

# On Call



School of  
Veterinary Medicine  
UNIVERSITY OF WISCONSIN-MADISON

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

Advancing animal and human health with science and compassion

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## Caring for Pets and People through Housing Hardship



BRUCE RICHTER

Veterinary medical students Melissa Hayes (right) and Lindsey Meyer (far right) perform a check-up on Tina as her owners, Clarence and Kelly, look on at a clinic run by Wisconsin Companion Animal Resources, Education, and Social Services (WisCARES). The clinic provides free care to those who are homeless or at risk of homelessness.

There is a light drizzle falling on a cool autumn morning when the clinic on Madison's south side unlocks its front door.

"I'm hoping the rain didn't deter anyone," says Laura Soto, frowning. The third-year veterinary medical student checks the clipboard clutched to her chest. They're expecting several patients this morning, including a litter of puppies.

Typically, people come early to this clinic, waiting outside to receive care and supplies for their cats and dogs in need. Today, things are off to a slower start. Inside, though, the small clinic is

buzzing with veterinary medical and social work students from the University of Wisconsin-Madison, eager to provide for the pets and their people who will soon come through the door.

WisCARES—Wisconsin Companion Animal Resources, Education, and Social Services—provides basic veterinary medical care for pets in Dane County whose owners are experiencing homelessness or housing instability. But it also does much more.

"It's not just about the medical care for pets. It's also a way to get people access to the other resources they need," says William Gilles, the program director. "A lot of the

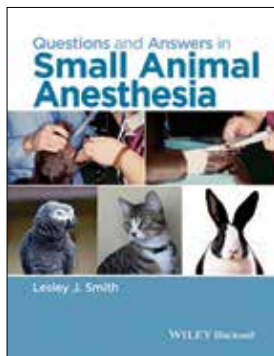
people accessing our services are not people who the social workers involved in the program are familiar with, so we're starting to identify a new population of people that just isn't hooked up to the services that are available."

Services like housing support and advocacy, food pantries, human health care, and more.

Now in its second year, WisCARES has grown significantly since its origins as a call-in veterinary hotline that began with Gilles, a veterinarian and a 2013 graduate of the UW School of Veterinary Medicine (SVM). He helped start the program while

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## SVM Faculty Books Hit Shelves in Late 2015

Three academic volumes authored or edited by faculty from the UW School of Veterinary Medicine (SVM) saw print in December 2015.

Susan Schaefer, clinical associate professor of orthopedic surgery, co-authored the fifth edition of *Brinker, Piermattei, and Flo's Handbook of Small Animal Orthopedics and Fracture Repair* (Elsevier 2015), a comprehensive guide to the causes, diagnosis, and treatment of conditions that affect the small animal musculoskeletal system. Fresh content in the new edition includes information about minimally invasive surgery, updates on new fixation technologies, and advancements in diagnostic imaging techniques.

In the January 2016 issue of *Veterinary Clinics of North America: Exotic Animal Practice*, editors Kurt Sladky and Christoph Mans—SVM faculty members specializing in zoological and exotic animal medicine—take on the topic of soft tissue surgery. The volume includes 12 articles on a broad selection of topics specific to soft tissue surgery in amphibians, reptiles, fish, birds, rabbits, rodents, ferrets, hedgehogs, sugar gliders, and other small mammals. Contributing authors from the SVM include Georgia Bosscher, Casey Budgeon, Sara Colopy, Rebecca Csomos, Robert Hardie, Kevin Kroner, and Megan Mickelson.

In *Questions and Answers in Small Animal Anesthesia* (Wiley 2015), Lesley Smith, clinical professor of anesthesiology, provides a practical guide to a wide range of questions commonly faced in the field. The book includes 44 chapters on numerous topics, including patient evaluation and monitoring, troubleshooting common problems, managing disease states, and more. Several chapters are authored by Smith and other SVM faculty and staff, including Rebecca Johnson, Carrie Schroeder, Jason Soukup, and Katrina Lafferty.

Nik Hawkins

## A MESSAGE FROM THE DEAN

### Helping Our Many Communities

Welcome to the spring 2016 issue of *On Call*. This installment highlights many of the contributions the UW School of Veterinary Medicine (SVM) is making locally, regionally, and internationally.

First, however, I'm happy to announce that the SVM recently received full, seven-year accreditation from the American Veterinary Medical Association's Council on Education. The reaccreditation process is arduous, but it's an important validation of the school's success.

I'd like to recognize William C. Campbell, whose co-discovery of the anti-parasitic agent avermectin has improved the lives of tens of millions of people and animals in impoverished corners of the world. Campbell and his collaborator, Satoshi Omura, were named co-recipients of the 2015 Nobel Prize in Physiology or Medicine. Campbell received his master's and doctoral degrees from the Department of Veterinary Science at UW–Madison, the predecessor to the SVM's Comparative Biomedical Sciences (CBMS) Graduate Program. Campbell's accomplishment highlights the enduring strength of the CBMS program, which was once again



BRUCE RICHTER

Mark D. Markel

ranked among the top 10 in the nation by Academic Analytics. I want to congratulate our faculty, staff, and students for the continued recognition of the excellence of this program.

The school was also recently highlighted for its WisCARES program. Wisconsin Companion Animal Resources, Education, and Social Services provides basic veterinary medical care to pets in Dane County, Wis., whose owners are experiencing homelessness or housing instability. In addition to veterinary medical care, the program, led by William Gilles (Class of 2013), enables people to gain access to other services, such as housing support and advocacy, food pantries, human healthcare, and more. I want to thank all of

our faculty, staff, students, and volunteers who assist in this very important endeavor.

Last, in fall, the SVM's Tony Goldberg and Kathy Toohey-Kurth (also virology section head at the Wisconsin Veterinary Diagnostic Laboratory) published their discovery that a deadly virus—viral hemorrhagic septicemia virus, or VHSv—was still circulating in Wisconsin's Lake Winnebago. VHSv was first detected among freshwater fish in the U.S. in 2005 and was responsible for massive fish die-offs in the Great Lakes and connected waterways.

Their investigations, using a new, non-lethal diagnostic test co-developed by Toohey-Kurth, have demonstrated that some fish actually survived VHSv infection and now have the potential to serve as sources of future infection. The new test also will help the Department of Natural Resources monitor VHSv transmission and better manage the disease in our freshwater lakes.

Each of the accomplishments highlighted above demonstrates the breadth and depth of the school's accomplishments and, more importantly, its impact at home and throughout the world.

## UW School of Veterinary Medicine Receives Full, Seven-Year Accreditation from AVMA

The UW School of Veterinary Medicine (SVM) has once again been granted accredited status by the American Veterinary Medical Association's Council on Education (COE) for a period of seven years, the maximum time frame that can be assigned.

