

On Call



SCHOOL OF
Veterinary Medicine
UNIVERSITY OF WISCONSIN-MADISON

A NEWSLETTER FOR THE FRIENDS OF THE UNIVERSITY OF WISCONSIN-MADISON SCHOOL OF VETERINARY MEDICINE

Advancing animal and human health with science and compassion

WHAT'S INSIDE?



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Study finds gene mutation that causes canine tremor disorder

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pets during Colorado floods



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Foreign animal disease

USDA program exposes students to career in emergency management

**University of Wisconsin
School of Veterinary Medicine**
www.vetmed.wisc.edu

UW Veterinary Care
uwveterinarycare.wisc.edu

Injured Training Dog Feels Like New, Back to Old Tricks



NIK HAWKINS

For a working dog, an Achilles tendon injury can spell the end of a career. But thanks to UW Veterinary Care (UWVC) and new tendon imaging and treatment technologies developed at the University of Wisconsin-Madison, an injured obedience training dog is back in business.

Divya, a three-year-old Duck Tolling Retriever, came to UWVC last March after her left hind limb was caught in a door jamb. The accident left a finger-size cut in her left leg and rendered her nearly immobile, a tough condition for an active teaching dog like Divya, who is owned by dog trainer

Robin MacFarlane of That's My Dog! in Dubuque, Iowa. An orthopaedic examination revealed a ruptured Achilles tendon, so Dr. Peter Muir and his team elected to perform a surgical repair of the tendon with sutures.

Customizing Human Orthotics for Animals

Two days after her operation, the team custom-fitted Divya for a canine orthotic built by James Lewallen in the Department of Orthopedics and Rehabilitation at the UW School of Medicine and Public Health. Developed originally for human use but modified for animals, the orthotic kept her

Jump, roll, spin, cha-cha—just a few of the many commands Divya, a three-year-old Duck Tolling Retriever, can demonstrate once again after UW Veterinary Care surgeons repaired a devastating Achilles tendon injury that rendered her immobile. During a follow-up appointment, Divya exhibits her remarkable recovery and training abilities with Maddie MacFarlane, her owner's daughter. See more photos and video at www.vetmed.wisc.edu/diva-dog.

ankle joint extended to relieve tension on the repaired Achilles tendon throughout the healing process.

Doctors use the same kind of hinged splint to protect Achilles

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DATES TO REMEMBER

April 11–13, 2014: Midwest Horse Fair in Madison (visit the SVM/UW Veterinary Care and Morrie Waud Equine Clinic booths)

May 3, 2014: SVM Awards Celebration at Union South

May 4–10, 2014: National Pet Week

May 16, 2014: SVM Graduation Ceremony at the Kohl Center

May 18, 2014: SVM Investiture Ceremony at Union South

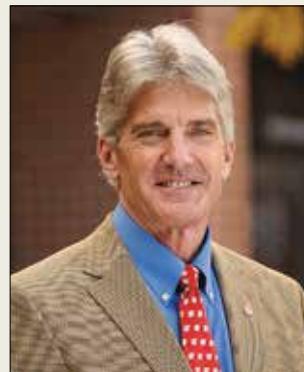
June 21, 2014: SVM Alumni Reunion in Madison
Visit www.vetmed.wisc.edu/alumni-reunion for more information.

July 28, 2014: SVM Alumni Reception at AVMA in Denver.
Visit www.vetmed.wisc.edu/events for details on events.

A MESSAGE FROM THE DEAN

Leading the Way

This issue of *On Call* highlights the many ways that the School of Veterinary Medicine provides leadership for our profession. Our lead story features Dr. Peter Muir's work in helping an obedience training dog recover from a severe injury to her Achilles tendon. This effort involved collaboration with the School of Medicine and Public Health in designing a custom orthotic and the School of Engineering in the application of acoustoelastography to monitor the healing of the tendon. One of the school's great strengths is its focus on "one medicine," which means that the research and clinical work we conduct benefits animals and humans. This effort is greatly supported by our strong collaborative relationships with many of the schools and colleges on the UW–Madison campus.

