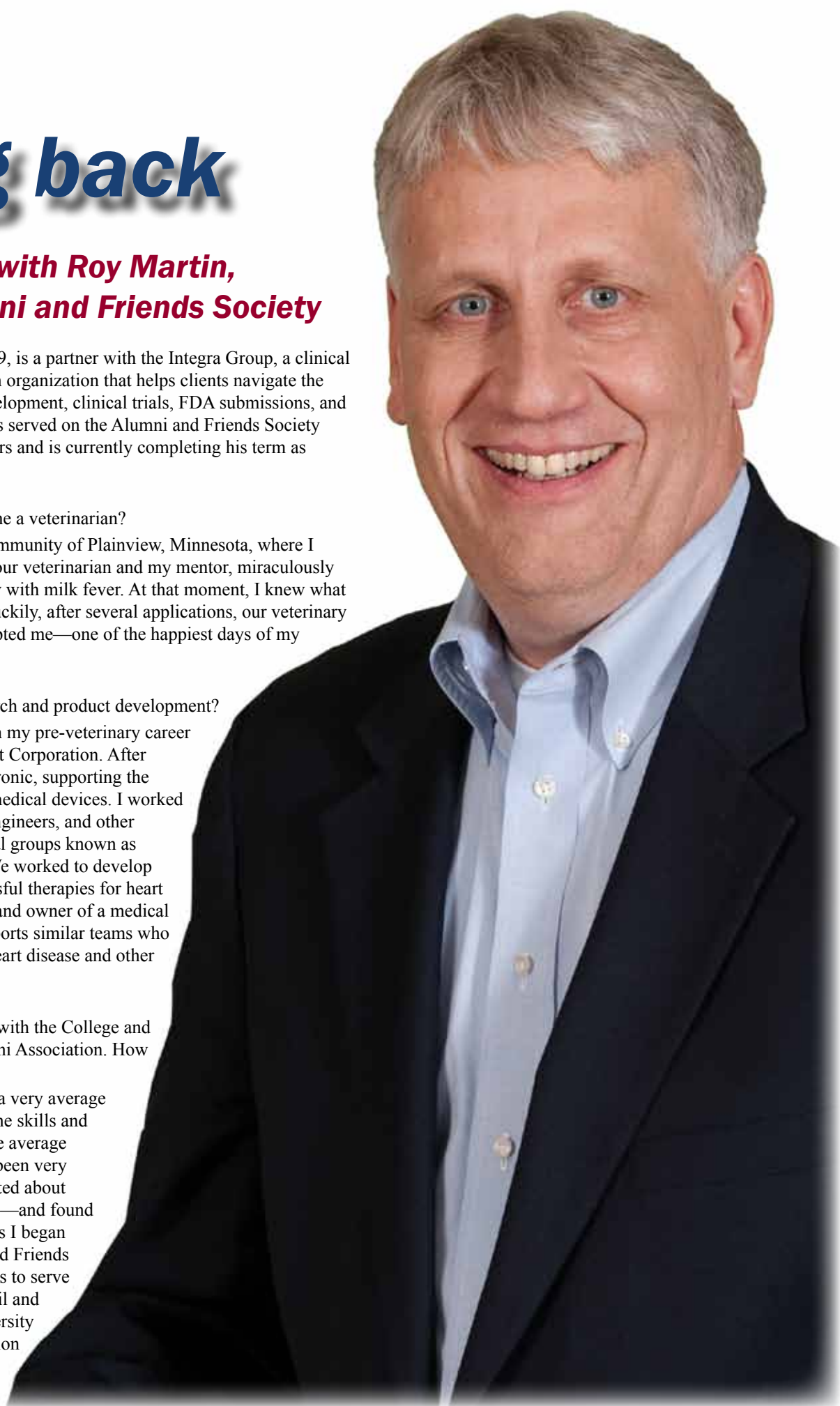
**A** I grew up in the farming community of Plainview, Minnesota, where I witnessed Dr. Henry Stelling, our veterinarian and my mentor, miraculously and instantaneously cure a cow with milk fever. At that moment, I knew what I wanted to do with my life. Luckily, after several applications, our veterinary school took a chance and accepted me—one of the happiest days of my life so far!

**Q** How did you get into research and product development?

**A** I was exposed to research in my pre-veterinary career at the Mayo Clinic and Guidant Corporation. After graduation, I worked for Medtronic, supporting the research and development of medical devices. I worked extensively with physicians, engineers, and other professionals in multifunctional groups known as translational research teams. We worked to develop some very exciting and successful therapies for heart disease. Today, I am a partner and owner of a medical research organization that supports similar teams who are working on therapies for heart disease and other terrible conditions.

**Q** You are also very involved with the College and University of Minnesota Alumni Association. How did you get involved?