The SVM received its recent reaccreditation after undergoing a comprehensive self-study and hosting a site visit team at its facilities in February 2015. The team presented their findings and recommendations to the COE, which granted the accreditation renewal in September 2015.

"This is another indication of the excellence our faculty and staff have achieved in educating future veterinarians," says Dean Mark D. Markel. "There's no doubt that our graduates leave here fully prepared to enter and succeed in the profession."

The Council for Higher Education Accreditation and the U.S. Secretary of Education both recognize the COE as the accrediting body for schools and programs that offer the professional Doctor of Veterinary Medicine degree or its equivalent. To ensure that veterinary medical students receive

an education that prepares them for entry-level positions in the profession, the COE reviews how schools and colleges meet standards in 11 key areas, including organization, finances, physical facilities and equipment, clinical resources, information resources, students, admission, faculty, curriculum, research programs, and outcomes assessment.

Accredited status is granted to schools that have no deficiencies. The SVM has been reaccredited every seven years since its founding in 1983.

Nik Hawkins

## Course Immerses Students in Proper Large Animal Rescue Techniques

Large animals like horses and cows sometimes end up in dire emergencies, from fires to floods to highway accidents. The extreme stress of these situations can make animals unpredictable and dangerous—to themselves and to those around them. Specialized training is vital for ensuring that animals, and the people helping them, remain safe.

For students at the UW School of Veterinary Medicine (SVM), this kind of training is available through a course called Large Animal Technical Rescue and Emergency. The popular class, which will be offered for the third time in August 2016, is one of the SVM's week-long "selectives" courses, which are held right before the fall semester and right after the spring semester. The focused session expands upon material delivered in the school's Equine Surgery elective, providing greater depth for students highly interested in the topic.

"My goal is to have all veterinary medical students interested in large animal practice take the course," says Sabrina Brounts, clinical associate professor of large animal surgery. "Eventually, I'd like to offer the course to first responders as well. People don't always know what to do in these situations, and they get themselves in trouble. This training could really improve the safety of emergency services."

To provide students with instruction in the latest in large animal rescue, Brounts partners with Howard Ketover, a veterinarian with Irongate Equine Clinic and founder of Wisconsin Large Animal Emergency Rescue (WLAER). The course covers the proper way to approach large animals, the locations of safe zones, and how to create a team approach to animal response utilizing all the potential participants at emergency scenes. It also offers lectures and hands-on instruction in a variety of skills and scenarios, such



Students from the UW School of Veterinary Medicine demonstrate proper rescue techniques using an equine mannequin at Wisconsin Farm Technology Days in Sun Prairie, Wis., in late August 2015. The demonstration was part of a focused, one-week course called Large Animal Technical Rescue and Emergency.

as freeing horses from ditches, fences, stalls, deep mud, and tipped trailers using 800-pound horse mannequins.

According to Ketover, many techniques traditionally thought of as being useful specifically for large animal emergency response also have a place in daily large animal practice management. "From dealing with a horse cast (stuck) in a stall to cattle that need to be transported to the hospital pen, the principles learned in the class will stay with students throughout their careers," he says.

As an equine veterinarian, Ketover has witnessed the aftermath of many emergency situations. Recognizing that many veterinarians and first responders lack the experience and equipment to handle large animal emergencies effectively, he co-founded WLAER, a non-profit

organization that educates law enforcement officers, firefighters, animal control officers, veterinarians, veterinary technicians, and others in proper techniques to maximize safety and improve outcomes for the animals involved.

"Our goal is to make sure that everyone—animals and their rescuers—come out of these situations as healthy as possible," says Ketover.

Katie Weber, now a third-year veterinary medical student, took the course in 2015 because she felt it would better prepare her for practicing equine medicine.

"I've heard from numerous equine clinicians that, over their careers, they have been in situations where they wished they had had training in technical rescue and emergency response, so I wanted to take advantage of the opportunity," says Weber. "The

large animal rescue course taught me emergency protocols, disaster preparedness, and hands-on techniques for assisting animals in a variety of situations."

Weber also says the course gives students the confidence to execute life-saving techniques in real life and helps them become comfortable working with and leading others involved in rescue efforts.

*Nik Hawkins*

### PET TIPS

#### Equine Sun Block

You're not the only one who burns in the sun! Your horse, especially if she has pink skin around her nose, eyes, or belly, could be vulnerable. Try simple solutions like making sure your horse has access to shade, and don't be afraid to let her roll in the dust, since that's her natural sun block.

## SVM Partnership with Community Saves Baby Crane

A young Wisconsin sandhill crane worked its way back to full health and flew south for the winter late last year thanks to a partnership between the UW School of Veterinary Medicine (SVM), Dane County Humane Society's Four Lakes Wildlife Center (FLWC), and a local wildlife rehabilitator.

In late July 2015, a baby crane was seen struggling to walk in Cherokee Marsh on the north side of Madison, Wis. A concerned observer brought the ailing bird to FLWC where wildlife veterinarians and technicians gave her a thorough examination, including blood work and radiographs (X-rays).

"We quickly discovered this baby crane had high levels of lead in her bloodstream as well as what looked like a metal washer stuck in her stomach," says Brooke Lewis, a certified veterinary technician who serves as FLWC's wildlife rehabilitation supervisor.

The radiographs made it clear that the metal ring was too large to pass naturally, so Lewis and her colleagues referred the case to the UW Veterinary Care (UWVC) Special Species Health Service at the SVM. Dr. Christoph Mans, a clinical assistant professor who is a board-certified specialist in zoological and exotic animal medicine, recommended an advanced procedure for removing the piece of metal.

The method involves inserting an endoscope—a length of tube with a light and camera affixed to its end—down the bird's throat and into its digestive tract. The scope and the image it transmits to a large screen are used to guide veterinarians and technicians as they use a long wire grasper to extract foreign matter.

"The endoscopic procedure is non-invasive and faster and safer than surgery, so it's the treatment of choice for removal of foreign bodies from the stomach of most birds," says Mans. "Minimizing



*B.C. (which stands for baby crane) awakens following a procedure at UW Veterinary Care.*

stress and pain for our patients while under our care is very important to us."

In addition to advanced technology, the procedure required well-trained personnel. For the extraction, Mans teamed up with Dr. Lily Parkinson, a zoological medicine resident, and certified veterinary technician Terri Gregson. Dr. Tatiana Ferreira, a board-certified specialist in anesthesiology and pain management, and certified veterinary technician Nicole Sinclair administered general anesthesia.

The metal disk, which turned out to be a grommet, proved tricky to grasp, but the procedure ended in success. The crane colt returned to FLWC for a short recovery before being transferred to the care of licensed wildlife rehabilitator Patrick Comfert. At his property in rural Rock County, Comfert helped the baby crane (or B.C., as she came to be called) associate with other cranes under his care.

