WINTER 2016–17

# On Call

A MAGAZINE FOR FRIENDS OF THE UNIVERSITY OF WISCONSIN SCHOOL OF VETERINARY MEDICINE

## Animals Need Heroes Too

**A campaign for the future of the SVM**

## Zika Blockade

**A benign bacterium may be the key to preventing virus transmission**

## Remembering Barley

**The story of a lovable Lab — companion, stress reliever, and teacher**

School of Veterinary Medicine
UNIVERSITY OF WISCONSIN–MADISON

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**AnimalsNeedHeroesToo.com**

Infographic by Ashley Voss

# On Call

WINTER 2016–17

## Features


### Animals Need Heroes Too

The UW School of Veterinary Medicine has been pushing the limits of teaching and learning, clinical care, and biomedical research for more than 33 years. But now the school and its hospital are exceeding their boundaries. To continue their groundbreaking work, they need to break new ground, and Animals Need Heroes Too is a campaign to make it happen.

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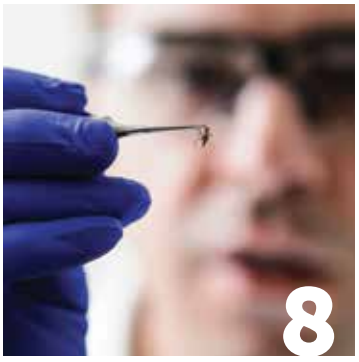


### Stopping Zika

Scientists looking for ways to stem the spread of the Zika virus may have found an answer in a benign bacterium called Wolbachia pipientis.

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### Ambassador of Cuteness

A big, lovable yellow Labrador Retriever named Barley was a staple of instruction in the school's first-year anatomy and neurology courses for 13 years. This is his story.

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## In Each Issue



## More



## On the Cover

Zeus, an Akita mix puppy, pauses for the camera during a physical exam in UW Veterinary Care's small animal surgery ward. (Photo: Nik Hawkins)



School of Veterinary Medicine
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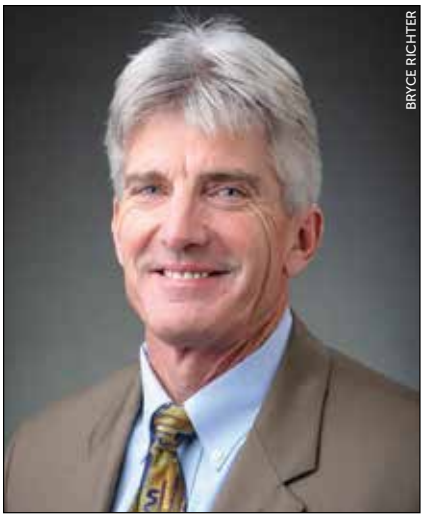
*Advancing animal and human health with science and compassion*

# Message from the Dean

## A New Look for *On Call* and Our Building


BRYCE RICHTER

Mark D. Markel

Welcome to the UW School of Veterinary Medicine's new and improved version of *On Call*. With this redesign, we can now offer you more and new content as well as larger photographs in a more readable format. In addition, we will continue to publish three issues per year, but now we will send all three issues to UW Veterinary Care clients, rather than just the winter issue, as we have done historically.

As is always the case, our winter issue highlights the importance of the school's donors and friends, thanking each of you for all that you do to help the school excel. Whether it's your support of our building expansion, our research, our scholarships for students, or simply our greatest needs, all are critical to our success and excellence.

In this issue we also highlight the official public launch of our building expansion campaign. The new addition and other enhancements, scheduled for construction in 2020–22, will double the size of our small animal hospital; significantly improve our large animal hospital, including the creation of a covered arena and a new isolation facility; increase our number of small conference room spaces, faculty and staff offices, and wet labs; and triple our infectious disease laboratory space. This effort is led by Karen Walsh and Debbie Cervenka, our capital campaign committee co-chairs and members of our Board of Visitors.

This summer, one of the highlights of our fundraising efforts for this campaign was a $3 million matching gift from Karen Walsh and Jim Berbee. As of the writing of this column, more than $1 million of that match has been committed.

The building expansion is vital for our efforts to find new ways to fight infectious disease, and this issue will give you a true sense of the importance of this work. The Zika virus epidemic has been in the headlines a great deal over the last year. As you may know, this disease has afflicted millions of individuals, and its effects can be devastating for pregnant women and their unborn babies. But you will see in one of our feature articles, "Stopping Zika," that the SVM is an international leader in understanding the impact of the virus on pregnancy and in developing methods to prevent infection.

I hope you enjoy reading this issue. If you have any thoughts on this new format or suggestions for how it can be improved, please share them with Nik Hawkins, our communications director and *On Call* editor, at nik.hawkins@wisc.edu or 608-263-6914.

Mark D. Markel, Dean


## On Call WINTER 2016–17

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The printing and distribution of this magazine were funded by donations to the school. To make a gift, contact Pat Bowdish at pat.bowdish@supportuw.org or 608-294-7661 or Heidi Kramer at heidi.kramer@supportuw.org or 608-327-9136.

# Socializing with the SVM

Friends of the school sharing their thoughts (and pets) on social media

"Thank you so much for saving the life of my pet rabbit, Luna! With the extent of her unique injury, there is no doubt she would not have survived if you hadn't agreed to take over her care. She is healing beautifully and will have a wonderful life thanks to your expert and loving care!"

–Jennie Masanz

"Our boxer came home from his 12th and final cancer treatment today ... you sent him on his way with a red bandana. I thought it was just a sweet gesture until I got up close and the tears started as I realized all the nurses and doctors there today had signed it with encouraging words."

–Jayme Lynn

# Ask a UW Veterinarian


## Tricky Tumors

*This issue's expert response comes from* ***Ruthanne Chun DVM'91****, a board-certified veterinary medical oncologist and director of UW Veterinary Care.*

**Question:** What is the incidence of mast cell tumors in a dog after successful chemotherapy treatment? My dog, Sumo, was treated at UW Veterinary Care and has been in remission for three years, but we recently found three small tumors on him. The tumors were removed this week by our local veterinarian, and we are waiting on the pathology report.

–Kathy Trudelle, Sauk Village, Ill.

**Answer:** Mast cell tumors are one of the most difficult to predict in terms of response to therapy, recurrence, and cure rate. Factors that go into determining treatment recommendations include location, rate of growth, number of sites, and microscopic appearance. Since your dog was treated with chemotherapy, it is likely that the oncologists were concerned that those earlier tumors were more aggressive and had the potential to recur. However, it is unusual that your dog had three years of remission before new tumors occurred. Fingers crossed that these are not mast cell tumors and that they are some other benign growth.

**Editor's note:** *Prior to going to press, we received good news that the growths on Sumo's skin were not mast cell tumors; rather, they were benign dermal fibrosis and were removed successfully.*

## Questions

**Have a question for our veterinary medical experts?**

Please send them to Nik Hawkins, *On Call* editor, at **oncall@vetmed.wisc.edu**. We cannot guarantee responses to all submissions. For any urgent pet health issue, please contact your veterinarian directly.

# New Equipment Provides Advanced Care for UWVC Equine Patients

Two new advanced pieces of equipment, purchased with the help of generous donations, are improving the equine patient experience at UW Veterinary Care (UWVC).

With the addition of a small, flexible needle arthroscope, UWVC veterinarians can now perform arthroscopic surgery on joints while animals are under sedation rather than general anesthesia. This poses less risk for patients and also enables surgeons to view joint structures under normal anatomical circumstances (i.e., while the animal is standing), which can increase the accuracy of diagnoses.

"Other diagnostic techniques, such as ultrasound and radiography, offer a more limited view of the joint," says **Sabrina Brounts,** clinical associate professor of large animal surgery, "so this new tool can definitely add to our evaluations."

The new unit is especially useful for performing arthroscopy on the stifle, a complex hind-limb joint — basically the equivalent of the human knee — that connects the femur, patella, and tibia in four-legged mammals and is a common location of injuries in athletic horses. As an added benefit, recovery times for evaluative procedures involving the needle arthroscope are shorter than a standard arthroscopy unit. The new tool can also be used on dogs and other small mammals, but equine patients likely will be the primary beneficiaries at UWVC.