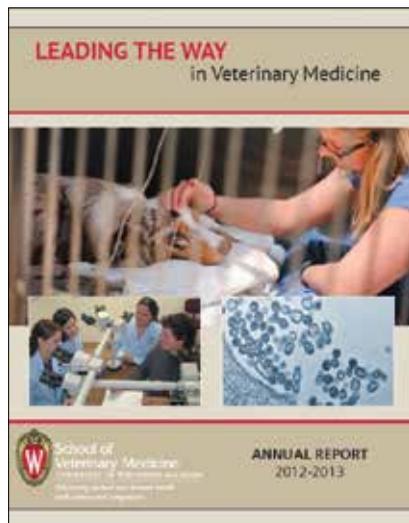


Mark D. Markel

This issue of *On Call* also highlights the national recognition of our faculty. The Association of American Veterinary Medical Colleges (AAVMC) recently announced that Dr. Yoshi Kawaoka is the recipient of the 2014 AAVMC Excellence in Research Award in recognition of his leadership, mentorship, and the originality of his work, which

has advanced our understanding of the mutation and transmission of the influenza virus. Dr. Ken Nordlund recently received the 2013 Award of Excellence from the American Association of Bovine Practitioners, which recognizes the contributions and direct influence his work has had on the daily practice of bovine veterinarians.

Other stories of note include Dr. Ian Duncan's research, which has discovered the mutation that causes tremors in Weimaraners, leading to a test that breeders can use to eliminate the disease. These are just a few of the many ways our faculty, staff, and students give back to the veterinary medical profession. Please enjoy this issue of *On Call*, and thank you for your support of the School of Veterinary Medicine.



Annual Report Available Online

The UW School of Veterinary Medicine's 2012-2013 Annual Report, *Leading the Way in Veterinary Medicine*, is now available. The report highlights the school's fiscal year accomplishments in research, academics, animal care, and other areas, and includes important financial information and student demographic statistics. It is available to read online at www.vetmed.wisc.edu/annual-reports.

UW Veterinary Care Adds New Bovine Donor to Its Team

Meet Lois Lane, UW Veterinary Care's newest blood and ruminant fluid donor.

The six-year-old Holstein cow arrived at UW Veterinary Care (UWVC) on Dec. 6, 2013, as cow "5991" from the UW Arlington Agricultural Research Station. She was recruited after long-time donor cow, Natalie, passed away this fall.

The large animal veterinary technicians felt that cow "5991" needed a real name. After looking at her dark hair and getting to know her personality, they decided that Lois was most appropriate. But her full name came from Simon Peek, clinical professor of large animal internal medicine and theriogenology.

"Dr. Peek provided the Superman theme," says Toni Schriver, large animal hospital supervisor. "She is now Lois Lane, the 'supergirl' saving lives one



Lois Lane, the newest member of the blood and ruminant fluid donation team, relaxes after a feeding at the UW Veterinary Care Large Animal Hospital.

blood drop at a time."

Though the naming process was humorous, the part Lois plays at UWVC is critically important. She was selected for her new role because she already has a fistula, a surgically crafted, permanent hole that enables the collection of fluid from her rumen. Through transfusion, this healthy ruminant

fluid can be donated to a cow with an ailing digestive tract to help boost or rebuild healthy gastrointestinal microflora.

Equally important, Lois tested free of blood-borne diseases like bovine leukemia virus (BLV), bovine leukosis, and Johne's disease. As a resident donor, she will provide blood plasma or whole blood for cows treated at UWVC because there are currently no commercial blood sources available for cows.

According to Schriver, Lois seems content with her new leading lady role, though her donor colleague, Maxine, seems indifferent to the new addition. "Their first meeting was quite uneventful," says Schriver. "Maxine just moomed at Lois."

For a tribute to Lois's predecessor, the much-beloved Natalie, visit www.vetmed.wisc.edu/natalie-the-cow.

Jane Pruhs

Blended Learning Modules Offer DVM Students More Complete Education

Hands-on clinical training will always be a hallmark of veterinary medical education. However, time and circumstance can limit the kinds of cases students encounter at the teaching hospital. Fortunately, instructional technology can fill the gaps, and a new curricular innovation is helping students at the UW School of Veterinary Medicine do just that.

Fourth-year students spend most of their time in clinical rotations—two-week spans, each dedicated to a different UW Veterinary Care service, such as cardiology, oncology, and emergency and critical care. While extensive, this training does not always cover the entire breadth of cases that come through a clinic. To address this, the school launched its first “core competency modules” this spring.

Classified as “blended learning” because they deliver content in variety of ways, including online, small group, and self-directed learning exercises, the modules will expose students to rare cases, like rabies, or other types of cases they did not have the opportunity to experience while on rotations.