"One crane in particular, named Jr., B.C. used as a surrogate mother," says Comfert, who co-founded FLWC in 2002.

With an adult crane to show her the ropes, B.C.'s recovery progressed well, Comfert says, and in



*From left: Certified veterinary technician Terri Gregson, zoological medicine resident Lily Parkinson, and Christoph Mans, a clinical assistant professor of zoological medicine, use an endoscope and a long wire grasper to remove a metal grommet from B.C.'s digestive tract.*

early fall, she began taking short flights during the day. As the season went on, she started foraging with local wild cranes and expanding her exploratory circle in preparation for migration. She also became less comfortable with human contact, a sure sign she was ready to re-enter the wild.

"She's completely flighted now, so she can properly withstand wind and weather conditions," says Comfert. "And she's completely recovered from her issue. The last lead test we did showed very low levels."

In late November 2015, Comfert noticed B.C. and Jr. had stopped returning to his property at night. For the ultimate journey south, he assumes the young but newly molted sandhill and her

"mother" joined up with either a mated pair of cranes that had spent the summer near his property or a separate local flock.

The partnership between the SVM and FLWC has been a lifesaver for numerous animals like B.C., but it provides many other benefits for all involved. For example, in addition to taking referral cases, faculty, residents, and students from the UWVC Special Species Health Service volunteer several hours every week at FLWC, providing veterinary medical care for sick or injured wildlife.

"This close partnership with FLWC expands the variety of animal species and diseases that our students and residents learn from while increasing the diagnostic and therapeutic options for wildlife patients," says Mans. "In addition, we perform clinical research studies in collaboration with FLWC to add to our knowledge on how to provide the best possible care to wildlife patients at rehabilitation centers."

In the past year, SVM veterinarians have lent their expertise to eagle and swan lead poisoning cases, performed surgical fracture repairs on raptors, used laparoscopy to examine internal organs in birds and reptiles, fixed numerous shell fractures in turtles, conducted several emergency surgical procedures, and provided frequent consultations for cases involving a wide variety of native Wisconsin wildlife. For these efforts, Dane County Humane Society recently honored the Special Species Health Service with the Volunteer Veterinary Service of the Year Award.

"They have allowed us to provide a higher level of patient care for all medical patients, including introducing us to new procedures, tests, and treatments that further elevate the care our staff can provide," says Lewis.

*Nik Hawkins*

More photos at [go.wisc.edu/baby-crane-story](http://go.wisc.edu/baby-crane-story).

## Kawaoka Wins UNESCO's Finlay Prize for Ground-breaking Work on Influenza, Ebola



**Yoshihiro Kawaoka**, professor of pathobiological sciences at the UW School of Veterinary Medicine, has been selected as the recipient of the 2015 Carlos J. Finlay UNESCO Prize for Microbiology.

According to UNESCO—the United Nations Educational, Scientific, and Cultural

Organization—Kawaoka, a prominent influenza and Ebola researcher, was selected for his overall contributions to the field of microbiology. In particular, Kawaoka developed technology in 2005 that vastly improved flu vaccine production. In addition, his work has led to a better understanding of flu viruses and Ebola.

Kawaoka was recommended by a five-member jury of independent virologists and microbiologists from Ivory Coast, France, Egypt, Cuba and Sri Lanka, and was ultimately selected by UNESCO Director-General Irina Bokova. He was chosen from among nominations from 30 countries.

The Finlay Prize was established by UNESCO in 1977 to honor scientists who make

significant contributions to microbiology. This is the first time in 10 years that it has been awarded, though generally it is given every odd-numbered year, sponsored by the government of Cuba.

Kawaoka's research has sometimes been considered controversial. In addition to his work in vaccine development, Kawaoka studies influenza viruses for their ability to cause a pandemic. His goal is to help global health agencies identify these influenza virus strains before they arise, to help improve vaccine stockpiling efforts, and to ultimately develop a universal flu vaccine.

*Kelly April Tyrell*

Full story at [go.wisc.edu/kawaoka-unesco](http://go.wisc.edu/kawaoka-unesco).



*Jason Soukup*

## Dentistry and Oral Surgery Team Earns Honors at Veterinary Dental Forum

Faculty and staff from UW Veterinary Care's Dentistry and Oral Surgery Service received multiple awards and honors at this year's Veterinary Dental Forum, held on Oct. 29 – Nov. 1, 2015, in Monterey, Calif.

**Jason Soukup**, clinical associate professor of surgical sciences, won the American Veterinary Dental Society (AVDS)/Hill's Excellence in Research and Education Award, which is presented to an individual for outstanding contributions to veterinary dentistry.

Soukup was also awarded a \$7,500 research grant from the Foundation for Veterinary Dentistry for his proposal entitled "Quantification of the Influence of Distal Abrasion on the Fracture Resistance and Fracture Pattern of Canine Teeth in Dogs."

**Stephanie Goldschmidt**, a second-year resident with the Dentistry and Oral Surgery Service, also came away from the meeting with an award, earning second place in the research poster competition for her display, "The Influence of Force Direction on the Fracture Resistance and Fracture Pattern in Dog Canine Teeth."

In addition, **Christopher Snyder**, clinical associate professor of surgical sciences, was elected to the American Veterinary Dental College Board of Directors.

*Nik Hawkins*

## New Faculty, Staff Join UW School of Veterinary Medicine



**Marsha Callahan** has joined the advancement team at the UW School of Veterinary Medicine (SVM) as a development program specialist. She comes to the SVM from just across the street after 11 years with the University of Wisconsin Foundation. While at the Foundation, Callahan supported the development efforts of a number of campus units, including the SVM. Bringing expertise in project management, development program management, donor relations and stewardship, and special event management, Callahan will take on an array of responsibilities in support of the school's fundraising efforts, with a particular focus on its capital campaign.



**Ruth Houseright**, DVM, has joined the Department of Pathobiological Sciences as a clinical instructor in clinical pathology. She earned her veterinary medical degree from Kansas State University before completing a private practice internship in equine medicine and surgery and working in private practice in Illinois. Most recently, she completed a residency in clinical pathology at the UW School of Veterinary Medicine and is a diplomate of the American College of Veterinary

Pathologists. Her research interests include cancer immunology and immunotherapy as well as applications of flow cytometry to veterinary medicine.



**Guillaume Leblond**, DVM, DVSc, has joined the Department of Medical Sciences as a clinical instructor of neurology. He earned his veterinary medical degree at Ecole Nationale Vétérinaire de Nantes in France, after which he completed an internship at a small animal private practice in Nantes. He worked in several small animal private practices in France and served as an instructor at the University of Montreal College of Veterinary Medicine. Leblond then completed a neurology internship at the Ontario Veterinary College in Guelph where he later completed a neurology residency while earning his doctorate in veterinary sciences. His research interests include neurosurgery, biomechanics of spinal diseases, advanced surgical planning techniques, and neuronavigation.