A $10,000 donation from **Chuck** and **Sandy Yanke,** long-time supporters of the UW School of Veterinary Medicine, and an $8,000 gift from the **Split Rail Foundation,** helped the clinic purchase the arthroscopy unit, which adds to a long list of equine services that only UWVC offers in Wisconsin. This includes nuclear imaging, dynamic endoscopy for diagnosing respiratory issues during full exercise, acoustoelastography for monitoring tendon injuries, and a board-certified specialist in equine sports medicine and rehabilitation. "I am not aware of anyone else in the state performing this arthroscopy procedure," says Brounts.


NIK HAWKINS (2)

Certified veterinary technician Laura Allen secures a portable electrocardiogram (ECG) unit in a surcingle belt strapped to Durango, an equine patient at the UW Veterinary Care Morrie Waud Large Animal Hospital. The new battery-powered unit is wireless, which allows clinicians to monitor the animal remotely, including while it is exercising outdoors.

As another boon for equine patients and owners, UWVC has also acquired a new portable electrocardiogram (ECG) machine. An ECG is used to assess the structure and function of an animal's heart by recording its electrical activity as transmitted through electrodes placed on the skin. It can detect arrhythmias and other abnormalities and monitor the effects of various treatments. The new battery-powered unit is wireless and small enough to be strapped to a horse in a surcingle belt, allowing clinicians to monitor the animal remotely, including while it is running or walking outdoors.

"This is especially useful because many heart conditions only become apparent during exercise," says **Ana Moreira,** a large animal medicine resident at UWVC.

Other advantages of the portable ECG unit include live readings transmitted to a laptop or portable device via Bluetooth technology, a memory card that can store days-worth of data, and electrodes that are fastened via stickers rather than cumbersome and uncomfortable crocodile clips.

The ECG machine was purchased with the help of a combined $5,000 gift from sisters **Barb** and **Patty Van Housen,** which was inspired by the exceptional care that Patty's horse, **Rinka,** received during an emergency visit to the UWVC Morrie Waud Large Animal Hospital.

*Nik Hawkins*

# Spinoff Company with SVM Ties Gets FDA OK for Bacteria-killing Wound Dressing

Imbed Biosciences, a medical device start-up company co-founded by scientists from the UW School of Veterinary Medicine (SVM), has received clearance from the Food and Drug Administration to market its patented wound dressing for human use.

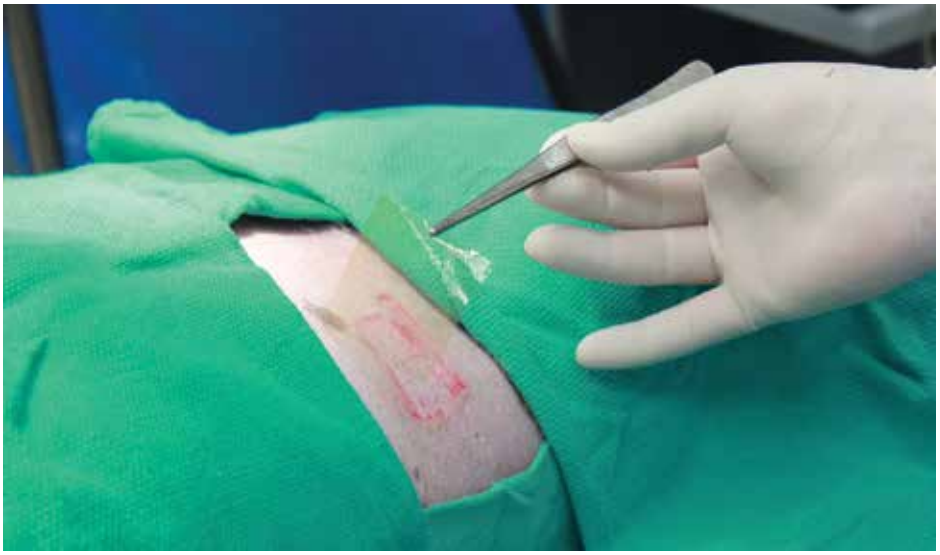
The dressing it calls Microlyte Ag is a sheet as thin as Saran Wrap that can conform to the bumps and crevices of a wound, says company CEO Ankit Agarwal. As of August 2016, the dressing was cleared by the FDA as a class II medical device for prescription and over-the-counter use.

Like many dressings now used to treat burns and other persistent wounds, Microlyte Ag contains silver to kill bacteria — but in much smaller quantities.

"Silver is an excellent antimicrobial agent," says Agarwal, a co-founder of the Fitchburg, Wis.-based company, "as it is active against a broad range of bacteria and yeast. But the large silver loads found in conventional silver dressings can be toxic to skin cells. Our dressing uses as little as 1 percent as much silver as the competition, and yet the tests we submitted to the FDA showed that Microlyte kills more than 99.99 percent of bacteria that it contacts."

That kill ratio even appeared in tests against some of the nastiest hospital-acquired superbugs, including methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant enterococcus.

Microlyte also overcomes a key problem with existing dressings: stiffness. Under a low-power microscope, a wound has bumps and fissures — hiding places for bacteria. The Microlyte dressing inherently adheres to moist surfaces and is so flexible that it drops into the fissures, leading to the sweet combination of greater destruction of bacteria at much lower doses of silver.



IMBED BIOSCIENCES

Imbed's Microlyte dressing is applied to a wound on a pig. The ultra-thin dressing conforms to the wound, bringing the antimicrobial silver into direct contact with bacteria.

Although it retains moisture, Microlyte is also ultrathin and breathable, allowing oxygen to reach the wound and gases to exit, all factors that promote healing. The slow release of the silver means the dressing can remain in place for at least one day. And because the material is a hydrogel (i.e., water based), it can simply be rinsed off as needed before replacement.

Experience with animals shows that the ultra-thin dressing simply sloughs off as the wound heals. All of these advantages should reduce the need to change dressings, which can be so painful that sedation is needed, especially for children. In addition to reducing pain, limiting the number of bandage changes cuts down on supply costs and nurse visits.

"We are seeing in a limited number of cases that it does provide us with a remarkable new tool for dealing with chronic wounds" in dogs and cats treated at the SVM, says **Jonathan McAnulty,** chair of the Department of Surgical Sciences. "We certainly have no reason to think that this will be different with humans," adds McAnulty, who is also a company co-founder. "The principles are the same, and a lot of the problems are the same."

The dramatic closure of wounds that have resisted months of conventional treatment "suggests that chronic bacterial contamination of the wound surface, even when it looks relatively healthy, is a significant factor inhibiting healing in many cases," McAnulty says. "Once we treat with our dressing, we start to see very dramatic closure of these wounds."

McAnulty says he's starting to use Microlyte earlier in treatment. "Certainly it seems appropriate for prevention."

The ultra-thin dressing material was invented in the lab of Nicholas Abbott, a UW–Madison professor of chemical and biological engineering, when Agarwal was a postdoctoral fellow. During the development of the new disinfectant technology, **Charles Czuprynski,** professor and chair of the SVM's Department of Pathobiological Sciences and also a company co-founder, lent his extensive knowledge on the formation of biofilms.

The dressing will compete in the $2 billion market sector of "advanced wound dressings," which are used to treat diabetic ulcers, venous ulcers, burns, bedsores, and other difficult wounds.

*David Tenenbaum*

# STOPPING ZIKA

## Benign bacteria block mosquitoes from transmitting devastating virus

*By Kelly April Tyrrell*

Researchers at the UW School of Veterinary Medicine (SVM) have confirmed that a benign bacterium called Wolbachia pipientis can completely block transmission of Zika virus in Aedes aegypti, the mosquito species responsible for passing the virus to humans.

**Matthew Aliota PhD'10,** a SVM scientist and first author of the paper published in the journal *Scientific Reports*, says the bacteria could present a "novel biological control mechanism," aiding efforts to stop the spread of Zika virus.