“Some modules will help fill knowledge and experience gaps,” says Robb Hardie, clinical associate professor of small animal surgery and chair of the school’s Clinical Education Taskforce. “But some will augment clinical training and help students acquire more advanced skills.”

Others will measure what students have learned at the end of a rotation, replacing more traditional assessments like quizzes. For example, “Approach to a Mass,” an online oncology and pathology module, uses videos to rehash different methods for sampling masses and preparing them for pathological analysis. It then guides students through three clinical cases.



In the online core competency module “Approach to a Mass,” students take on the hypothetical case of Buddy the Golden Retriever and make decisions about how to best diagnose his condition.

In the case of Buddy the Golden Retriever, students review the patient’s hypothetical medical history and physical examination results and then proceed step-by-step through the diagnosis process. They decide whether to sample masses found in the lymph nodes, how many samples to take, what methods to use, and whether the sample is adequate for analysis.

“Students make decisions based on the content they view in the module and what they learned during the rotation,” says Tyler Gregory, an instructional designer who helps faculty design and implement the modules. “Each question provides immediate feedback—whether it was correct, partially correct, or incorrect, and why.”

The module presents students with multiple options, each with its own drawbacks and advantages.

Carey, Mitchell Earn American Physiological Society Honors

Two UW School of Veterinary Medicine faculty, Hannah Carey and Gordon Mitchell, have received American Physiological Society (APS) 2014 Distinguished Lectureship Awards for their outstanding contributions to physiology.

Carey, professor in the Department of Comparative Biosciences, received the August Krogh Distinguished Lectureship for Comparative and Evolutionary Physiology. Mitchell, professor and chair of the Department of Comparative Biosciences, received the Julius H. Comroe, Jr. Distinguished Lectureship for Respiration. They will both present in April at the Experimental Biology meeting in San Diego, Calif.

Each year, 12 award recipients represent the best in the various disciplines of the field. The honor is rarely bestowed on faculty from schools of veterinary medicine, and this is only the second time two faculty members from the same university have received the honor in the same year.

Available Core Competency Modules

Orientation and Training
(Dermatology)

Approach to a Mass
(Oncology/Pathology)

Bone Marrow Core Technique
(Oncology)

Feline Respiratory Distress
(Small Animal Internal Medicine)

“Their goal is to make decisions that will reduce time to diagnosis, patient recovery time, and the overall cost for the client,” says Timothy Stein, assistant professor of oncology. “The best answers lead to the best outcome in all areas.”

UW Veterinary Care houses 19 specialty services that host student rotations, and eventually each will have a module. Modules focusing on euthanasia and chemotherapy are in the works, and a complex internal medicine case is planned for the future. It will include a complete patient chart and videos with actors playing out scenes as part of a choose-your-own-adventure.

“This is called adaptive content release,” says Gregory. “Based on the decisions a student-clinician is making, we can set them off on a chain of events.”

Nik Hawkins

SVM Helps Fund Protective Vest for K9

Thanks to donations from faculty, staff, and students at the UW School of Veterinary Medicine (SVM), a campus police dog is carrying out her duties with added protection.

Maya, a two-year-old German Shepherd who serves as a K9 officer with the UW–Madison Campus Police, is now the proud owner of a bullet- and knife-proof vest, which can go a long way in keeping her safe in the field. Each year, police dogs suffer stab or gunshot wounds at the hands of suspects they are trying to apprehend. Unfortunately, many law enforcement agencies do not have the funds necessary to purchase K9 body armor.

To help vest Maya, SVM Facilities Manager Karen Mier coordinated the collection of \$850 at the SVM in the space of two weeks, and Wisconsin Vest-a-Dog, a non-profit dedicated to providing protective vests for every police dog in the state, picked up the rest of the \$1,000 price tag.

Mier previously coordinated the collection of funds at the SVM to help vest a K9 officer with the Adam’s County Sheriff’s Department, and she decided to try it again when she heard a campus police dog was in need.

“We want to help protect these dogs, especially because they’re treated here at UW Veterinary Care,” says Mier. “And once we vest a dog, they become our dog too.”

Nik Hawkins



UW Campus Police K9 officer Maya receives her protective vest, purchased with donations from students, faculty, and staff at the UW School of Veterinary Medicine.

Kawaoka Honored for Research Excellence

Yoshihiro Kawaoka, a professor of virology at the UW School of Veterinary Medicine known for his groundbreaking work on influenza, has received the 2014 Excellence in Research Award from the Association of American Veterinary Medical Colleges (AAVMC).