**Nancy Parkinson** joined the UW School of Veterinary Medicine (SVM) in December as the assistant dean for human resources. She comes to the SVM

from the UW College of Agricultural and Life Sciences just down the road, where she spent the past six years in the Office of Human Resources, including five as director of human resources. Parkinson holds a bachelor's degree in business and human resources from Capella University, and she hopes to resume working towards her master's degree in human resources this fall. She is very excited about the opportunity to use her education and experience to support the faculty, staff, and students of the SVM.



**Kenneth Waller III**, DVM, has taken on a new role for the school as assistant dean of clinical affairs. He earned his veterinary medical degree from the UW School of Veterinary Medicine (SVM) before completing a small animal rotating internship at Kansas State University and a residency in diagnostic imaging at Iowa State University. He is a diplomate of the American College of Veterinary Radiology. Waller returned to the SVM as a clinical assistant professor in diagnostic imaging in 2011 and has been serving as a section head and residency director since 2013. His research interests include ultrasonography, elastography, magnetic resonance imaging, minimally invasive procedures, dairy cattle imaging, and advanced imaging of large animal patients.

# Comparatively Speaking

## Introducing a New Section to On Call



For many years, the UW School of Veterinary Medicine has produced a small, bi-annual

print newsletter called *Comparatively Speaking*, which has been distributed to alumni of the Comparative Biomedical Sciences (CBMS) Graduate Program and its predecessor, the Department of Veterinary Science. I am pleased to announce that, from this point forward, *Comparatively Speaking* will now appear as a special section in each issue of *On Call*.

There are many reasons for this change, from streamlining our various publication schedules to reducing print and postage costs. Most importantly, our goal is to communicate with a broader audience about the world-class research and instruction stemming from the CBMS program, as well as the many accomplishments of alumni from both programs. We hope you enjoy this new addition to the pages of *On Call*.

Nik Hawkins  
Editor

## New, Non-Lethal Test Helps State Officials Monitor

In May 2007, hundreds of freshwater drum—also known as sheepshead—turned up dead in Lake Winnebago and nearby Little Lake Butte des Morts, both inland lakes near Oshkosh, Wis. The fish were splotched with red, and their eyes were swollen and bulging.

The Wisconsin Department of Natural Resources (DNR) launched a quick response and, working with the Wisconsin Veterinary Diagnostic Laboratory (WVDL), quickly learned that a deadly virus was responsible: viral hemorrhagic septicemia virus, or VHSv. First detected in the U.S. among freshwater fish in 2005—including muskellunge, perch, and walleye—VHSv had already caused mass fish die-offs in the Great Lakes and several regional waterways connected to them.

The DNR subsequently encouraged anglers and boaters to adopt practices that have helped slow the spread of VHSv into other inland lakes in Wisconsin, but a new study led by **Tony Goldberg**, professor of epidemiology and pathobiological sciences at the UW School of Veterinary Medicine (SVM), shows the virus is still circulating in Lake Winnebago. It also shows that some fish actually survive VHSv infection but could be sources of future infections.

“It’s still possible to transmit the virus to fish in other lakes,” says WVDL Virology Section Head **Kathy Toohey-Kurth**, a member of the research team and a clinical professor at the SVM. Though large numbers of dead fish are no longer washing up on shore, “it shows the virus is still transmitting and people still have to be careful to follow all the guidelines from the DNR, like not carrying buckets of bait between waters,” she adds.

Drum are a food source for



TONY GOLDBERG

A researcher takes a blood sample from a fish on Lake Winnebago, where viral hemorrhagic septicemia virus (VHSv) still lingers, according to a new study involving faculty from the UW School of Veterinary Medicine.



UW GLOBAL HEALTH INSTITUTE

Goldberg

popular game fish like walleye and sauger. VHSv does not infect people, but 28 species of fish are vulnerable to the virus, which causes them to bleed to death. Some of these species, like bass and muskellunge, are iconic fishes that help support Wisconsin’s \$2.3 billion-a-year sport fishing industry.

The findings of the current study, and the new diagnostic test upon which it relied, are aiding the DNR’s efforts to monitor game fish in waterways throughout the state, in addition to better informing its stocking efforts.

The new diagnostic test was developed by Toohey-Kurth—an expert in veterinary diagnostic testing—and Anna Wilson-Rothering, a WVDL scientist and lead author of the study.



WVDL

Toohey-Kurth

Efforts to develop the test started in 2009, shortly after Goldberg joined the faculty of UW–Madison and became involved in measures to prevent the spread of VHSv.

“I met with the DNR, and we discussed some of the problems,” says Goldberg, who is also a faculty trainer with the Comparative Biomedical Sciences Graduate Program and associate director for research at the UW Global Health Institute. “It was very difficult to diagnose. It required you to kill the fish and take its internal organs to isolate the virus. It was also a lengthy process and very labor intensive.”

The new test requires just a small blood sample from the fish, which can be caught, sampled, and released back to the water. The

## Deadly Fish Virus in Wisconsin Lake

researchers take the blood back to the lab and look for evidence the fish were once infected with the virus: a specific antibody produced by the fish in response to infection.

The research team worked with the DNR to collect blood from nearly 600 drum in Lake Winnebago twice a year in 2011 and 2012—both spring and fall—and used the test to look for VHSV antibodies. The team also collected fish to look for those that may still harbor active virus, finding it in just one: a large, older female. This provided “proof that the virus is still present in the lake,” Goldberg says. “Fish are still being exposed.”

The researchers believe that enough drum have survived the virus and developed protective

antibodies that mass fish kills have probably not occurred. This phenomenon is referred to as “herd immunity,” similar to what happens when a large group of people is vaccinated against a disease like measles. If enough individuals are protected, less of the virus circulates and infects the unprotected.

But once levels of protected individuals fall, either from deaths from other causes or as large numbers of new, unprotected fish are born, another wave of VHSV-induced deaths could occur. Researchers will continue to monitor for the virus, and the study, they say, underscores the importance of collaborative scientific efforts with the DNR and the role these efforts play in addressing the needs of the state.

“This test will continue to be useful to monitor VHSV transmission,” says Toohey-Kurth. “With further refinements we will be able to better assist our state partners with management of the disease.”

The study, published in the *Journal of Clinical Microbiology*, was supported by the University of Wisconsin Sea Grant Institute with funding from the National Oceanic and Atmospheric Administration. Co-authors of the study include now-retired fish health specialist Sue Marcquenski and other scientists from the DNR, researchers from the U.S. Geological Survey (USGS), and scientists from the University of Wisconsin-Stevens Point and the University of Iowa.