Thirty-nine countries and territories in the Americas have been affected by the Zika epidemic, and it is expected that at least 4 million people will be infected by the end of the year. Scientists believe the virus is responsible for a host of brain defects in developing fetuses, including microcephaly, and has contributed to an uptick in cases of a neurological disorder called Guillain-Barre syndrome. There are not yet any approved Zika virus vaccines or antiviral medications, and ongoing mosquito control strategies have not been adequate to contain the spread of the virus.

Researchers led by **Jorge Osorio MS'88, PhD'96,** a professor in the SVM's Department of Pathobiological Sciences, and Scott O'Neill of the the Eliminate Dengue Program (EDP) and Monash University in Melbourne, Australia, are already releasing mosquitoes harboring the Wolbachia bacterium in pilot studies in Colombia, Brazil, Australia, Vietnam, and Indonesia to help control the spread of dengue virus. Their work is supported by the Bill and Melinda Gates Foundation.

An important feature of Wolbachia is that it is self-sustainable, making it a very low-cost approach for controlling mosquito-borne viral diseases that are affecting many tropical countries around the world.

JEFF MILLER (4)


Clockwise from left: A vacuum tube holds a blood-fed strain of Aedes aegypti mosquito in place under a microscope; a blood-fed strain of Aedes aegypti mosquitoes on ice; wild type strain of Aedes aegypti in storage (2). All photographs were taken in a research lab insectary in the UW School of Veterinary Medicine´s Robert P. Hanson Biomedical Sciences Laboratories.

"In two of our initial study sites in Australia, approximately 90 percent of the mosquitoes continue to be infected with Wolbachia after initial release more than six years ago," says O'Neill.

EDP has now received additional endorsement from the World Health Organization's Vector Control Advisory Group to conduct further pilot studies and scale up in endemic areas.

Wolbachia can be found in up to 60 percent of insects around the world, including butterflies and bees. While not typically found in the Aedes aegypti mosquito — the species that also transmits dengue, chikungunya, and yellow fever viruses — O'Neill discovered in the early 1990s that Wolbachia could be introduced to the mosquito in the lab and would prevent the mosquitoes from transmitting dengue virus.

Zika virus belongs to the same family as dengue virus, and Aliota and Osorio — with co-authors Stephen Penaido at the SVM and Ivan Dario Velez at the Universidad de Antioquia in Medellin, Colombia — asked whether Wolbachia-harboring Aedes aegypti may also be effective against Zika virus. They were also interested in studying the mechanisms behind Zika virus infection and transmission in mosquitoes.

In the study, the team infected mice with Zika virus originally isolated from a human patient and allowed mosquitoes from Medellin to feed on the mice either two or three days after they were infected. The mosquitoes were either harboring the same strain of the Wolbachia bacteria (called wMel) used in field studies or were Wolbachia-free, and the mice had levels of virus in their blood similar to humans infected with Zika virus.

An additional group of mosquitoes, both wild-type and Wolbachia-infected, was allowed to feed instead from a membrane containing sheep's blood spiked with a high concentration of Zika virus,

per other standard laboratory studies.

Four, seven, 10, and 17 days after the mosquitoes fed on Zika-virus-infected blood, the researchers tested them for Zika virus infection, assessed whether the virus had disseminated (i.e., spread to other tissues in the mosquito), and examined whether the virus made its way to the mosquito saliva, where it must be present to be transmitted.

"The first site of replication for arboviruses is the mosquito midgut," says Aliota. "It eventually leaves the midgut and is swept in their blood to secondary tissues and eventually to the salivary glands, where it replicates more and is eventually spit out."

They found that mosquitoes carrying Wolbachia were less likely to become infected with Zika virus after feeding on viral blood, and those that were infected were not capable of transmitting the virus in their saliva.

According to Osorio, in Aedes aegypti with Wolbachia, they saw reduced vector competence, which is defined as the intrinsic ability of an insect to support the development or replication of a pathogen like a virus and then transmit it. "Mosquitoes with Wolbachia were less capable of harboring Zika virus," he says, "and though they do get infected with Zika, it is to a lesser extent than wild-type mosquitoes."

They also found that where mosquitoes got their blood meal — whether from mice or the membrane — impacted their infection and transmission status. This has implications for other laboratory-based Zika virus studies, Aliota says.

Though mice had a lower concentration of virus in their blood than the blood contained in the membrane, mosquitoes that fed on the mice were infected at higher rates than those that were membrane-fed. The levels of virus found in the mice were also more similar to those seen in human infections.

Non-Wolbachia-containing mosquitoes that acquired Zika virus from mice were also capable of transmitting the virus in a shorter number of days, and in less time than other studies have shown. Additionally, the researchers learned that a relatively low percentage of Zika-virus-transmitting mosquitoes may be sufficient to sustain an outbreak.

"A surprisingly low percentage of mosquitoes are actually capable of transmitting the virus," Aliota says, "but given the size of the outbreak, and that we think mosquitoes are the driver of the outbreak, the results were somewhat unexpected. It just goes to show you how much we still need to understand about the basic biology of this virus."

The study is one of the first to study Zika virus transmission dynamics using a living host, says Aliota.

Importantly, the team also confirmed that the strain of Wolbachia used does not impact the Aedes aegypti mosquito, which is important to the success of field studies.

Once inside a mosquito, Wolbachia is passed from mother to offspring, so newborn mosquitoes will contain the bacteria and incorporate it into the wild population. EDP hopes to see greater than 80 percent of Aedes aegypti mosquitoes in study areas harboring Wolbachia. According to Osorio, mosquitoes carrying Wolbachia in the study site in Medellin are close to reaching that number.

The Zika virus study was funded in part by the National Institutes of Health.

## A World Leader in Zika Virus Research

The UW School of Veterinary Medicine was at the forefront of Zika virus research during the 2015–16 epidemic. Even before the virus began making international headlines, SVM scientists were working to better understand the disease. In fact, SVM researchers were part of the team that first confirmed the presence of Zika in Colombia, and they have since developed a new mouse model for studying the disease.

In addition, through their role in a UW–Madison campus-wide collaboration on Zika, they helped discover that one infection with the virus protects against future infection, a promising finding for vaccine design. The research team continues to learn more about the mechanisms by which the virus causes birth defects. Ultimately, more knowledge will lead to better ways to fight the disease.

In July 2016, the UW–Madison campus produced a video highlighting the efforts of university scientists — including the SVM's Matthew Aliota PhD'10, Thomas Friedrich, Ted Golos, and Jorge Osorio MS'88, PhD'96 — to combat the Zika virus (view it at **go.wisc.edu/zika-video**). These experts have also been featured in news outlets across the globe, including the Discovery Channel's *Daily Planet*, *Scientific American*, *Discover Magazine*, *The New York Times*, *The Guardian*, and *Smithsonian Magazine*, and more.

*Nik Hawkins*

JEFF MILLER

ISTOCK: KURIL_SOLOMOV


# Breaking New Ground for Groundbreaking Work

## SVM launches campaign for building expansion

*By Nik Hawkins*

Zeus, an Akita mix puppy, greets Sara Colopy DVM'04, PhD'12 (right), clinical instructor of small animal surgery, and certified veterinary technician Lindsay Brusda.

It's a typical Thursday morning in the small animal surgery ward at UW Veterinary Care (UWVC). A steady stream of four-legged, furry patients trots into the room, led on leashes by attentive technicians and students. They're here to be examined and prepped for the day's soft tissue surgeries.

At a table in one corner, a technician, resident, and surgeon have gathered around **Zeus**, an Akita mix puppy in need of an umbilical hernia repair. Zeus squirms and licks his way through their careful inspection as two students quietly observe. Moments later, word arrives that anesthesia is ready for Zeus. A technician scoops him into her steady arms and easily threads her way through orderly clusters of patients and practitioners.

Only a few weeks prior to this scene, the ward would not have handled so much traffic quite as well. Having undergone significant remodeling in summer 2016, which included rearranging workstations and eliminating redundant fixtures, the ward now makes better use of available space to welcome more patients comfortably and maximize staff efficiency. The remodel is a prime example of how UWVC is adapting to accommodate a rapidly growing caseload.