**A** Our veterinary school took a very average person (myself) and gave me the skills and mentoring to have a very above average and meaningful career. I have been very grateful for this training—excited about giving back in some small way—and found many opportunities to do so. As I began volunteering for the Alumni and Friends Society board, the opportunities to serve on the Dean's Advisory Council and the national board of the University of Minnesota Alumni Association presented themselves. I also had an opportunity to lead



the Minnesota industrial veterinarians' organization for a number of years, which provided additional opportunities to network and work with alumni from our College. I also am invited to speak on research and industrial career opportunities for veterinarians interested in this less-typical career path.

**Q** What are some of the highlights of your University involvement?

**A** A cool example of something meaningful that the Alumni and Friends Society board did was organizing a fundraiser to purchase cameras to record lectures for our students and alumni. The alumni all chipped in a small amount and were able to help purchase the cameras. It taught us that a small amount of action can have a large impact on students and alumni.

In all my interactions with the University, I receive far more than I give. I start with the opportunity to return to campus and feel the excitement of the place. Once I arrive, I typically find friends and colleagues who are devoting their careers to supporting our state and future generations of veterinarians. I also get to meet veterinary students who are incredibly dedicated and smart.

**Q** What advice do you have for those students and recent graduates who are starting out in their careers?

**A** First, congratulations—you are colleagues in the greatest profession in the world! And second, don't underestimate the opportunities that await you!

**Q** Why do you think it's important for alumni to stay connected with the College?

**A** Staying connected is important for two main reasons. First, our University provided this wonderful training that has allowed us to participate in the veterinary profession. I believe that trying to return some small effort is the right thing to do. If you think about it, we do owe the University something in return for what it gave and continues to give us.

Second, it is just fun and very exciting to reconnect with the College and experience

the energy and commitment of the place. The dedication of the leadership, staff, and students is very contagious and reminds you of just how special our profession and our College truly are. I am amazed that, year in and year out, these leaders continue to do more and more with less and less—especially funding. The creative solutions and sacrifices our colleagues make to continue to advance our profession are amazing—but I also think we may have reached the limit of that and what is reasonable to expect. I feel very motivated to try to help in some small way—either through discussions with our state leaders or in volunteering to support the College—and invite other alumni to join me.

### Andrea Fahrenkrug is new development officer

Andrea Fahrenkrug joined the College of Veterinary Medicine as major gifts officer in January. She was previously with the Minnesota Medical Foundation (MMF), where she solicited gifts from individuals, foundations, and corporations. Before joining MMF, she worked at Boston Scientific and Medtronic. Fahrenkrug has a master's degree in management from Hamline University. Contact Fahrenkrug at 612-626-6501 or [fahre018@umn.edu](mailto:fahre018@umn.edu).



The Equine Center's new Dudley Barn houses horses from the We Can Ride program and for weekend events.

### College hosts ribbon-cutting event for Dudley barn

The College hosted a ribbon-cutting ceremony for the new Dudley barn at the Leatherdale Equine Center on December 10. The 14-stall barn was built with funds from donors, including Bill and Jane Dudley, Randy and Sara Hogan, Karen Rylander, and the Minnesota Horse Council. The barn houses horses from the We Can Ride program and is available to house horses during weekend events like clinics and educational training sessions hosted by the College and outside groups. VIPs at the ribbon-cutting included University of Minnesota President Robert H. Bruininks, a longtime Equine Center supporter.



Bill Dudley and Dr. Stephanie Valberg, director of the Equine Center, admire the interior of the new barn at the December ribbon-cutting ceremony.

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# Profiles

## College of Veterinary Medicine

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## Upcoming Events

### Memories Garden Ceremony and Brick Dedication

August 4, 2011 • 7 p.m.  
Nestlé Purina Memories Garden

### College Exhibit at Minnesota State Fair

September 2, 2011 • 3-9 p.m.

Visit the College of Veterinary Medicine exhibit in the University of Minnesota building on Dan Patch Avenue

### Allen D. Lemam Swine Conference

September 17-20, 2011  
Saint Paul RiverCentre

### Duke Lecture

The Galapagos: Fragile Past, Brighter Future, presented by  
Dr. Julia Ponder and Lori Arent  
October 21, 2011 • 4 p.m.  
Ben Pomeroy Student-Alumni Learning Center

### Class of 1961 Reunion

October 21-22, 2011

### Mather Lectures

Monthly, October through June  
6:30-8:30 p.m.

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- October 6, 2011: Mitral Valve Disease: What Do We Know; What Do We Do? presented by Dr. Anthony Tobias
- November 3, 2011: Anesthesia Ventilators: How They Work and When to Use Them, presented by Dr. Mike Barletta
- December 1, 2011: Tick-Borne Diseases in Canines, presented by Dr. David Polzin
- January 12, 2012: Disease and Interpretation of Dental Pathology, presented by Dr. Kevin Stepaniuk

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