The award honors those who demonstrate excellence in original research, leadership in the scientific community, and mentoring in any veterinary medical discipline. Selected by a committee of peers, the recipient is designated as the outstanding veterinary medical researcher of the year.

“Dr. Kawaoka’s research demonstrates the important impact veterinarians can make on global health, benefitting both animals and humans,” says Dean Mark D. Markel. “His contributions to our understanding of how viruses mutate will hopefully enable the scientific community to combat the next pandemic viral outbreak more effectively.”



BRUCE RICHTER

Program Prepares Students to Fight Foreign Diseases

For DVM students participating in the United States Department of Agriculture’s (USDA) Smith-Kilborne program, a trip to Plum Island is no fun-in-the-sun vacation. Instead, it’s a once-in-a-lifetime, first-hand training experience with foreign animal diseases that could potentially threaten the U.S. domestic animal population.

Founded by the USDA Animal and Plant Health Inspection Service, each year the Smith-Kilborne program teaches 30 students from schools of veterinary medicine across the United States, Canada, and Mexico about foreign animal diseases, risk analysis, and emergency management, followed by laboratory sessions at the Plum Island Animal Disease Center for hands-on training on the most significant foreign animal diseases.

For the past decade, the UW School of Veterinary Medicine (SVM) has sent one student annually to the week-long experience, which begins at Cornell University in Ithaca, NY. Students practice real-world public health management skills by preparing speeches and talking points that they use in various mock communication scenarios, including simulated news conferences and media interviews.

In addition to lectures and



Marlene Tremblay



Megan Humphrey

discussions, students write proposals to improve disease preparedness and conduct epidemiological investigations by studying patterns, causes, and effects of diseases.

After a weekend in Mystic, Conn., students cruise to Plum Island, N.Y., home to a government diagnostic facility where scientists study more than 40 foreign animal diseases and several domestic diseases, including hog cholera and African swine fever. At the facility, students witness clinical signs of various foreign animal diseases like foot-and-mouth disease, African horse sickness, and Velogenic Newcastle disease.

According to Megan Humphrey, a member of the Class of 2015 who participated in the program last year, students learn about the major economic threat these diseases pose to the U.S. economy. In a presentation to the

SVM community, Humphrey cited how a 1980s outbreak of highly pathogenic avian Influenza, better known as the fowl plague or H5N1, cost the poultry industry \$65 million dollars, left 17 million birds dead, and led to a 30% increase in egg prices.

Though the program means to expose future veterinarians to clinical warning signs so they can help control disease outbreaks, it has led one SVM alumna to a career in public health.

“I had done basic research during my studies, but the Smith-Kilborne program introduced me to the field of global disease outbreak prevention,” says Marlene Tremblay, Class of 2013. “It is part of the reason I entered the epidemiology field.”

Tremblay is working on disease modeling as a research intern with Dörte Döpfer, a professor of food animal medicine in the Department of Medical Sciences and expert on veterinary epidemiology. She is currently working on two projects that involve modeling food-borne diseases to better understand disease predictors and estimate its global burden. Her work includes collaborations with the Centers for Disease Control and the World Health Organization. She is also studying the impact livestock ownership has on human diseases like malaria by using data collected from 400 different locations in Kenya.

“Getting to see real diseases and meet people who have dealt with these problems globally really stood out as the highlights of the Smith-Kilborne program,” says Tremblay. “But the best thing was the contacts I made. The students who graduated with me and the people who taught me will be my colleagues throughout my career.”

Jane Pruhs

Faculty, Students Earn Top Honors at AABP Conference

Kenneth Nordlund, clinical professor of food animal production medicine, received the American Association of Bovine Practitioners (AABP) 2013 “Award of Excellence” at the organization’s annual conference in Milwaukee, Wis., in September. Established in 1989, the annual award recognizes the contributions and direct influence of the daily practice of bovine veterinarians

The honors were created to recruit outstanding students towards careers in bovine veterinary medicine.

who serve in teaching, research, industry, or government areas.

Additional AABP recognition went to SVM students Janelle Hoffman, Chelsea Holschbach, Megan Foy, and Daniel

Haeflinger. The four students each earned the AABP Foundation-Zoetis Scholarship. Hoffman, Holschbach and Haeflinger won the Merck Animal Health Student Recognition award. Hoffman took home the AABP Foundation-Cargill Scholarship. The honors were created to recruit outstanding students towards careers in bovine veterinary medicine.