In 2015–16, for the third year in a row, UWVC handled a record number of patient visits, topping 26,500 in a facility built to handle 12,000; and, since 2012, demand for the clinic's services has increased by more than 25 percent. But the hospital and those who work there have made every effort to minimize the effects of the space crunch and keep the focus on quality patient care, from retrofitting rooms and repurposing storage areas to simply adjusting admirably to the conditions they face each day.

"It's a testament to the quality of our faculty, staff, and students that they are able to make accommodations within these circumstances so there's no detrimental impact on our patients and clients," says **Ruthanne Chun, DVM'91,** associate dean for clinical affairs and UWVC's director. "But with demand projected to reach 35,000 annual patient visits in the near future, these measures can only go so far."

To further complicate matters, technology is outpacing the infrastructure of the clinic, which was constructed in 1983 when computers were not yet pervasive and high-tech medical devices not as advanced or numerous. And these space and utilities issues extend to the rest of the Veterinary Medicine Building, from instructional areas to faculty offices to biomedical research laboratories.

Still, the remodeled surgery ward is a preview of what could be a broader transformation at the UW School of Veterinary Medicine as it meets these challenges with a new building expansion campaign themed "Animals Need Heroes Too." Its goal is to raise funds for a new, state-of-the-art facility connected to the current building and significant enhancements for existing infrastructure. The project will enhance the patient and client experience at UWVC while upgrading the school's facilities for teaching and learning and expanding space for research on diseases that threaten the globe.

"We've done so much to improve animal and human health despite the limitations we face in our current surroundings," says Dean **Mark D. Markel**. "And though we're a relatively young school, we still rank in the top five of all U.S. colleges of veterinary medicine. It thrills me to imagine what more we could accomplish with room to grow."

## The Case for Expansion

When the Veterinary Medicine Building was constructed nearly 35 years ago, UWVC housed 10 specialties. Since then, the hospital's expertise has grown to encompass more than double that — the most specialties of any clinic in the state — while the footprint has changed very little. To make room for this expanding roster of specialists, and to help them collaborate more effectively on complicated patient cases, the campaign calls for doubling the size of the small animal hospital.

This expansion will create space for more exam rooms, a centralized diagnostic imaging center that brings a trailer-bound MRI unit inside the building, a cancer center that encompasses the radiation and medical oncology services, a larger emergency and critical care unit with improved housing for patient recovery, and an expanded waiting area that includes dedicated space for cats and small exotic animals.

"This project will reduce wait times, especially for some of our most in-demand specialty services, and create a more comfortable place for patients and clients," says Chun.

The plan also calls for significant improvements to UWVC's Morrie Waud Large Animal Hospital. This includes a covered arena that provides year-round access to lameness and neurological exams, regardless of the weather, as well as a bigger and safer isolation facility, a high-demand service that will be the only one of its kind in the state.

"The expansion also benefits Wisconsin's dairy industry by improving the overall clinical education of our students," says **Keith Poulsen DVM'04, PhD'12,** clinical assistant professor of large animal medicine. "This state is blessed with a very talented pool of dairy veterinarians, and with better facilities, we can continue to support and augment it in new ways."

In addition to transforming clinical care at UWVC, the building expansion will bolster the school's training of future veterinarians and clinical specialists, partly by facilitating more patient visits. More cases means exposure to more species, breeds, diseases, and conditions and, therefore, better preparation for practice. To encourage collaborative learning, the expansion plan also includes new small group discussion environments and special areas for hospital rounds, which are often relegated to hallways today.

"The SVM plays a major role in producing Wisconsin's veterinarians — we've trained more than half of the practitioners in the state," says **Lynn Maki**, associate dean for student academic affairs. "So these improvements are absolutely vital for ensuring Wisconsin has the best of the best caring for companion animals, maintaining dairy herd health, safeguarding public health, and making new scientific discoveries."

As with instruction, the SVM's space constraints also extend into the realm of research. In addition to clinical studies on new treatments and novel surgical techniques, the school conducts more than 75 percent of the infectious disease research on the UW–Madison campus. SVM faculty and staff have made major breakthroughs in the treatment and prevention of everything from Ebola to influenza to Zika. But most of the school's laboratory facilities are aging and cramped.

"Despite our challenges, in the last four years, we have doubled the amount of research dollars we bring in annually," says **Dale Bjorling**, professor of surgical sciences and associate dean for research and graduate training. "This is one indication among many of the school's quality. But we're running out of room to work on some critical, potentially life-saving projects, and this puts future grants and research at risk."

That's why the second floor of the building expansion will include eight new research laboratories for studying naturally occurring diseases in animals and humans. And to help SVM scientists stay a step ahead of the next pandemic, the third floor will triple the amount of space the school has committed to infectious disease studies.

"With all of these advantages taken together, it's clear that our patients and clients will benefit greatly from a successful campaign," says Markel. "But so will our students, who are the future of the field. So will veterinarians and animal lovers all over the state. So will people across Wisconsin and the globe."

## Gaining Support, Making Progress

Given how many lives are touched by the SVM, it's no surprise that the Animals Need Heroes Too campaign has garnered a broad base of support. In

*Continued on page 28*

**WHY GIVE NOW?**

The plan for the new building includes a significant partnership with the state via the capital budget process. To remain the #1 UW–Madison campus priority, we must secure approximately $20 million in gift commitments by the end of 2017.

**LEARN HOW TO HELP**

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**AnimalsNeedHeroesToo.com**

UW VETERINARY CARE

# [ FIRST FLOOR ]

BUILDING EXPANSION


## WE'RE EXCEEDING OUR BOUNDARIES, BUT WITH ROOM TO GROW WE CAN...

- Decrease client wait times
- Improve our Emergency & Critical Care unit
- Enhance large animal isolation
- Offer a covered arena for large animal patients
- Construct a cancer center
- Centralize our diagnostic imaging services
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GRAPHICS: ASHLEY VOSS

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NIK HAWKINS

# Ambassador of Cuteness

## Remembering Barley the teaching dog

*By Nik Hawkins*

Miranda Braithwaite DVMx'18 works with Barley to teach about canine anatomy during a lab session at Grandparents University in July 2014.

The first year of veterinary medical school is filled with new challenges, and among the most difficult are courses in anatomy and neuroscience. Students taking on the rigors of these classes are grateful for any help they can get. And help can come in many shapes and sizes. Fortunately for the last 13 cohorts to pass through the UW School of Veterinary Medicine (SVM), they had it in the form of a big, lovable, yellow Labrador Retriever named **Barley.**

Barley first ventured into a SVM classroom in 2003 when he was five months old, shortly after senior lecturer **Kim Plummer** adopted him from a breeder to be her family's canine companion. She introduced him to the Fundamental Principles of Anatomy course as a teaching assistant of sorts.

"The idea is that there's no better way to learn about anatomy than to examine a living, breathing animal," says Plummer, who has been an instructor at the SVM since 1997. "We would carry what we learned from studying cadavers and see how it applied to a live dog."

Barley was part of a tradition of teaching dogs in the SVM's anatomy course, which began with **Norm Wilsman,** a former faculty member in the Department of Comparative Biosciences who strongly advocated involving live animals. Over the years, the anatomy course has seen teaching dogs like Wilsman's **Sparky; Maddie,** who belonged to former senior lecturer **Jean Bjorenson; Blockhead,** a mix-breed owned by former senior instructional specialist **Kalen Nichols; Lager,** another yellow Lab Plummer would bring into classrooms about a decade before Barley's arrival; and others owned by faculty and staff.

"At first, Barley was a whirling dervish," says Plummer, "but he was always an ambassador of cuteness, and within two or three years, he became an exceptional teaching dog. He was big, but he was fit, lean, and calm, so he was easy to palpate and examine."

Each December in the anatomy course, students gave presentations involving skits and props to teach the rest of the class about the cranial nerves, and they would often enlist a costumed and treat-bribed Barley to help out. Plummer eventually began bringing Barley to the Neuroanatomy and Neurophysiology course, where he would serve as an example for learning normal neurologic function in a dog.

"He would really get into it and have a lot of fun with the students," says Plummer.