*Kelly April Tyrell*

## Nobel Recipient Campbell Earned Degrees in Veterinary Science



**William C. Campbell**, a master's and doctoral graduate of the Department of Veterinary Science at the

University of Wisconsin–Madison, was awarded a share of the 2015 Nobel Prize in Physiology or Medicine in late 2015.

Campbell shared the prize with Satoshi Omura for their work leading to the discovery of the drug ivermectin, derivatives of which played an important role in dramatically lowering the incidence of the tropical diseases river blindness and lymphatic filariasis, commonly known as elephantiasis, both of which afflicted tens of millions of people in the world's tropical regions.

Working with cell cultures of different strains of the soil

bacterium *Streptomyces*, discovered and cultured by Omura, Campbell showed that a component of one of the cultures was remarkably effective against parasites in domestic and farm animals. Purified, the agent was named avermectin. A chemical modification of the drug, known as ivermectin, was later tested in humans and shown to safely and effectively control the microscopic parasitic larvae that cause serious human diseases in the tropics. Introduced for use in humans in 1982, the drug is highly effective and freely available worldwide.

“Ivermectin is absolutely critical to the effort to control these diseases and has helped millions of people in the developing world,” according to Bruce Christensen, a professor emeritus of parasitology at the UW School of Veterinary Medicine (SVM).

River blindness, explains SVM

pathobiological sciences Professor Tim Yoshino, has been nearly eradicated thanks to Campbell's discoveries and the work of the Carter Center, which, working with the drug manufacturer Merck, has distributed more than 225 million free doses of the drug.

The drug is also used to control parasites in dogs, horses and other livestock. Ivermectin has been used widely in small animal practice since the 1980s, according to Sandi Sawchuk, a clinical instructor at the SVM. “Since ivermectin hit the small animal pharmaceutical market, other avermectin drugs have been discovered. All are used for heartworm prevention but also intestinal parasites and ear mites. I can't imagine practicing without them,” says Sawchuk.

*Terry Devitt*

Full story at: [go.wisc.edu/campbell-nobel](http://go.wisc.edu/campbell-nobel)

## SVM's Comparative Biomedical Sciences Graduate Program Earns High Ranking

The UW School of Veterinary Medicine's Comparative Biomedical Sciences (CBMS) Graduate Program ranked in the top 10 for the veterinary medical sciences discipline in the 2014–15 academic year, according to the most recent data from the Academic Analytics Database. This is the fourth year in a row that the program has earned such high marks.

“We have an extremely strong tradition of excellence in research and graduate training in the veterinary medical sciences on this campus, stemming back to our precursor, the Department of Veterinary Science, which was founded more than 100 years ago,” says Dean Mark D. Markel. “Our ranking is one sign among many that this excellence continues today as students, staff, and faculty in our CBMS program push the envelope in everything from infectious disease to medical technology to virology.”

Academic Analytics gathers and aggregates metrics on the research productivity of nearly 400 institutions nationally into a comparative database. The database compiles information in categories such as grant dollars earned, number of books or articles published by faculty, and number of faculty with awards or honors. The goal is to provide clear, unbiased information that each graduate program can use for easy comparison at a discipline-by-discipline level as well as overall university performance.

*Nik Hawkins*

## SVM Scientists Use Biotron's Climate Simulation to Enhance Research

One of the most flexible and unique research facilities in North America sits in plain sight, but near anonymity, on the west side of the University of Wisconsin–Madison campus.

“When I tell people I work at the Biotron, they say, ‘Oh, I’ve walked by that building a million times, and I never knew what went on in there,’ “ explains its assistant director, Isabelle Girard. “‘It seems so secretive, with no windows.’ But it’s really easy to understand what we do here, whether you’re a part of the university or not.”

Here’s the Biotron’s big secret: It is whatever you want it to be (within terrestrial reason).

Built by the National Science Foundation in the 1960s at 2115 Observatory Drive, the Biotron was designed to be able to simulate every climate on Earth except Antarctica. Scores of lab rooms spread across three floors can deliver temperatures from –20 degrees to 45 degrees Celsius (about –4 to 113 Fahrenheit), from 100 percent relative humidity down to nearly none, and light intensity from dark to half-strength daylight—which is more blinding than it sounds.



BRUCE RICHTER

*Freshwater snails feed on lettuce in an aquarium tank in the Biotron Laboratory at the University of Wisconsin–Madison. The snails are used in research conducted by Timothy Yoshino, professor of pathobiological sciences, to investigate the transmission of the human blood parasite Schistosoma mansoni, one of four species that infects an estimated 240 million people worldwide.*

There are rooms tall enough for growing trees and rooms isolated from sound and vibration. There are even hypobaric (low-pressure) chambers whose thin atmosphere has provided the simulated circumstances needed to test devices built to administer accurate doses of vaccines and drugs at high altitude.

That kind of flexibility has drawn industrial clients from Harley Davidson to Parker Pen to Middleton-based Springs Window

Fashions that subject their products to extremes and benchmark their performance in precisely monitored conditions. And it gives academic researchers the opportunity to design experiments that couldn’t happen in conventional lab space—or without committing substantial time and money to one-off lab construction.

“It’s a researcher’s dream in terms of organisms that are in an altered state,” says Hannah Carey,

the Biotron’s director and a professor of comparative biosciences at the UW School of Veterinary Medicine (SVM).

Carey studies the effects of hibernation on small, but surprisingly hardy, 13-lined ground squirrels, exploring how their digestive tracts emerge from the long hibernation season in ways that may help humans with digestive disorders.

Her animals spend the warm months in a SVM facility. But when the days grow short and the animals are fat and prepared for winter dormancy, Carey moves them to the Biotron, turns down the temperature, and turns off the lights.

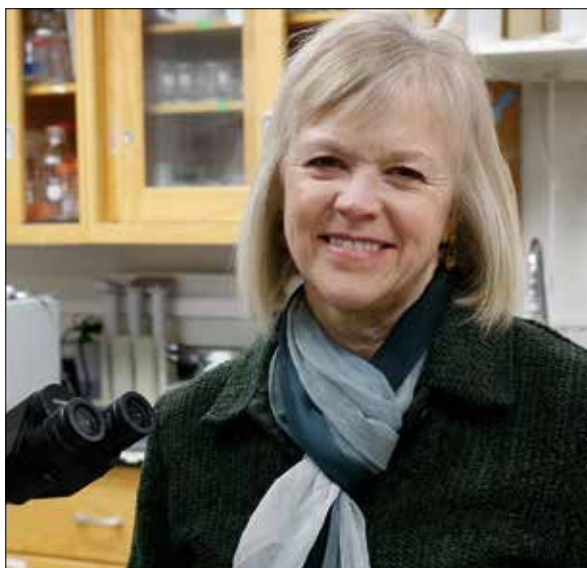
“They get comfortable right away, and we know they will stay that way,” says Carey, who has conducted research in the Biotron for all of her 26 years at UW–Madison. “You can so carefully manage the experimental environment and without having to assign anyone to constantly monitor a thermometer or come in in the middle of the night to adjust the thermostat.”