Jane Pruhs

TRAINING DOG from page 1
injuries in humans, and studies show that the device helps speed recovery. UWVC began using the orthotic devices on dogs nearly a decade ago, and more than 60 animals have benefited from this human-to-animal technological adaptation.

The hinged orthotic allowed veterinarians to adjust Diva's range of motion based on how well the tendon progressed through the healing process. The adjustments continued until Diva's Achilles tendon could withstand load-bearing weight.

New Technology Monitors Healing Process

Diva benefitted greatly from use of the orthotic device; however, the greatest challenge with tendon injuries is determining when patients should return to normal activities. "Tendon healing is a characteristically prolonged process," says Peter Muir, professor in the Department of Surgical Sciences at the UW School of Veterinary Medicine. "While the physical healing is achieved, the mechanical function of the tendon can lag behind."

According to Muir, if a dog returns to normal physical activities like jumping or intense running before the tendon is mechanically ready, reinjury can occur.

To monitor the healing process Muir employed a new technique, developed and only available at UW-Madison, called acoustoelastography (AEG). This technique uses ultrasound imaging to evaluate the elasticity of tendons.

AEG was developed by UW School of Engineering Professor Ray Vanderby and his student, Hirohito Kobayashi. They theorized that the information provided by ultrasound was being underutilized, which led them to conduct studies on optimizing the use of sound wave propagation for ultrasound imaging. The duo found that ultrasound can be used not only to study affected structures in the body but also to estimate tissue strength.

Vanderby and Kobayashi's research helped them co-found a technology company, Echometrix, which created the FDA-approved EchoSoft in the fall of 2012. On the human side, the Echosoft system allows physicians to make

a quantitative assessment of the stiffness of muscles, ligaments, and tendons to help them diagnose and better treat injuries. This same technology is being used by veterinarians exclusively at UW Veterinary Care in the treatment of performance horses and dogs.

Clinical Canine Treatment Using Acoustoelastography

Prior to Diva's treatment, AEG had only been used in-vitro and on normal canine tendons, so it was unclear if it could accurately monitor the healing of an injured tendon. But the new technology allowed Muir and his team to make better recommendations.

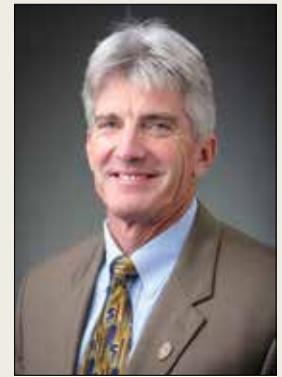
Diva's team gave her AEG ultrasound examinations immediately after surgery and at each recheck appointment. At her 22-week check-up, she showed no signs of lameness, and standard ultrasounds confirmed that the tendon was getting thicker. However, her AEG results showed the mechanical properties of her left Achilles tendon still lagged behind her normal right leg, indicating a need for additional recuperation and check-ups. At 29 weeks after her surgery, AEG revealed the stiffness of the injured Achilles tendon mirrored that of the healthy right tendon, so her clinicians removed her orthotic, and she resumed her normal active lifestyle.

"Acoustoelastography assists clinicians in directing patient recovery by quantifying mechanical function and preventing a return to regular activity levels before the tendon is strong enough," says Muir. "This technology is a major advance in diagnosis and management of tendon injury."

Diva's owner could not be more pleased with the results. "I have been a dog trainer for 15 years, and I never saw an injury like Diva's before," says MacFarlane. "I feel very fortunate to be close enough to use the cutting-edge technology available at UW Veterinary Care."

Jane Pruhs

Markel Earns Alumni Achievement Award



Dean Mark D. Markel has been selected by his alma mater, the School of Veterinary Medicine at the University of California, Davis, to receive the 2014 Alumni Achievement Award.

The highest honor given by the school's faculty, the award recognizes Markel's exemplary achievements in academic veterinary medicine and numerous contributions to the fields of comparative orthopedics and veterinary medical surgery.

Markel earned his Doctor of Veterinary Medicine degree at UC Davis and his Ph.D. at the Mayo Graduate School of Medicine. He studies the regeneration of musculoskeletal tissues, including enhancement of fracture healing, cartilage resurfacing techniques, tendon healing and regeneration, and development of long bone fracture repair methods. He is also co-director of the Comparative Orthopaedic Research Laboratory and Vilas Distinguished Achievement Professor.