### Teaching Even through Distress

Throughout his 13 years of life, Barley encountered and overcame his fair share of health scares. His gastrointestinal tract was always troubled, and at one point he developed a serious condition called gastric dilation volvulus. Essentially, his stomach had expanded and twisted, cutting off the blood supply to his spleen. Fortunately for Barley, the SVM has experts equipped to handle these kinds of situations.

A team of radiologists, anesthesiologists, surgeons, certified veterinary technicians, and students took on

Barley's case. Led by **Robb Hardie,** clinical associate professor of surgical sciences, they removed a portion of the spleen and performed a gastropexy, tacking the stomach to the abdominal wall to keep it from twisting again.

"They saved his life," says Plummer, "and they actually improved his life enormously."

But 18 months later, Barley ended up in surgery again with a colonic torsion, or a twisted colon. **John Stein,** a radiology resident at the time, came to the clinic on a Sunday and worked with **Julie Walker,** a clinical assistant professor in emergency and critical care, and then-resident **Susannah Sample MS'07, DVM'09, PhD'11** to diagnose the issue. **Jonathan McAnulty,** a professor of surgical sciences, led an exploratory surgery, found the torsion, and removed the dead tissue. And Barley recovered from yet another major abdominal surgery.

"I was so impressed by the teamwork in the clinic, by the care and by the expertise," says Plummer. "In the weeks after Barley's surgery, technicians would stop me in the hall and ask about him. It blows you away."

Barley ended up being an exceptional teaching opportunity even in his distress. Colonic torsion is rare in dogs, so the students involved witnessed a procedure that few get to see.

Later on in his life, Barley faced down laryngeal paralysis and soft tissue sarcoma on his paw, but he never stopped teaching. In fact, he also participated in clinical studies to help advance the school's research mission. But as he entered his final years, he developed hind limb degeneration and osteosarcoma, a form of bone cancer.

"He had been through so much, we decided to just let him live out his days in peace," says Plummer. "We fed him steak and scrambled eggs." After a beautiful run through a full life, Barley was euthanized on the last day of May 2016.

## More than Just a Teaching Dog

Early on in his teaching tenure, Barley also began serving as a live-animal question for the anatomy lab practical exam. As students completed the test, he would hang out for hours. "And that's where students really started to get to know and appreciate him," says Plummer. "He helped relieve the stress that comes with exams."

Course evaluations clearly showed how Barley's presence bolstered learning. But students also mentioned the peace of mind he would bring and how he underscored their reason for becoming veterinarians in the first place — to help living creatures.

"It was always great when any of the professors brought in their pets, because they were a calming presence and a soothing balm in the otherwise perpetual anxiety machine that was veterinary school," says **Michael Hanhart DVM'11.** "[Barley] would come around and place his head in your lap, and you would feel that rush of warmth and love that only pets can give."

"The transition through first year is challenging," says Plummer. "Barley was a reminder of why they're here. And he was even occasionally surrogate companion for those who had left a pet at home or were just homesick."

Plummer recalls one particular incident when Barley rescued three students in academic peril. She was driving Barley to his primary care veterinarian, located on Monroe Street a couple of miles from the Veterinary Medicine Building, when three young women flagged her down.

"They were in quite a panic," says Plummer.

Turns out they were veterinary medical students, and they had just missed the bus that would have taken them back to the Veterinary Medicine Building for an exam. Just when they thought they were doomed, they saw a familiar, furry yellow head poking out of the window of Plummer's car, and hope returned as they dashed toward the vehicle. Plummer got them back to the school just in time for the test.

Barley was also a staple in the SVM's outreach efforts, such as Grandparents University, a summer event where grandparents and their grandchildren explore a UW "major" through classroom and hands-on activities, and PEOPLE, a pre-college pipeline for students of color and low-income students. Through programs like these, he helped school-age kids learn all about canine anatomy by letting them interact with the real thing. And under their curious gazes and hands, he would just be himself — a quiet, calm, huggable dog, a licker of fingers and faces, an ambassador of cuteness, one who will be dearly missed and fondly remembered.

## Barley Memorial Scholarship Fund

In his time with the anatomy instructional team at the UW School of Veterinary Medicine, Barley helped teach more than 1,000 students. And now, with a scholarship in his name, he can continue to lend a helping paw.

In honor of Barley and all he contributed to the school, Kim Plummer has established the Barley Memorial Scholarship, which will be awarded each year to a student with financial need who has demonstrated an interest in small animal medicine and who describes the human-animal bond as an integral part of veterinary medicine. To contribute to the scholarship fund, contact Heidi Kramer, director of development, at heidi.kramer@supportuw.org or 608-327-9136.

## New Virus Found During Fish Kill Investigation


ISTOCK PHOTO: FTLAUDGIRL

A new virus has been identified in association with a die-off of largemouth bass in Pine Lake in Wisconsin's Forest County thanks to the efforts of a team of scientists led by **Tony Goldberg,** a faculty trainer with the UW School of Veterinary Medicine (SVM) Comparative Biomedical Sciences graduate program.

The previously unknown virus was isolated at the U.S. Fish and Wildlife Service's La Crosse Fish Health Center from dead fish collected by the Wisconsin Department of Natural Resources (DNR) during an investigation into a May 2015 fish kill in the northeastern Wisconsin lake.

The virus's genome was sequenced at a "virus hunting laboratory" operated by Goldberg, who is a professor in the SVM's Department of Pathobiological Sciences. With the genome in hand, Goldberg and his colleagues scoured genetic databases to see if the virus was known or something novel.

The pathogen, according to Goldberg, was indeed new to science and has been dubbed largemouth bass reovirus. It is a distant relative of other viruses associated with disease in other fish species, making it a key suspect in the Pine Lake fish kill.

"We can't say if it is directly responsible for fish mortality yet," says Goldberg. "But these kinds of viruses are known pathogens of fish, so we would be prudent to be concerned about it."

The new virus was described in August 2016 in the online version of the *Journal of General Virology* in a research report authored by Goldberg and colleagues from the Fish and Wildlife Service and the DNR. Its discovery comes against the backdrop of a deadly fish pathogen, viral hemorrhagic septicemia virus (VHSv), which was found in 2006 in Lake Winnebago. VHSv has since been found in lakes Michigan and Superior and, should it spread, poses a threat to Wisconsin's inland fisheries, including iconic species such as musky, pike, bass, panfish, and trout.

"Largemouth bass reovirus is only the second representative of its group of viruses," notes Goldberg, an epidemiologist and world expert on emerging infectious disease. "This family of viruses are emerging pathogens that infect all sorts of animals. They cause kills in marine and freshwater fisheries, including in wild and farmed populations."

Although the virus was discovered in association with a fish kill, more work is needed to understand if it is the primary culprit, Goldberg says. However, large fish kills involving a single species of fish such as largemouth bass have not been previously recorded at Pine Lake, making the virus a suspicious finding.

Should the virus be directly implicated in fish mortality, it will pose a new challenge in the control of fish disease in Wisconsin. Anglers spend roughly $2.1 billion annually in the state, according to the DNR, and the state has an aquaculture industry with an estimated $21 million annual economic impact. The Great Lakes together have a commercial fishery valued at $23 million annually.

*Terry Devitt*

# From the CBMS Director

## A Brief Annual Report

The Comparative Biomedical Sciences (CBMS) graduate program had a jubilant 2015–16 academic year, and I am pleased to report that 10 doctoral and six master's students finished their exciting thesis research and graduated from the program.

Remarkably, William C. Campbell MS'54 — who received his degree from our program's precursor, the Department of Veterinary Science — was awarded the 2015 Nobel Prize in Physiology or Medicine. Campbell shared the prize with Satoshi Omura for their seminal discovery leading to the development of the drug ivermectin, which dramatically reduced the incidence of parasitic diseases, such as river blindness and lymphatic filariasis, in humans.

Inevitable administrative changes are also coming to the program this year. Kathryn Holtgraver, our student services coordinator, retired on Oct. 3, 2016, after decades of service to UW–Madison. A strong student advocate, Kathy has been instrumental in the smooth running and success of the program. Her contributions to CBMS will be sorely missed, and we wish her the very best in retirement. But I am pleased to welcome her successor, Susan Thideman.

In closing, 12 new students (nine doctoral candidates and three master's degree candidates) have recently joined us, and we are truly excited as we embark upon the 2016–17 academic year.