The building has been revamped and updated in sections since 2012, making \$7 million



ROB STREFFER

*A 13-lined ground squirrel lies dormant at the Biotron Laboratory. Hannah Carey, professor of comparative biosciences and Biotron director, studies the effects of hibernation on the hardy squirrels, exploring how their digestive tracts emerge from the long hibernation season in ways that may help humans with digestive disorders.*



NIK HAWKINS

worth of improvements in efficiency and programmability. Where punch cards once ran the show, the works are now tied together by a computer system from Glendale-based Johnson Controls that can make precise alterations to temperature, humidity, and other factors minute-by-minute and on a pre-set schedule.

“Researchers working in conventional labs often set up their experiments in eight-hour increments, because they have people working in shifts,” says Girard, “But that’s not a restriction at the Biotron.”

Tim Yoshino, a SVM professor of parasitology, relies on the Biotron to help him keep his research subjects separated from each other. Yoshino studies a microscopic flatworm called *Schistosoma*, a blood parasite that infects hundreds of millions—and kills hundreds of thousands—of people every year.

The flatworm’s larvae live in another host, a short list of freshwater snails that live in the tropics. They like their water at a nice, steady 26 degrees Celsius (close to 80 degrees Fahrenheit). And when they’re comfortable, they start making baby snails.

“Snail embryos are 1 mm long, and cling to anything—food, plants, gloves, tools,” says Yoshino, who has worked in the Biotron for more than 15 years. “So there’s always the chance in a lab that you’re going to contaminate a tank of one type of snail with another.”

The snails are also hermaphroditic, capable of reproducing with male or female snails of other species, so all it takes is one tiny invader in the wrong tank to upset an experiment.

“Because the Biotron has rooms in a cluster that can be so completely separated from each other, we can raise different strains of the same host — the same snail species, but with genetic differences that affect the way they react to

the parasite—in the environment they like, but safely apart from each other,” says Yoshino. “It’s very manageable and efficient.”

And that could help Yoshino and others find a way to disrupt the worm’s life cycle and spare so many individuals the complications of infection.

The range of overlapping and shifting adjustments the Biotron

staff can design for researchers is so broad, it often doesn’t occur to scientists as a possibility when they design their studies. Girard and Carey wish more labs would consider the Biotron for their work, as the building is open to work from campus and beyond, both public and private.

“We talk to people who say, ‘Oh, I would have done a different

experiment had I known this environment was available,’” Girard says. “That makes us proud, in a way, to know the impact the Biotron has. But it also makes us wish more people didn’t think it was so mysterious.”

Chris Barncard

Read the full story at [go.wisc.edu/biotron-story](http://go.wisc.edu/biotron-story).

## Chinchilla Urinalysis Study Improves Disease Diagnosis

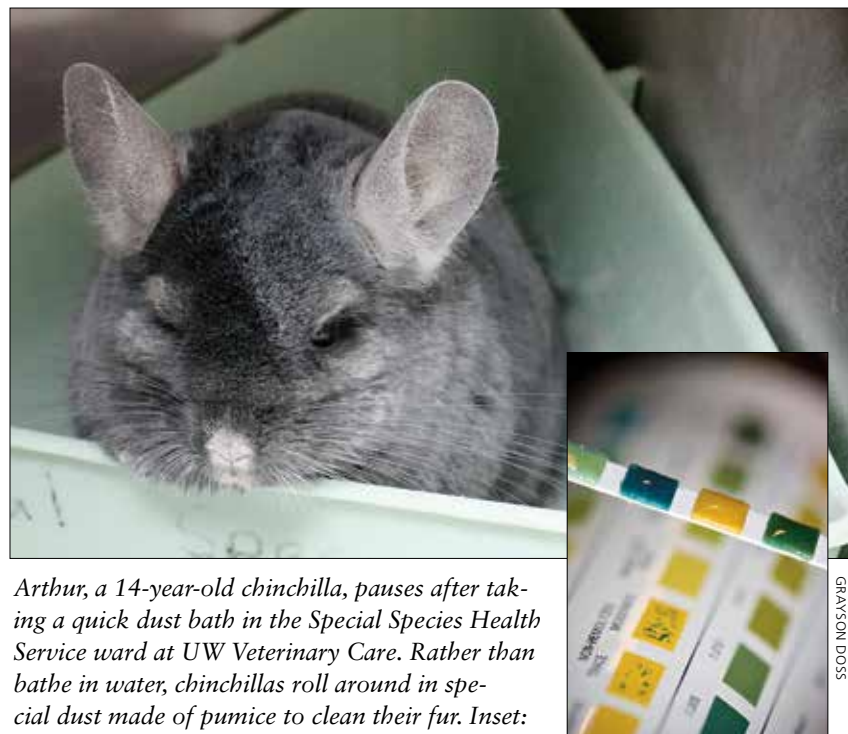
Behind every farm-bred, award-winning, sapphire-furred show chinchilla is a discrete reservoir of urine, which veterinarians Grayson Doss and Christoph Mans view as a window into the unexplored inner workings of chinchilla health. Fortunately for them, an opportunity to delve into chinchilla urinalysis presented itself in November 2014 during the Empress Annual National Meeting (EANM), a yearly congregation of chinchilla breeders in Barneveld, Wis., that brings together a significant number of the fluffy rodents.

“We thought, ‘surely we can do something with this large animal population,’” says Doss, a zoological medicine resident at the UW School of Veterinary Medicine (SVM). Turns out they were right, and the study Doss and Mans developed has bolstered the previously scant supply of data on chinchilla medicine.

Easily recognized by their oversized ears and their coveted velveteen coats, chinchillas are critically endangered in the wilds of their native South America, largely due to overhunting in the 19th century. Today, these rodents are bred in captivity for their fur, but they’re also kept as exotic pets or show animals.

Chinchillas can also provide insights into human health. For example, their large middle ears and eardrums make them uniquely suitable as animal models to better understand and treat human ear diseases, so they have been studied extensively in this respect. However, the nature of chinchilla urine has been fairly nebulous, leaving veterinarians with little information regarding one of the most basic tests used in patient diagnosis.

Since collecting urine is a non-invasive procedure that requires little by



Arthur, a 14-year-old chinchilla, pauses after taking a quick dust bath in the Special Species Health Service ward at UW Veterinary Care. Rather than bathe in water, chinchillas roll around in special dust made of pumice to clean their fur. Inset: Urinalysis includes the use of reagent strips. Urine samples are placed on chemical pads, and how they react (i.e., change shades) indicates what substances, such as white blood cells or glucose, can be found in the urine, as well as their estimated range of concentration.

way of input from breeders, Mans, a clinical assistant professor of zoological medicine at the SVM and the study’s principal investigator, proposed that they gather samples of urine produced during the EANM and perform a comprehensive urinalysis.