Nik Hawkins



NIK HAWKINS

Dr. Peter Muir takes a moment to celebrate Diva's full recovery during a follow-up appointment at UW Veterinary Care. Muir and his team operated on Diva's ruptured Achilles tendon and used cutting-edge ultrasound technology to monitor her healing progress.

IN MEMORIAM

Dr. Peter Scott MacWilliams

Peter Scott MacWilliams, age 68, passed away on Jan. 1, 2014. Dr. MacWilliams was one of the School of Veterinary Medicine's original faculty and retired in 2007. As an excellent clinical pathologist and award-winning teacher, he served in many capacities, including president of the Wisconsin Veterinary Medical Association. In his memory, his family is creating a scholarship at the SVM. For more information, contact Kristi Thorson at 608-265-9692.

Study Identifies Gene Mutation as Cause of Canine Tremor Disorder

Weimaraners—sleek, athletic dogs originally bred for hunting—are known for their striking, silver-tinged coats. Unfortunately, they also are known for a rare tremor disorder reported widely throughout North America and Europe.

Sometimes called “shaky puppy syndrome,” the condition occurs almost exclusively in Weimaraners. It first appears in one- or two-week-old pups, and the tremors grow in intensity for several weeks. While the trembling diminishes and eventually stops in most cases, it can make nursing difficult, which may prove fatal without intensive care.

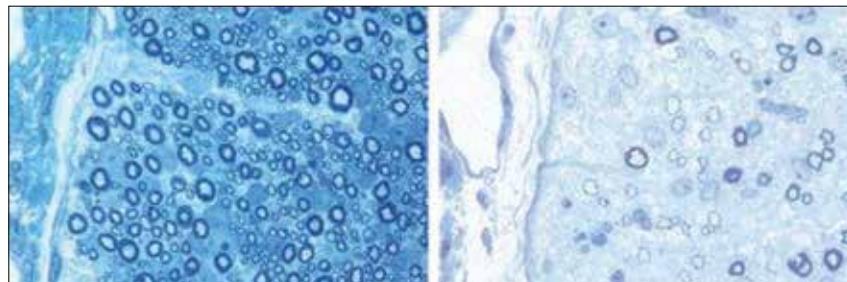
Past research suggests that the disease is an autosomal recessive trait—in other words, it only occurs when a gene is inherited from both parents. Now, a new study published in the journal *GLIA* hones in even further on the cause.

A team of researchers led by Ian Duncan, professor of neuroscience at the UW School of Veterinary Medicine, has traced the source of the tremor disorder to a specific gene mutation that curtails the formation of myelin in the brain and parts of the spinal cord. A lack of myelin, a fatty substance that sheathes and protects nerve fibers, can disrupt the electrical signals that nerves send to produce movement.



ISTOCK.COM

Top: In addition to their striking, silver-tinged coats, Weimaraners are known for a rare tremor disorder reported widely throughout North America and Europe.



IAN DUNCAN

Bottom: The hallmark abnormality in Weimaraners affected by shaking puppy syndrome is lack of myelin in certain areas of the spinal cord. This image from a high-powered microscope shows the normally myelinated axons in the spinal cord of an unaffected control group Weimaraner (left) and the sparsely scattered myelinated axons in the spinal cord of a Weimaraner affected by the syndrome (right).

“Insufficient myelin production is called hypomyelination, and it’s associated with many genetic neurological diseases in animals and humans,” says Duncan. “In the case of Weimaraners, it leads to notable tremors.”

The researchers tracked down the mutation through several complicated steps. Using samples from three unrelated families of

Weimaraners—including dogs with the syndrome and an unaffected control group—they conducted a genome-wide association study, which examines common genetic variants in a group of animals to see if any are associated with a specific trait, such as a disease. This narrowed their search to a single canine chromosome.

Next, they sequenced all genes found in specific areas of interest in the chromosome. Gene sequencing determines the precise order of nucleotides in DNA molecules, and in this case it revealed a deleted nucleotide in a gene that encodes folliculin-interacting protein 2 (FNIP2). This mutation causes FNIP2 to be shortened, which results in the hypomyelination found in Weimaraners.

“We don’t know the exact function of FNIP2 in myelination yet,” says Duncan. “But our data suggest that the shortening of this protein delays or maybe even stops the maturation of some

oligodendrocytes, which are brain cells that are critical in the production of myelin.”

One of the research team’s goals was to develop a bench test to identify dogs that carry the mutation, which could help reduce or eliminate the disorder through selective breeding. Under the direction of Duncan’s co-author, Danika Bannasch, the Veterinary Genetics Lab at the University of California, Davis is now analyzing Weimaraner DNA sample submissions for this purpose.