**M. Suresh**

Professor, Department of Pathobiological Sciences

Director, Comparative Biomedical Sciences graduate program

# Study Finds a Key to Nerve Regeneration


ANDY MANIS

Researchers at the University of Wisconsin–Madison have found a switch that redirects helper cells in the peripheral nervous system into "repair" mode, a form that restores damaged axons.

Axons are long fibers on neurons that transmit nerve impulses. The peripheral nervous system, the signaling network outside the brain and spinal cord, has some ability to regenerate destroyed axons, but the repair is slow and often insufficient.

The new study suggests tactics that might trigger or accelerate this natural regrowth and assist recovery after physical injury, says **John Svaren,** a professor of comparative biosciences at the UW School of Veterinary Medicine and faculty trainer in the Comparative Biomedical Sciences graduate program. The finding may also apply to genetic abnormalities such as Charcot-Marie-Tooth disease or nerve damage from diabetes.

Svaren, senior author of a report published Aug. 30 in *The Journal of Neuroscience*, studied how Schwann cells, which hug axons in the peripheral nervous system, transform themselves to play a much more active and "intelligent" role after injury.

Schwann cells create the insulating myelin sheath that speeds transmission of nerve impulses. In the repair mode, Schwann cells form a fix-up crew that adds house cleaning and stimulation of nerve regrowth to the usual insulating job.

Svaren and his graduate student, Joseph Ma, compared the activation of genes in Schwann cells in mice with intact or cut axons. "We saw a set of latent genes becoming active, but only after injury," says Svaren, "and these started a program that places the Schwann cells in a repair mode where they perform several jobs that the axon needs to regrow."

In the repair mode, but not in the normal one, Schwann cells start cleaning house, helping to dissolve myelin, which is essential for proper functioning but ironically deters regeneration after injury. "If you invite Schwann cells to a party," says Svaren, "they will clean up the bottles and wash your dishes before they leave the house."

This cleanup must happen within days of the injury, says Svaren, who directs the cellular and molecular neuroscience core at the Waisman Center on the UW–Madison campus.

The Schwann cells also secrete signals that summon blood cells to aid the cleanup, and they map out a pathway for the axon to regrow. Finally, they return to the insulator role to grow a replacement myelin sheath on the regenerated axon.

Unexpectedly, the Schwann's transition into the repair form did not entail a reversion to a more primitive form, but rather was based on a change in the regulation of its genes. "Almost every other nervous-system injury response, especially in the brain, is thought to require stem cells to repopulate the cells, but there are no stem cells here," Svaren says. "The Schwann cells are reprogramming themselves to set up the injury-repair program. We are starting to see them as active players with dual roles in protecting and regenerating the axon, and we are exploring which factors determine the initiation and efficacy of the injury program."

After the human genome was deciphered, epigenetics — the study of gene regulation — has moved to the forefront with the realization that genes don't matter much until they are switched on, and that genetic switches are the fundamental reason why a skin cell doesn't look like a nerve cell and a nerve cell functions differently than a white blood cell.

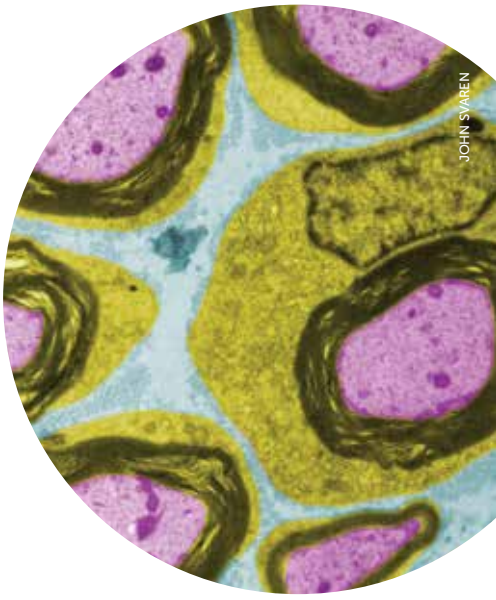
In epigenetics, as elsewhere in biology, processes are often regulated through a balance between "stop" and "go" signals. In the Schwann cell transition, Svaren and Ma identified a system called PRC2 that usually silences the repair program. "This pathway amounts to an on-off switch that is normally off," Svaren says, "and we want to know how to turn it on to initiate the repair process."

The nature of the top-level gene-silencing system suggested drugs that might remove the silencing mark from the genes in question, and Svaren says he's identified an enzyme that may "remove the brakes" and deliberately activate the repair program when needed in response to injury.

Even if the drug tests are promising, years of experiments will be necessary before the system can be tested in people. Furthermore, as Svaren acknowledges, "many factors determine how well an axon can regenerate. I am not saying this single pathway could lead to a cure-all, but we do hope it is an important factor."

Svaren says it's not clear how the current finding on peripheral nerves relates to damage to the brain and spinal cord, where a different type of cell cares for neurons. There are some similarities, however. In multiple sclerosis, for example, cleanup must precede the replacement of damaged myelin.

*David Tenenbaum*


JOHN SVAREN


WILL HUGHES

Myron Kebus MS'90, DVM'92 displays a 15-inch smallmouth bass he caught and released on Wisconsin's Rock Lake in August 2016.

### More Fish Tales

You can read more online about how fish health is incorporated into the curriculum at the UW School of Veterinary Medicine and how many alumni, including **Tracie Baker DVM'08; Bridget Baker MS'10, DVM'11; Lori Gustafson DVM'92;** and **Nora Hickey DVM'16** are pursuing careers in the field.

Full story at **go.wisc.edu/svm-fish-health**.

# Fish Tales

The term "fish tale" often refers to an improbable story or a great big lie. But this is the true story of how a school without a formal fish health program has spawned many careers in the field while helping to safeguard the aquaculture industry in Wisconsin and beyond.

### Mike's Fish Tale

In 1971, when **Mike Collins** reached his final year of veterinary medical school at the University of Minnesota, he was having trouble deciding where to focus his career. He had considered clinical work with virtually every category of animal possible and even a future in laboratory research. But nothing truly gripped him as a passion. At least, not until he learned that fish could feed the world.

Collins started reading about aquaculture — the farming of aquatic animals and plants for food — and how fish and other water-dwelling creatures are an important source of food protein across the globe. "I decided I wanted to learn about fish diseases and meld that with veterinary medicine," says Collins.

In other words, he wanted to learn how to protect a major portion of the world's food supply. His burgeoning interest led him to a PhD in microbiology followed by professorships at Colorado State University and, when it opened in 1983, the UW School of Veterinary Medicine (SVM), where he still makes his academic home today in the Department of Pathobiological Sciences. But in a publish-or-perish world, he was forced to branch out into other areas — where grant funding was easier to come by — and eventually retired his passion for fish health. That is, until **Myron Kebus MS'90, DVM'92** knocked on his office door.

# A Message to DVM Alumni

### What's New?

Welcome to the new *On Call*! We're excited about this update to our school newsletter, which allows us to better tell the stories of the great work that our faculty, staff, students, and alumni do and to describe how friends of the school help make much of this work possible.

What else is new? We will be opening up our new Renk Learning Center at the end of the year. We can't wait to have our students, faculty, and staff move in and take advantage of new opportunities to teach, learn, and support individual wellness.

And in really big news, as you've read elsewhere in this issue, we are launching our campaign to build a significant new expansion to the school. Every day we creatively tackle the challenges of teaching, discovering, and providing clinical care in a space that is too small and not up to date. Creativity (and taking over janitor closets!) can only get you so far, and we are very excited about what the addition will allow us to provide and achieve in the school's next 30 years.

The success of the campaign will depend on the support of many friends and an investment from the state. You can help by letting people know about the new building campaign and how important it is to the future of the state's only school of veterinary medicine. Be on the lookout for more information, or contact me at 608-265-9692 or kristi.thorson@wisc.edu to find out how you can help.

What isn't new? Our commitment to delivering the very best education to our students and trainees, to providing exceptional care to our patients, and to making breakthrough discoveries that benefit both animal and human health. In its brief 30-year history, the UW School of Veterinary Medicine quickly became a leader, and with your support, we can continue our tradition of excellence.