With the help of two SVM clinical pathologists, Ruth Houseright and Julie Webb, Doss and Mans assembled a portable urinalysis lab in the coatroom of the hotel where the meeting was being held. Throughout the event, the research team ran more than 40 urine samples through their makeshift lab.

“The nice thing about urinalysis is that you can tell if there’s some sort

of disease in the urinary tract,” Doss explains. “Usually, if there’s a bladder or urethra problem, you can pick it up in the sample.” Urinalysis can also be used to detect metabolic abnormalities, monitor kidney function, and alert veterinarians to the presence of anomalous tissue growth (i.e., *neoplasia*) and cancerous cells.

The study is scheduled to be published in the *Journal of the American Veterinary Medical Association (AVMA)* in spring 2016, and the new information will improve veterinarians’ ability to accurately diagnose disease in chinchillas.

AnnaKathryn Kruger

NIK HAWKINS

GRAYSON DOSS

## WisCARES from page 1

he was a student focused on providing animal and human health information to Dane County's HIV positive pet owners. Run by volunteers, the successful hotline allowed Gilles to "stay in the conversation about access to veterinary medical care," even when he became a private veterinarian. But it was a later incident that he credits for WisCARES' genesis.

"A homeless man came to (UW Veterinary Care) with his dog who had an ear infection," says Gilles. "The school has funds to help cushion some of these situations, but there was a miscommunication and he was turned away at the door because he wasn't able to pay."

While the man ultimately found help on campus for his dog, the encounter prompted Dean Mark D. Markel to put out the call to do more. WisCARES was born.

## 'These Are Our Kids'

At the clinic on this dreary Saturday morning, Gilles stands in the cramped downstairs break room of the building, which was donated by St. Vincent de Paul of Madison. The former Meriter Health Hut at 1312 Culmen St. is small, and the basement sometimes floods, but Gilles and the team are grateful for the space.

It has two exam rooms, designed for human patients; a small waiting area with two desks; a tight space converted to a laboratory with the addition of a microscope; and a supply room for pet food, litter, flea medication, and other items donated by local pet stores, industry, and private individuals, including some WisCARES clients.

The veterinary medical student volunteers, seven in all, gather at the small kitchen table, poring over charts and checking their notes. Some of the animals scheduled in the clinic that day will be there to follow up on care they



William Gilles (right), Class of 2013, director of WisCARES, talks about a case with volunteer veterinarian Chuck Schobert, Class of 1996.

previously received.

One of those patients is Tina, who is there with her brother, Ike, and owners Kelly and Clarence. Tina, brown and diminutive, was recently spayed at the SVM, and it is time to remove her sutures.

Third-year veterinary medical student Lindsey Meyer, volunteering for the first time, remembers Tina from the surgery. Meyer and second-year student Melissa Hayes team up to provide her care while Gilles or another veterinarian, volunteer Charles Schobert, Class of 1996, supervise and participate in each case.

Kelly and Clarence brought Tina's surgical paperwork and empty medicine vials. They discuss her runny nose and weight loss with the students, who record Tina's heart rate, examine her sutured belly, and ask about her bowel habits. Schobert enters the exam room to assist the students. Together, they remove Tina's sutures and discuss Ike's impending neuter surgery with the couple.

"We are very grateful for WisCARES and UW, for all the help, from pet food dishes to food," says Kelly. "These are our kids."

## Students Building Skills

One of the goals of WisCARES is to provide hands-on, supervised

educational opportunities to UW-Madison students.

"We focus on giving students a lot of case ownership," Gilles says. "They are coming through this program before they hit their clinical year, and it gives them the opportunity to take patient history and do physicals and to start building those skills. They might not have the medical knowledge yet to come up with the exact right diagnosis or treatment program, but it's a great way for them to learn."

There are now also 11 social work students involved in the program. Along with volunteer social workers from the community, those students work with clients to determine their eligibility for the program and help connect them with housing resources and other social services. Maurice Gattis, assistant professor at the UW-Madison School of Social Work, is a co-founder of WisCARES.

"The more we got into the research to lay the groundwork, the more we realized that for people experiencing homelessness, having a pet could be a barrier to accessing shelter, because shelters don't allow pets," says Gattis. "Some people sleep in their cars; some people stay in domestic violence situations because they're afraid their pet will be abused."

Often, people put their pets first. They will look for help for their cat or dog, but not for themselves.

In August 2014, in partnership with a community cat clinic and the SVM, WisCARES began offering short-term boarding for cats and dogs to help their owners transition into housing, address a medical situation, or have a safe place for their pet to stay when needed. Gilles says they hope to start a foster-like boarding network to serve more pets for longer periods of time.

In its first year, WisCARES provided veterinary medical care to 74 families, including 49 dogs and 32 cats. Between March and July 2015, it provided housing advocacy and social services at least once to 35 families and boarded six dogs and 10 cats for 14 families.

Not all of WisCARES clients are homeless, but all have experienced homelessness or near homelessness in the recent past. Some don't identify themselves that way, though they may be sleeping on the couch of a friend or relative.

"Individuals experiencing homelessness are more likely to be a victim rather than a perpetrator, so animals help. They provide companionship, help with mental health, reduce anxiety ... they help in coping," says Gattis. "Often, individuals experiencing homelessness are invisible. Having this animal day and night may provide this unconditional love that may be beneficial."

Schobert says he often meets people who will go to sleep hungry so their pets can eat. "Pets are more than their pets," he says. "Having an animal can really save lives."

It was Ruthie, really, who likely saved the life of Shenanigans, the white ball of fluff she found running across Badger Road seven or eight years ago.

"I don't know that I would have a dog if I hadn't found her,"

says Ruthie, sitting in a clinic exam room. “It wasn’t the highest thing on my list, but it’s a good thing ... she’s a love bug. My grandkids are crazy about her.”

She and her partner, Eric, learned about WisCARES from a food pantry and brought Nanny, as she’s known, to the clinic because she had been scratching herself raw. Today they’re in for a checkup, and Nanny is doing much better. Third-year veterinary medical student Georgia Wolfe talks to Ruthie and Eric about putting Nanny on allergy medicine and using an anti-itch shampoo, both of which she brought up from the supply room.

“I’m glad the clinic was here,” Ruthie says. “I got sick recently, and money is tight ... If something major happens, I wouldn’t let her suffer, but I didn’t have the money, and I’m thankful.”