The study of this syndrome also may offer insights for human medicine. A number of developmental disorders in children linked to a delay in myelination have been reported, but the basis for the defects is not yet known. According to Duncan, this novel mutation in the canine FNIP2 gene provides a potential candidate in human disorders and suggests that the human FNIP2 gene should be investigated as the possible cause.

“The production of myelin is a complex process, and the genes involved must be expressed in the correct sequence for it to occur normally,” says Duncan. “We can understand this process better by examining animals in which it has gone awry due to gene mutations.”

Nik Hawkins

Making a Better Flip-flop to Overcome Illiteracy and Disease

Thanks to a recent \$100,000 Grand Challenges Exploration grant from the Bill & Melinda Gates Foundation, Tony Goldberg and Sarah Paige of the UW School of Veterinary Medicine are redesigning flip-flops to overcome illiteracy and better combat helminths: parasitic worms that can burrow into bare feet and cause gastrointestinal illness.

Their design, the Holoflop™, is a flip-flop that serves two functions: it provides physical protection for feet from soil-borne parasites, and it displays a hologram that shows the benefits of wearing sandals to people who cannot read through symbols, graphics, and images to deliver health messages.

The proposal is one of 81 projects selected for initial Gates Foundation funding from among more than 2,700.



Alum Helps Rescue Dogs and Displaced Pets in Disaster Zones

The call came at midnight last September. Laura McLain Madsen had one hour to arrive at Utah Task Force 1 headquarters in Salt Lake City. Her team, consisting of 76 people and four dogs, was being deployed to Boulder, Colo., where the surrounding area was in the midst of a 100-year flood that ripped buildings from foundations, wiped out roads, and left residents stranded for days.

This was the first official mission for the Class of 1997 alumna as a member of the Federal Emergency Management Agency (FEMA) Urban Search and Rescue Taskforce. Over the course of the next week, Madsen would serve as the round-the-clock resident veterinarian at the Boulder Municipal Airport, the home base for the helicopters brought in to evacuate stranded residents and their pets. Madsen's mission was to care for search and rescue dogs and evacuated animals.

As helicopters landed with evacuees, firefighters would pass pet carriers to animal control officials who supervised the animals until their owners made shelter arrangements with the Red Cross. A large number of evacuees had dogs and cats, but a few had exotics in tow, including parrots, turtles, small mammals, geese, fish, and even a monkey.

"A few evacuated animals had minor abrasions and lacerations, but most were surprisingly happy and healthy considering they had just gotten off a massive Chinook helicopter," says McLain Madsen. "The UW School of Veterinary Medicine trained us to deal with all species, and in Boulder, I saw all kinds of pets being evacuated. That knowledge really helped in this situation."

She also treated a wide variety of cases, but her most critical role was caring for an ill search and rescue dog from the Nebraska



Laura McLain Madsen, Class of 1997, works with a search and rescue dog under her care as a staff veterinarian with FEMA Utah Task Force 1. This fall, McLain Madsen was deployed to flooded areas near Boulder, Colo.

Task Force 1 unit, which was without a veterinarian.

Veterinarians, in short supply on the taskforces, serve a vital role by treating and maintaining the well-being of the canine unit. According to McLain Madsen, these dogs, valued at more than \$40,000 each, must pass a rigorous national certification process, which includes testing their command control, agility skills, barking alert skills (to notify rescuers of a find), and willingness to overcome innate fears of tunnels and wobbly surfaces under the guidance of the handler.

"It was nice that I was available to treat this working dog," says McLain Madsen. "Even though we were in an area with veterinary services, my immediate services kept several team members active in the field where they were needed."

McLain Madsen's relationship with FEMA began with her employer, Holladay Veterinary

Hospital (formerly Central Valley Veterinary Hospital), where she treated service animals from FEMA teams. FEMA stored supplies at the hospital, and she became close friends with several representatives before she joined the taskforce in 2012.

"Disaster preparedness is an interest of my mine, but it was my exposure to the search and rescue dogs that made me want to join the taskforce," says McLain Madsen, who writes a blog about preparing animals for disasters at preppingyourpet.com.

FEMA deploys the 28 different Urban Search and Rescue Taskforces to rescue victims of structural collapses caused by emergencies or disasters. Their work after the terrorist attacks on the World Trade Center and the Pentagon on Sept. 11, 2001, underscored the importance of their service.