Kristi V. Thorson

**Kristi V. Thorson**
Associate Dean for Advancement and Administration

## Myron's Fish Tale

"I was always gonzo about fish when I was a kid," says Kebus. "I read about fish, I studied fish, I listened to stories about fish from my father, I went fishing. But I also wanted to be a veterinarian."

When Kebus was growing up in the 1970s, the world seemed to be terribly burdened by food shortages. So the idea of farming fish for food — something he learned about from his father — struck him as a novel solution. Much like Collins, Kebus decided to blend his passions.

Following undergraduate work in England, he came to the SVM to pursue a DVM as well as a master's degree with the UW–Madison Department of Veterinary Science, the precursor to the SVM's Comparative Biomedical Sciences graduate program. As an outgrowth of his work as a research assistant with the UW Aquaculture Program, he became interested in farming perch and rainbow trout. His search for lab space to study the topic and, more importantly, for a mentor, brought him to Collins' office door. Kebus' arrival was Collins' first opportunity to mentor someone with a similar interest, and his passion for fish health came out of retirement.

## Mike and Myron Reel in a Whopper

The mentor-mentee relationship that began on that day in 1988 has since evolved into a long-term partnership, one that has made vital contributions to both the SVM and the state of Wisconsin.

After completing his degrees, Kebus started a business called Wisconsin Aquatic Veterinary Service and began helping fish farmers make sure their livestock was healthy and could pass export approval inspections. This experience led him to a position with the Wisconsin Department of Agriculture, Trade, and Consumer Protection when, in 1999, the agency began overseeing fish health throughout the state and hired Kebus to establish health standards and a certification process.

"The idea was to train private practitioners — other veterinarians — to do the work I was already doing," says Kebus, who remains the state's chief fish veterinarian. Today, Kebus says, Wisconsin is one of only a few states that have "deputized" veterinarians for this purpose.

Kebus began instructing veterinarians throughout the state on the basics of aquaculture and water quality; the types of farm-raised species and what they eat; the risks associated with fish farming; and the "nitty gritty" of sampling fish for disease, interpreting results, and filling out and submitting forms. Under his tutelage, veterinarians became certified in fish health assessment techniques — how to implement measures to prevent the spread of disease and how to certify that fish have a clean bill of health and are safe for export.

Given the extent of interest in the certificate, Kebus wondered if there were more efficient ways to deliver the course. He found his answer when a colleague showed him an online training module designed to certify veterinarians to inspect cattle and other ruminants for Johne's disease, a chronic and sometimes deadly bacterial infection. The module creator? Mike Collins.


United once again by mutual interest, Collins and Kebus, along with a handful of other fish experts, developed an online continuing education course on fish health that veterinarians can take to become certified to inspect and approve fish farms. "The certificate is recognized nationwide as proof that the course taker knows about fish health," says Kebus.

The United States Department of Agriculture (USDA) has since followed in Wisconsin's footsteps and now accredits veterinarians through three online modules. And Kebus, again partnering with Collins and other fish experts, has created a separate course geared toward fish farmers, researchers, and aquaculture students. "It covers the same topics as the course for DVMs, but it's reoriented to the other side of the conversation," says Kebus.

Like the size of the fish in their eponymous tales, the impact of the program continues to grow. As of February 2016, the modules, which are offered through the SVM's Continuing Education Office, have trained 245 veterinarians and 530 fish producers worldwide.

*Nik Hawkins*

*Above:* Bridget Baker MS'10, DVM'11 holds a female lake trout while aboard the Hack Noyes, a Wisconsin Department of Natural Resources boat, on Lake Superior. The fish was captured and released after she provided eggs for raising lake trout at the Les Voigt State Hatchery in Bayfield, Wis. More about Baker and her fellow alumni can be found at **go.wisc.edu/svm-fish-health**.

## In Memoriam

**Mark W. Jackson DVM'87** died peacefully on Saturday, Aug. 20, 2016. He was a practicing clinician who specialized in small animal internal medicine and was previously a faculty member at the University of Bristol, North Carolina State University, and the University of Glasgow.

# Donor Honor Roll

## We're Grateful for Donations Made Between July 1, 2015 and June 30, 2016

In this issue of *On Call*, we would like to thank our individual and corporate donors by listing those who made gifts or pledges of $100 or more between July 1, 2015 and June 30, 2016. Cumulative donors, alumni of the UW School of Veterinary Medicine and the Veterinary Sciences and Comparative Biomedical Sciences graduate programs, and veterinary medical clinics that participated in the Companion Animal Fund have been thanked separately.

We are deeply grateful to all who have contributed. Your gifts make an impact on the lives of animals and humans. Whether you have chosen to direct your gift toward studies to improve animal health, scholarships for students, facility upgrades, or an unrestricted fund that helps us meet emerging needs, your gifts go a long way. Your generosity makes the difference and allows us to maintain the school's reputation for excellence.

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We would like to thank our alumni who have donated $100 or more between July 1, 2015 and June 30, 2016, whether for the benefit of animal health or aspiring veterinarians, or simply to maintain the excellence of their school.


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"All involved in my fur babies' care were great! I felt they were very thorough. They treated my babies like they would probably treat their own!"

# Easterday Earns UW CALS Honorary Recognition Award


NIK HAWKINS

Bernard Easterday

**Bernard Easterday MS'58, PhD'61,** dean emeritus of the UW School of Veterinary Medicine (SVM), has received the Honorary Recognition Award from the University of Wisconsin–Madison College of Agricultural and Life Sciences (CALS).

Established in 1909, the award acknowledges individuals who have made significant contributions to their professions, their communities, and the university. It is one of the highest distinctions bestowed by the college.

Easterday earned his master's and PhD degrees from the Department of Veterinary Science, the precursor to the SVM's Comparative Biomedical Sciences graduate program. In 1961, he became a faculty member in the department where his research focused on viral diseases. He also discovered a passion for teaching and outreach.

While at UW–Madison, Easterday conducted and collaborated on multiple studies involving the interspecies transmission of viruses, which included uncovering the first conclusive evidence of swine influenza virus transmission from swine to humans. In 1978, he was appointed to lead the planning and development of the SVM, which was officially established in 1979.

The first class of veterinary medical students was admitted upon completion of the construction of the school in 1983. Easterday, as emeritus dean and professor, continues to serve as an advisor and mentor to veterinary medical students.

## Breaking Ground from page 12

fact, the school has already raised more than $11 million of a $40 million goal. Campaign leaders are hoping for a $75 million commitment from the state to round out the projected $115 million cost of the project.

A good portion of the funds already raised came from lifelong animal lovers and UW–Madison alums **Karen Walsh** and **Jim Berbee.** In summer 2016, they were inspired to offer a $3 million matching gift toward the building campaign, over $1 million of which has already been committed.

"When you learn about advances the SVM has made in cancer treatment, orthopedics, surgery, and so many other areas, you understand why people flock to bring their animals there for expert care," says Walsh, who is co-chair of the Animals Need Heroes Too campaign. "And the school's research leadership is astounding. The future of human medicine is so connected to animal medicine, and here at UW–Madison we have this amazing place where it's all happening — for the benefit of everyone."

The leadership of the Wisconsin Veterinary Medical Association (WVMA), a statewide organization that advocates and promotes veterinary medicine, has also lent its support to the campaign. According to WVMA Past President **John Been DVM'88,** who is a practicing large animal veterinarian, an expansion will boost the school's already strong contributions to the state as a top-notch and readily available referral resource for private practitioners, an invaluable specialty and emergency care center for animal owners, and a vital collaborator in finding solutions to public health concerns.

"Additional facilities for state-of-the-art research, instructional and administrative space, and of course, much-needed clinical space for the animal hospital, will catapult an already world-class veterinary medical school and teaching hospital into new levels of excellence," says Been.

**Regina Millner,** president of the University of Wisconsin System Board of Regents, was first introduced to the SVM's wide range of impactful work when she brought her grandchildren to the school for a campus program called Grandparents University. She has been a supporter ever since. To her, the SVM is critical to UW–Madison's tradition of solving public health issues through interdisciplinary collaborations involving the School of Medicine and Public Health, College of Engineering, and College of Agricultural and Life Sciences.