Wolfe says working with WisCARES clients feels more intimate than experiences in a more traditional setting. These clients’ pets, she says, “provide them with something essential, at an emotional level. They do everything they can for their animals.”

*Kelly April Tyrrell*

For the complete story, visit [go.wisc.edu/wiscares-story](http://go.wisc.edu/wiscares-story).

## IN MEMORIAM

The UW School of Veterinary Medicine regrets to announce the recent loss of an alumna. **Beth Mayer**, Class of 1987, passed away on September 19, 2015. She was a small animal veterinarian who began her career in Madison and practiced in Greenfield, Summit, and Waukesha, Wis., before starting her own clinic, Bark River Animal Hospital, in Dousman, Wis., in 1996. For the past six years, she served as a part-time relief veterinarian for three clinics in Tucson, Ariz.



MORRIS ANIMAL FOUNDATION

### Morris Animal Foundation Selects SVM Alumna for Investigator Award

**Kathryn M. Meurs**, Class of 1990, has been named the first recipient of the Morris Animal Foundation’s Mark L. Morris Jr. Investigator Award.

The award focuses on canine mitral valve disease, the most common cause of heart disease in dogs. Meurs, a professor and associate dean for research and graduate studies at the North Carolina State University College of Veterinary Medicine, is a leader in the field of cardiac disease genetics in companion animals, with a proven track record of successfully identifying the genetic basis for numerous canine and feline cardiac diseases.

Meurs’ work has led to the identification of genetic mutations for heart disease in companion animals, as well as the development of clinical management recommendations, including for feline cardiomyopathy in Maine coon and ragdoll cats, boxer dog cardiomyopathy and, most recently, long QT syndrome in English springer spaniels. With support from the award, Meurs and her research team hope to identify genetic variants that lead to the development of mitral valve degeneration and use that information to innovate treatment and prevention plans for dogs with high-risk DNA variants.

### WVMA Recognizes SVM Alumni Achievements

Two UW School of Veterinary Medicine alumni received awards from the Wisconsin Veterinary Medical Association (WVMA) at the organization’s one hundredth annual convention in October 2015.

**Douglas Kratt**, Class of 1998, earned the WVMA Veterinarian of the Year Award for his many contributions to veterinary medicine. Co-owner of

Central Animal Hospital in Onalaska, Wis., along with his wife, **Kimberly Kratt**, Class of 2000, he is highly involved in organized veterinary medicine at the national, state, and local levels. Within his local community, he has established medical and preventative care protocols for police K9s, and he provides free veterinary medical care for K9 officers with the Wisconsin State Patrol, Onalaska Police Department, Campbell Police Department, Holmen Police Department, and Tomah Police Department.

**Ann Sherwood Zeiser**, Class of 1990, received the Meritorious Service Award in recognition of her service, commitment, and contributions to the WVMA and organized veterinary medicine. She practices small animal medicine at the Middleton Veterinary Hospital in Middleton, Wis.



### Memoir by SVM Alumnus Chronicles Healing Journey

In his book, *Getting to Heaven by Going through Hell*, **Scot Hodkiewicz**, Class of 1993, details the long road to recovery after he and his wife, **Mona Hodkiewicz**, Class of 1994, as well as their three children, were involved in a near-fatal head-on collision with a drunk driver. From the back cover: “Left with a mangled body and a broken spirit in the aftermath of a head-on collision with a drunk driver, Dr. Scot entered his own personal hell of pain, addiction, and potential tragedy. Initially filled with anger, hatred, and self-pity, he would come to understand the power of forgiveness and that his struggles were ultimately the path to his salvation.”

The Hodkiewiczzes practice veterinary medicine in Lake Geneva, Wis., and live with their three children on a 300-acre farm where they raise horses and a menagerie of other animals.

Learn more about the book at [drscothodkiewicz.com](http://drscothodkiewicz.com).

## Sixty-four Percent



Recently, the Wisconsin Foundation and Alumni Association (WFAA) surveyed University of Wisconsin–Madison graduates

to better understand how alumni are engaged with the university. One result in particular stood out for me. Most School of Veterinary Medicine graduates feel their connection to UW is through their school (rather than the campus in general, athletics, etc.). This was true for 64 percent of our alumni, more than double that for alumni from any other school or college.

I have been thinking about this number and what it means. It didn’t surprise me based on what I have learned from you over the years about your experiences as students and seeing your interactions at reunions and alumni receptions. The four years you spent as DVM students were rigorous and intense. You formed close bonds with your classmates, faculty, and staff as you acquired the knowledge and skills needed to be practicing veterinarians.

And when you get together with your fellow classmates, the stories you tell about your time here include memories of laughter and tears. You supported one another while in school, and I see how that continues after graduation. Even if you’ve gone years without being in touch, when you connect at a reunion or a reception, it often seems as if no time has gone by.

Sixty-four percent confirms for me what I already knew—that the SVM is a special place on campus, and the experience of being a DVM student is unique. I’d love to learn more, though, and hear from you about your connection to the SVM and why it matters to you. Please let me know by reaching me at [kristi.thorson@wisc.edu](mailto:kristi.thorson@wisc.edu) or 608-265-9692. I look forward to hearing from you.

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

[www.vetmed.wisc.edu](http://www.vetmed.wisc.edu)

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# On Call

SPRING 2016

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

## Nuclear Imaging Upgrades Benefit Both Horses and Small Animal Patients

New enhancements to nuclear imaging technology at UW Veterinary Care (UWVC) are speeding up visits and improving diagnoses for animal patients.

For the last 25 years, UWVC has employed an imaging method called nuclear scintigraphy, in which tracers—small doses of radioactive elements—are tagged to injected drugs that travel to specific sites in the body.

And now, a new and improved gamma camera adds increased sensitivity and computing power to this technology, providing images more quickly and with greater detail. In addition, the new gantry is quieter and more mobile, which reduces stress for animals. UWVC



NIK HAWKINS

*Wibby, a 16-year-old thoroughbred gelding, undergoes a whole body bone scan, assisted by fourth-year veterinary medical student Sarah Springborn and diagnostic imaging technicians Lori Pike and Amy Lang.*

is the only veterinary medical clinic in Wisconsin to offer nuclear imaging, which is especially useful for honing in on the locations of active bone conditions in horses.

“When a horse comes to

us displaying a lameness that can't be localized by examination alone, we can inject it with a nucleotide that tracks to areas where bones are repairing from a break, responding to infection, or

having an arthritic response,” says Kenneth Waller, clinical assistant professor of diagnostic imaging. “Using the gamma camera, we can get a pretty good idea of where the problem lies and then use radiography, ultrasound, or CT to do a more directed and detailed study of the area.”

Nuclear imaging also has applications for small animals, from screening for metastatic bone cancer to assessing thyroid and kidney function in cats.

*Nik Hawkins*