McLain Madsen's role with the taskforce is part-time, but she embraces its mission completely. Recently, she began training her Catahoula dog, Tulo, to serve as a search and rescue animal.

"It was amazing how many hundreds of people were working the disaster from many different local, state, and federal agencies and organizations," she says. "Everyone was really positive and friendly, united by a desire to make a difference in the world."

During her veterinary medicine training, SVM faculty spotted McLain Madsen's aptitude for her future position. "I can't think of any of my former veterinary medical students that would be more competent or compassionate for performing the important tasks associated with animal rescue than Dr. McLain Madsen," says Ronald Schultz, professor in the Department of Pathobiological Sciences.

Jane Pruhs

Keeping Connected



Dear alumni:

Based on your feedback, you all enjoyed reading about what your classmates and other SVM alumni are up to as much as I did!

We were excited to hear from so many of you for our inaugural *Class Notes* publication and look forward to compiling your updates annually.

You spent four intense years together, but it's hard to keep in touch with everyone following graduation. *Class Notes* was created in response to requests from several of you to learn about what your classmates have been up to since then.

We've also heard that you are looking for ways to connect with SVM alumni for networking purposes, so we've created a LinkedIn group for you. "University of Wisconsin-Madison School of Veterinary Medicine Community" is a closed group, restricted to alumni, faculty, staff, and current students. We hope you will join the group so you can connect with colleagues and perhaps serve as a resource for current students. We also have a public page, "University of Wisconsin-Madison School of Veterinary Medicine," open to all with an interest in the school.

In addition, your alumni advisory board is in the process of establishing its charter. More information is coming soon, but the group has established its primary purpose: "to promote the advancement of the best interests of the University of Wisconsin School of Veterinary Medicine by providing fellowship and the furtherance of professional relationships among the alumni, students, faculty, staff, and friends of the School."

I welcome your feedback about any of these efforts or suggestions for new ones. You are talented professionals, dedicated to veterinary medicine, and generous with your support of one another. Keeping you connected to each other and the school is our highest priority.

On Wisconsin!

Kristi V. Thorson
Associate Dean for Advancement
and Administration

www.vetmed.wisc.edu

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On Call

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A NEWSLETTER FOR THE FRIENDS OF THE UNIVERSITY OF WISCONSIN–MADISON SCHOOL OF VETERINARY MEDICINE

Friendly Feline Breaks UW Veterinary Care Blood Donation Record

Sam, an orange tiger cat from Madison, Wis., may seem like your average feline. He likes a good rub, enjoys napping, and appreciates a tasty treat. But this six-year-old animal is anything but average. When it comes to blood donation, he's the cat's meow.

After nearly five years of regularly donating blood, he recently broke the record for feline blood donation at the UW Veterinary Care Animal Blood Bank.

Sam made his first blood donation on Nov. 17, 2008 and has made donations nearly every two months until his recent retirement in September 2013. His years of service have generated over 21 units in blood donations, the human equivalent of 20 pints or 2.5 gallons.



Geri Holzman snuggles with her cat, Sam, who recently broke the feline record for most blood donated at UW Veterinary Care.

The blood donation process takes several hours and involves sedation for the cats. Blood is collected from the jugular vein for later use throughout the animal hospital.

"I think Sam looked forward

to donating," says Dr. Julie Walker, a clinical assistant professor in the Emergency and Critical Care Service. "We try to make donating blood a positive experience. All the animals get treats just like humans get them after donating through the Red Cross."

In high-volume animal hospital settings, animals require blood transfusions just like humans. In order to provide blood products to treat illnesses such as anemia and clotting disorders, UW Veterinary Care maintains the Animal Blood Bank. Regular donors serving the blood bank include 11 dogs, 10 cats, and two cows.

Sam's owners, Rob Zimmerman and Geri Holzman, enlisted Sam's services because Holzman, UW

Veterinary Care orthopaedic and renal transplant coordinator, understands from experience the need for animal blood donations.

"Because I work so closely with animal transplant patients, I see the value of blood donation," says Holzman. "It is really a matter of life or death for these animals."

After his many years of contributions, Sam is enjoying a peaceful retirement at home with his fellow kidney donor cats, Mouse and Fraidy, and companion canines, Lily and Grizzly.

If you are interested in having your cat or dog evaluated for donating blood, learn more at uwveterinarycare.wisc.edu/blood-bank.

Jane Pruhs