"Just take a look at what the School of Veterinary Medicine is doing at the important interface of animal and human diseases, finding ways to fight viruses, like Zika," says Millner. "And through its work with large animals, the school also supports the dairy industry and agribusiness, which are critically important to the economy of the state. And they're doing this all in an aging facility.

"It's clear an upgrade is overdue, and this is the perfect time for clients who have benefitted from the school's clinical services, for alumni who have benefitted from an excellent education, for corporations that have benefitted from the school's cutting-edge research, to show their support."

## Large Animal Hospital Renamed

In recognition of his generous gifts to the UW School of Veterinary Medicine in support of equine health and student scholarships, the UW Veterinary Care large animal hospital was recently renamed for long-time client and donor **Morrie Waud.** The new sign at the clinic entrance was unveiled during a special ceremony on Thursday, Sept. 22, 2016. Speakers included Mike Knetter, CEO of the Wisconsin Foundation and Alumni Association (WFAA); Sarah Mangelsdorf, University of Wisconsin–Madison provost; and **Mark D. Markel,** SVM dean. A short video of the event can be viewed at **go.wisc.edu/waud-ceremony**. Waud (second from right) is pictured here beneath the new sign with three individuals who he credits for his early involvement with the school. They are (from left): Russ Austin, senior director of development at the WFAA; **Daryl Buss MS'74, PhD'75,** SVM dean emeritus; and **Ryland Edwards PhD'04,** a former clinical assistant professor of large animal surgery at the SVM.

NIK HAWKINS (2)

## Wisconsin Veterinary Medical Association Honors McGuirk, SVM


NIK HAWKINS

Sheila McGuirk and Dean Mark D. Markel accept awards from the Wisconsin Veterinary Medical Association at the organization's annual meeting in October 2016.

The UW School of Veterinary Medicine (SVM) and one of its emerita faculty have received notable honors from the Wisconsin Veterinary Medical Association (WVMA).

**Sheila McGuirk,** professor emerita of large animal internal medicine, has been named the 2016 Veterinarian of the Year. The award recognizes "a WVMA member who has made major contributions toward the advancement of the veterinary medical profession." She is the only veterinarian in the history of the WVMA to receive the award twice; she was previously recognized in 2000.

"We feel this is a tribute to the impact Dr. McGuirk has had on the state of Wisconsin, veterinary medical students, the SVM, dairy farmers, and veterinarians," says WVMA Executive Director Kim Brown Pokorny. "She is a role model, a tremendous educator, and a servant leader."

McGuirk, who retired in February 2016 after 33 years on the SVM faculty, is a key reason for the school's international reputation for expertise in dairy cattle health and well-being. Throughout her career, her teaching and research focused on improving animal welfare and productivity on dairy farms by incorporating strategies for individual animal care into herd management.

"Dr. McGuirk was one of the very few internists working in a veterinary medical hospital who realized that she could use her skills not only to cure an individual patient but to examine the herd for risk factors so that future cases could be prevented," says **Nigel Cook,** chair of the SVM's Department of Medical Sciences. "And while she is truly the queen of bovine internal medicine, she is also a highly skilled equine clinician."

During her time at the SVM, McGuirk has treated everything from grand champion cattle to prize-winning race horses. She also established the current biosecurity check-in process for the World Dairy Expo in Madison, Wis., in which dozens of veterinary medical student volunteers inspect thousands of cows in the days leading up to the event to prevent the spread of disease. This and many other contributions to the state's dairy industry earned her the World Dairy Expo Industry Person of the Year award in 2012.

McGuirk, who has trained every veterinarian who has graduated from the SVM, has had a lasting impact on the school's students and curriculum. For example, she was instrumental in the creation of an ambulatory clinical rotation that exposes fourth-year students to practical, on-farm experience. She also developed the use of Objective Structured Clinical Examination techniques in which students interact with live large animals and practicing and retired veterinarians while being tested on core veterinary medical skills and knowledge at the end of their first year.

In addition to honoring McGuirk, the WVMA named the UW School of Veterinary Medicine the 2016 Friend of Veterinary Medicine, an award that recognizes a non-veterinarian (and in some cases organizations) demonstrating "outstanding support for veterinary medicine and/or organized veterinary medicine" in Wisconsin.

*Nik Hawkins*

NIK HAWKINS (2)

# 7,700 Miles

## The Journey of Maxi, Mike, and Dao

How far would you travel for a chance to give your sick dog a few more healthy years?

For **Mike and Dao Vassilieff,** the answer is 7,700 miles, or just under a third of the way around the globe. Their desire to spend as much quality time as possible with their French Bulldog, **Maxi,** brought them from Hong Kong to Madison, Wis. — and they would have gone farther if they had to.

It all began in early summer 2016, when Maxi began to show troubling signs. She refused food and was growing progressively thinner and more lethargic. At night, the Vassilieffs could hear her growl and whimper in pain.

After bringing Maxi to a primary care veterinarian, an ultrasound specialist, and a neurologist in Hong Kong, tests confirmed that she had a tumor on her pituitary gland called a macroadenoma. Although benign, it would continue to grow and cause complications. Without treatment, Maxi had only a couple of months left to live.

For Dao, who is unable to have children, Maxi is her baby, and hearing the diagnosis was like dealing with a death sentence for her own daughter. "Maxi's part of the family," she says. "She has so much meaning to us."

"We said 'no, no — it's too soon for us,'" says Mike. "We wanted to have more time with her."

So they looked into other options. With no veterinary medical radiation oncologists in or near Hong Kong, the Vassilieffs were forced to look overseas, and Maxi's neurologist suggested they see what was available in the United States. After contacting half a dozen clinics, they settled on UW Veterinary Care's Radiation Oncology Service for its pricing and the comfort they felt in communicating with resident **MacKenzie Pellin DVM'11.**

Fortunately, prednisone treatments reduced the swelling caused by Maxi's tumor, so her condition improved enough that she was fit for the 15-hour flight. Less than two weeks later, following a mad dash of travel-related paperwork and a frantic search for lodging, the Vassilieffs set out for America with renewed hope.

"This kind of tumor is very responsive to radiation therapy," says Pellin. "The medical literature indicates prolonged survival, about two to three years in over 50 percent of cases."

Maxi received radiation therapy five days a week for four weeks. Dao, who had quit her job as a veterinary technician in Hong Kong, stayed in a rented house in Madison for the entire month; and Mike, a commercial airline pilot, visited whenever his flight schedule allowed.

Midway through the treatments, Maxi already began to show signs of improvement. "When we arrived, she was half dead," says Dao. "Now she's eating, and her back legs are getting better. The sun has shined for me again."

As of September, the Vassilieffs were planning to fulfill their dream of taking Maxi to see Mike's native Australia. The animal quarantine process for traveling Down Under requires a good amount of paperwork, and Pellin was more than happy to assist them with it.

*Nik Hawkins*

# ANIMALS NEED HEROES TOO

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# A Holiday Card that Helps Advance Animal Health

The holiday season is here, and the UW School of Veterinary Medicine (SVM) has the perfect gift for the animal lovers on your list — one that truly helps those special creatures and companions in your lives.

For a suggested $10 donation per card, the SVM will send a holiday card to the recipient of your choice. The beautiful, full-color card will include a greeting stating that a donation was made to the school in the recipient's name and that proceeds will support projects that advance animal health and well-being.

Each year, the SVM is delighted to present original artwork for its holiday card fundraiser. This year, the school is offering two selections, "Holiday Dreams" and "My Ribbon," featuring the work of Wisconsin artist Robin Raab. Both cards make thoughtful holiday gifts for veterinarians, friends, family, or even people's pets.

Order forms for holiday cards can be downloaded at **vetmed.wisc.edu/holidaycard**, or you may contact Laura Olson at 608-890-0203 to place an order by phone.

## Meet the Artist

Robin Raab is a self-taught artist who currently resides in Delavan, Wis. For more than 25 years, she has specialized in traditional portraiture done in acrylics and pastels with a particular interest in dogs, horses, and wildlife.